



DKP. PROV  
MALUKU UTARA

# Proceeding 17<sup>th</sup> IC

Ternate, 23-24 April 2018



ISBN	978-602-50037-6-9
http	//proceedings.p-adri.or.id

Published by:  
Perkumpulan Ahli & Dosen Republik Indonesia (ADRI)

**ISBN: 978-602-50037-6-9**  
**<http://proceedings.p-adri.or.id>**

**PROCEEDING 17<sup>th</sup> ADRI - UMMU 2018**

**International Conference and Call for Papers**  
**“Marine and Environmental Conservation”**

**Ternate, Maluku Utara-Indonseia,**  
**23 - 24, April 2017**

**Published by:**  
**Perkumpulan Ahli & Dosen Republik Indonesia (ADRI)**

ISBN: 978-602-50037-6-9  
<http://proceedings.p-adri.or.id>

## PROCEEDING 17<sup>th</sup> ADRI - UMMU 2018

### International Conference and Call for Papers “Marine and Environmental Conservation”

Ternate, Maluku Utara-Indonseia,  
23 - 24, April 2017

**Hosted by:**

- Perkumpulan Ahli & Dosen Republik Indonesia (ADRI)
- ADRI DPD Maluku Utara
- Universitas Muhammadiyah Maluku Utara
- Dinas Kelautan dan Perikanan Provinsi Maluku Utara

**Published by:**

Perkumpulan Ahli & Dosen Republik Indonesia (ADRI)

**Publisher Address:**

Sekretariat: Kantor Kopertis 3

Jalan SMA Negeri 14, Cawang RT/01/RW.09 Jakarta Timur 13630

website: <http://proceedings.p-adri.or.id>

ISBN: 978-602-50037-6-9

## PROCEEDING 17<sup>th</sup> ADRI – UMMU 2018

### International Conference and Call for Papers “Marine and Environmental Conservation”

Ternate, Maluku Utara-Indonseia,  
23 – 24, April 2017

xiii, 558 pages, 28 cm  
Copyright Reserved  
*Copyright @ 2018*  
ISBN: 978-602-00000-0-0

**Chief of Editor:**

Dr. Achmad Fathoni Rodli, M.Pd. (UMAHA Sidoarjo)

**Executive Editor:**

Drs. Andi Mursidi, M.Si. (Manager ADRI Publisher, STKIP Singkawang).

**Board of Editor:**

Dr. Saiful Deni, S.Ag, M.Si (UMMU Ternate)  
Dr. Ahmad Talib (UMMU Ternate)  
Umar Tangke, S.Pi, M.Si (UMMU Ternate)  
Adi. F. Mahmud, S.Pd, M.Pd (UMMU Ternate)  
Erwin Gay, S.Pd, M.Ed.CS (UMMU Ternate)

**Reviewer:**

Prof. Seung Wook Kim. (Korea University, Korea Selatan).  
Prof. Dr. Wahid Bin Razzaly (Universiti Tun Hussein Onn Malaysia, Malaysia).  
Prof. Assoc. Dr. I-Hsien Ting. (National University of Kaohsiung, Taiwan).  
Prof. Assoc. Hunsu Punapayak. (Chulalongkorn University, Thailand).  
Prof. Dr. R. Partino (Universitas Cendrawasih, Irian Jaya).  
Prof. Dr. Endry Boeriswati, M.Pd. (UNJ, Jakarta).  
Prof. Dr. Atmazaki, M.Pd. (Universitas Negeri Padang, Sumatera Barat)  
Prof. Dr. Nasrudin Suyuti, M.Si. (UNU Sulawesi Tenggara)  
Prof. Dr. Bambang Suprianto, MT. (UNESA, Jawa Timur)

Prof. Dr. Harapin Hafid, M.Si. (Universitas Halu Oleo, Kendari, Sulawesi Tenggara)  
Prof. Dr. H. Sofyan Sauri, M.Pd. (UPI, Bandung, Jawa Barat)  
Prof. Dr. Aunurrahman, M.Pd. (Universitas Tanjungpura, Pontianak, Kalbar)  
Prof. Dr. Drs. Junaidi H. Matsum, M.Pd. (Universitas Tanjungpura, Pontianak, Kalbar)  
Prof. Dr. Edy Tandililing, M.Pd. (Universitas Tanjungpura, Pontianak, Kalbar)  
Prof. Dr. Drs. Eddy Yunus, ST, MM. (Universitas Dr. Soetomo, Surabaya, Jawa Timur)  
Prof. Dr. H. Achmad Slamet, M.Si. (UNNES Semarang, Jawa Tengah)  
Prof. Dr. H. Maman Surachman, M.Sc. (UNNES Semarang, Jawa Tengah)  
Prof. Dr. Sugiyo, M.Si. (UNNES Semarang, Jawa Tengah)  
Prof. Dr. Ir. Ramatullah Rizieq, M.Si. (UPB Pontianak, Kalbar)  
Prof. Dr. Ujianto, M.Pd. (UNTAG Surabaya, Jawa Timur)  
Dr. Andi Suhandi, M.Si. (UPI, Bandung, Jawa Barat)  
Dr. Meithiana Indrasari, MM., ST. (Universitas Dr. Soetomo, Surabaya)  
Dr. Ibrahim Ingga, M.Ak. (UNTAG Surabaya, Jawa Timur)  
Dr. Ahmad Yani T, M.Pd. (Universitas Tanjungpura, Pontianak, Kalbar)  
Dr. Ardi Marwan, S.Pd., TESOL. (POLNEP, Pontianak, Kalbar)  
Dr. Adnan Mahdi (IAI Sultan Syafiudin, Sambas, Kalbar)  
Dr. H. Wajidi Sayadi (IAIN, Pontianak, Kalbar)  
Dr. Sajiyono, ST., M.Kes. (UNTAG Surabaya, Jawa Timur)  
Dr. Siti Nurjanah, M.Pd. (Universitas Negeri Jakarta)  
Dr. Eri Sarimanah, M.Pd. (Universitas Pakuan, Surabaya)  
Dr. Rosida Tiurma Manurung, M.Hum. (Univ. Kristen Maranatha, Bandung, Jabar).  
Dr. Surti Kurniasih (Universitas Pakuan, Surabaya)  
Dr. Ir. Achmad Daeng, GS., SE., MM., CPP. (Universitas 45 Surabaya)  
Dr. Wida Kuswida Bhakti, S.Kep.,M.Kes. (STIKES Muhammadiyah Pontianak, Kalbar)  
Deffi Ayu Puspito Sari, Ph.D. (Universitas Bakrie, Jakarta)  
Dr. M. Ikhsan Setiawan, ST., MT. (Univ. Narotama)  
Dr. Abdul Halik, MM. (UNTAG Surabaya, Jawa Timur)  
Dr. Hj. Widyatmike Gede Mulawarman, M.Hum. (Unisitas Mulawarman, Samarinda, Kaltim)

**Prosiding dan IT Team:**

Otto Fajarianto, M.Kom.	(IT DPP ADRI)
M. Barid Nizarudin Wajdi, MA	(STAI Miftahul U. Kertosono)
Agus Kurniawan, S.Kom.	(STKIP Singkawang)
Ade Setiawan	(STKIP Singkawang)

**Published by:**

Perkumpulan Ahli & Dosen Republik Indonesia (P-ADRI)

**Publisher Address:**

Sekretariat: Kantor Kopertis 3  
Jalan SMA Negeri 14, Cawang RT/01/RW.09 Jakarta Timur 13630  
<http://proceedings.p-adri.or.id>

## **PREFACE**

Praise being said to Allah Almighty God for all the grace and guidance that has been given to us all, so the Prosiding 17th ADRI – UMMU 2018 International Conference and Call for Papers “**Marine and Environmental Conservation**” Ternate, Maluku Utara-Indonesia, 23 – 24, April can be realized. Proceedings contains a number of articles and research papers from lecturers, teachers, students, researchers and / or observer of the development of science and technology.

Hopefully, these proceedings may give benefit to us all, for the development of science, technology, arts, culture, and sports. In addition, is also expected to be a reference for the nation and state-building efforts so that science and technology become a strong pillar in the face of the ASEAN Economic Community.

Lastly, there is no ivory that is not cracked. We are sorry if there are things that are less pleasing.

Thanks you very much.

Ternate, April 23, 2018.

Publisher Manager of Perkumpulan Ahli & Dosen Republik Indonesia (ADRI),

Andi Mursidi

## Table on Contents

<b>Title</b>	<b>Page</b>
Sustainable Competitive Advantage in Finance and Management Information System <b>Achmad Daengs, GS, Andi Reni, Setiabudhi, Syamsul Hidayat, Wahyudi Henky Soeparto</b>	<b>1</b>
Voting Behavior on PILKADA Kabupaten Sula 2015 <b>Agusmawanda</b>	<b>11</b>
The Influence Of Internal And External Factors Toward The Small Scale Business Entrepreneurs' Perception Of Green Manufacturing (Case Study On Food Products In Semarang City) <b>Agustine Eva Maria Soekes</b>	<b>14</b>
The Study of Quality Organoleptik and Microbiology Anchovies Dry in Toniku Village West Halmahera North Maluku Province, Indonesia <b>Ahmad Talib, Farid Dunga, Sitkun Deni</b>	<b>19</b>
Potential and Barrier Analysis, Implementation of Education Based on Local Wisdom in SDN Burengan 2 Kediri <b>Alfi Laila, Karimatus Saidah, C. Asri Budiningsih, Kastam Syamsi</b>	<b>26</b>
The Portrait of Democracy and Local Culture in the Land of Kings (Recruitment Study of Elite, Natural Resources Management, Social Community, Conflict, and the Conservation of Local Culture of Hila) <b>Ali Lating</b>	<b>35</b>
Effectiveness of use of Ovitrap to Detect Existence of Aedes aegypti Vector in Ternate City <b>Amalan Tomia, Upik Kesumawati Hadi, Susi Soviana, Elok Budi Retnani</b>	<b>46</b>
Collegial Leadership Model at STKIP Santu Paulus Ruteng <b>Ambros Leonangung Edu dan Petrus Redy Partus Jaya</b>	<b>52</b>
An Analysis on Corruption Indication Effect toward Development in East Indonesia Region (Education, Health, and Road Infrastructure Sectors) <b>Amran Husen</b>	<b>58</b>
Food Composition in The Hull of Sand Cucumber ( <i>Holothuria scabra</i> ) which is Kept at Floating Net Cages <b>Anita Padang and Rochman Subiyanto</b>	<b>68</b>
Criminal Prosecution for Audio Visual Copyright Infringement in Coastal Areas <b>Aries Kurniawan</b>	<b>74</b>
Study On Halfbeak Fish <i>Hemirhamphus</i> sp. Smoking Through Sanitation And Hygiene Approach In Sambiki Baru Village, East Morotai District, North Maluccas Province <b>Asy'ari and Nender Puni</b>	<b>79</b>
Food Safety and its Regulation on School Snacks for Society's Health in Cirebon <b>Ayih Sutarih, Endang Sutrisno &amp; Dewi Rahayu</b>	<b>86</b>
Evaluation Policy On Quality Assurance Systems at Faculty of Teacher Training and Education Mulawarman University Samarinda <b>Azainil, Usfandi Haryaka, Ramadiani</b>	<b>93</b>
A Sustainable Development of The Law Business Friendly Environment	<b>106</b>

**Cindawati**

Analysis of E-Marketing Strategy on Event Organizer (EO) Activity to Increase Motorcycle Sales Revenue in Mataram City <b>Didin Hadi Saputra, Junaidi Akhmad</b>	<i>116</i>
Analysis of Vegetables Farming Hydroponics in PT. Kusuma Agrowisata <b>Ekaria</b>	<i>122</i>
Principles and Norms of the Laws of State Administration in the Making of Government Instruments <b>Enny Agustina</b>	<i>127</i>
Enhancing Students' Awareness on Cross-Cultural Understanding Course Through Lesson Study <b>Erwin Gay</b>	<i>134</i>
Juridis Review of TNI Existence in Indonesia's Authority System Based on 1945 Constitution <b>Evi Purnamawati</b>	<i>146</i>
Analysis of the Role of Financial Technology in Supporting the Financial Inclusion Program <b>Fahrudin Salim</b>	<i>153</i>
Determination of Coral Reef Ecotourism Area at Coastal Area of Ternate Island <b>Faizal Rumagia and Bahar Kaidati</b>	<i>158</i>
The Use of Word Card Media to Improve Early Reading Skill at Preschool <b>Farida Samad and Vrieda Makingkung</b>	<i>169</i>
The Utilization of Banana ( <i>Musa Pariciae</i> ) Peel Silage To Improve Productivity of Small-Framed Goat ( <i>Capra Hircus</i> ) in Worat Worat Village, Sahu District, West Halmahera Regency <b>Fauziah Nurhamiddin, Yusri Sapsuha, and Rahmania Sadek</b>	<i>174</i>
Farmers' Attitude Toward Organic Cocoa Bean Fermentation Practice: Case on the Cocoa Farmers' Group of Buana Mekar, Tabanan District, Bali Province <b>Gede Sedana</b>	<i>179</i>
Women and Family: Law Perspective <b>Hanafi Arief</b>	<i>185</i>
Organoleptic Quality of Beef Meatball Filled With Jackfruit Seed Flour <b>Harapin Hafid, Serlina Sirupang, Rahman, Inderawati, Astriana Napirah and Hasnudi</b>	<i>191</i>
Financial Capability Analysis of South Buru Regency in the Era of Regional Autonomy <b>Hayati Hehamahua</b>	<i>197</i>
Bureaucracy Culture in Public Service in Indonesia <b>Heryani Agustina</b>	<i>203</i>
Implementation of School Based Management at Hindu Education Institution (Case Study at Sma Kertya Wisata Mataram) <b>Gusti Ngurah Ketut Putera</b>	<i>211</i>
Speech Directives in Novel Harmony in Tanya Tanya (?) By Melvy Yendra & Andriyati <b>I Ketut Suar Adnyana and Wadu Suryani</b>	<i>219</i>
The Role of Religious Harmony Forum in Keeping Inter- Religious Harmony Ahead of Local Elections Simultaneously in Bali <b>I Wayan Kotaniartha</b>	<i>225</i>

Effectiveness of CCDP-IFAD Program to Through Fishermen's Incomes of Fish Smoked in Ternate City and The Right Strategy (Case Study fish Smoked Industri Group at Village Faudu, Hiri Island) <b>Ibnu Wahab Laitupa</b>	230
Application of Premium Revenues and Claims Charges Based on PSAK No. 28 at PT. Bosowa Insurance Branch Ternate <b>Irman Mamulati and Djamila Abbas</b>	235
The Indonesia Legal Politics on Mining that Reduced the Environmental Sustainability <b>Jarot Digdo Ismoyo, Supanto, I.G. Ketut Ayu Rachmi H</b>	239
Students' Writing Difficulty in Composing a Descriptive Text <b>La Ode Nggawu</b>	245
Perception of Rice Farmers on The Role of Agriculture Extention Field : (Case Study in Dodaga Village East Wasile District East Halmahera Regency) <b>Linda Umasugi</b>	254
Pasraman as A Media For Establishing A Leader <b>Made Sila</b>	261
The Effect of Organizational Culture to Employee Performance Through the Work Environment in Harbormastership and Authority of Port Class III Tarakan <b>Marisi Manalu and Ana Sri Ekaningsih</b>	267
The Hydraulic Design of Fixed Weir With MDO and MDS Type Energy Damper Using GUI Matlab <b>Marlina Kamis, Yudit Agus Priambodo, Alvisyah Riadi and Sri Dewi Nurlaela</b>	278
An Analysis of Finance of Regional Government of North Halmahera Regency for 2009-2014 Budget Year <b>Muhammad Iqra Harun</b>	285
Accounting Information System Analysis of Micro to Medium Enterprises <b>Mona Permatasari Mokodompit and Sarah Usman</b>	292
Calcium Carbonate (CaCO <sub>3</sub> ) Scale Formation in A Piping System With Laminar Flow With Varied Temperatures and Malic Acid (C <sub>4</sub> H <sub>6</sub> O <sub>5</sub> ) As Additives <b>Muhammad Usamah and Muhammad Rizal</b>	297
Continuum Concept of Motivation Factors and Discipline of Employees to Improve Quality of Service <b>Mukarto Siswoyo and Eka Susilawati</b>	304
The Disciplinary Arrangements to Autism Student in SD Inclusive Alfirdaus Surakarta <b>Mulyadi SK, Minsih, Ratna NP and Imam Mujahid</b>	312
The Prospect of Nutmeg (Myristica Fragrans Houut) Organic Development (Case Study in Ngidiho Village Distric of West Galela, North Halmahera Regency) <b>Munawir Muhammad and Arianto M Neka</b>	317
The Influence of School Culture on The Characters of The Students of Muhammadiyah Junior High School 1 of Ternate City <b>Musa Marengke</b>	327

Determining Uniform Minimum Variance Unbiased Estimator (UMVUE) on Random Variables Using Cramer Rao Lower Bound Theorem <b>Muzakir Hi Sultan</b>	<b>342</b>
The Position of The Law The Verdict KPPU in System Indonesia of The Law <b>Nina Yolanda</b>	<b>349</b>
Sexual Abuse (Study of Child Sexual Abuse in Poleang District Bombana Regency) <b>Nursalam, Darman Manda and Suardi</b>	<b>355</b>
Nyeburin Marriage Under the Balinese Customary Law, Indonesia <b>Putu Dyatmikawati</b>	<b>362</b>
Implementation of Character Education in Forming Self-Assistance on Special Requirements (Case Study at Madania Center Banjar Bumi Sari Denpasar Barat) <b>Putu Ronny AnggaMahendra</b>	<b>370</b>
Empathy to Build Awareness of Online Law <b>Rakhmat Nopliardy and Nurul Listyani</b>	<b>376</b>
The Influence of Service Quality, Tax Sanctions, Compliance Costs and Application of E-Filing Systems To Individual Taxpayer Compliance. (Study Case; Pratama Tax Service Office KPP Ternate) <b>Rheza Pratama and Basrah Machmud</b>	<b>388</b>
Integrability In The Concept Of The Lower Sum $L(P_n, f)$ and Upper Sum $U(P_n, f)$ Whit Test $[(\text{Lim})_{n \rightarrow \infty} \int_a^b ((U(P_n, f) - L(P_n, f)) = 0)]$ <b>Ruslan Laisouw</b>	<b>394</b>
Pre-Test Analysis on Reinforced Concrete Beams with Shear Strengthening using GFRP by Finite Element Method <b>Sary Shandy and Joni Hermanto</b>	<b>400</b>
Collegial Supervision Model at Primary School 4 Menteng Palangka Raya, Central Kalimantan, Indonesia <b>Sanasintani</b>	<b>409</b>
Analysis Service Indicator of Speed Bumps on Toboko Road in Ternate City <b>Santospriadi</b>	<b>416</b>
Profitability Analysis of Rural Banks in Manokwari: a Case of Arfak Indonesia Rural Bank <b>Sarah Usman and Mona Permatasari Mokodompit</b>	<b>419</b>
Individual Assignment Method to Increase Students' Learning Independence in Christian Education Subject of Class VIII-A SMPN-7 Palangka Raya <b>Sarmauli</b>	<b>423</b>
Teacher Communication in Caring Children Age 3-4 Years in Paud in Mataram City <b>Siti Zaenab</b>	<b>435</b>
The influence of flipped model on learning achievement: an analyze of student school engagement <b>Sri Sukasih, Zamzani and Haryanto</b>	<b>442</b>
Extracting Glucose From Tapioca Flour Enzymatically Using Saccaromycess Cereviceae (YEAST) <b>Faida Zuhria, Sudarto M. Abukasim</b>	<b>448</b>

Corporate Social Responsibility by Gender Perspective <b>Sukaris and Jiwangga Hadi Nata</b>	455
Morphemes In The Ternate Malay Language: A Morphology-Semantic Studie <b>Sunaidin Ode Mulae</b>	469
The Influence of Internal Control Effectiveness, Reasonable Compensation, Asymmetric Information, Integrity and Individual Morality on Accounting Fraud Tendency (A Study conducted at the South Halmahera Regency's Regional Working Units (SKPD)) <b>Suriana AR Mahdi, Remiyati Ansar and Nurmala Lanuhu</b>	480
Determinant Plan for Married Adolescent in Maluku Utara 2015 <b>Tati Sumiati</b>	488
The Role of Government in Preserving the Dayak Maanyan Traditional Ceremony in East Barito Regency, Central Kalimantan Province <b>Tresia Kristiana and Effrata</b>	493
Developing Children Story Book Media in English Based on Central Kalimantan Local Culture <b>Tutik Haryani dan Sumiati</b>	498
Review of Ikan Kering Kayu Processing and Canning Systems at PPUPIK Program of Rumah Ikan Faculty of Agriculture Muhammadiyah University of North Maluku <b>Umar Tangke, Aisyah Bafagih, and Ruslan A. Daeng</b>	507
Physicochemical characteristics of alkali treated cottonii (ATC) flour of <i>Kappaphycus alvarezii</i> seaweed from Morotai Island North Maluku <b>Vanessa Natalie Jane Lekahena and Jainudin Saniapon</b>	511
Binary Oppostion of Levi-Strauss in The World's First Kite (Kaghati Roo Kolope) on Community in District of Muna <b>Wa Ode Sifatu, Bahtiar, La Ode M. Aslan, Muh. Abd. Rachman Gege, Siti Rasiah, La Sudu, and Irma Magara</b>	518
Inventory of Plant Moss Species (Bryophyta) Terrestrial In National Park Area Aketajawe Lolobata Central Halmahera North Maluku Province <b>Wirda A. Z. Umagap</b>	525
Generate Synthetic Earthquake Using Etabs and NGA-West2 <b>Yudit Agus Priambodo, Marlina Kamis and Amiruddin Hi Muhammad</b>	533
Campus Intellectual Product Business Development Program (PPUPIK): Utilization of Herbs as Phytobiotic in Broiler Chicken <b>Yusri Sapsuha, Yunus Syafie, Nur Sjafani and Hasriani Ishak</b>	544
Local Wisdom and Conservation Effort of Momoa Bird ( <i>Eulipoa wallacei</i> ) in Galela Coastal Communities, North Halmahera, Indonesia <b>Zeth Patty, Febrina Olivia Akerina, Zakarias Dilago, Ariance Yeane Kastanja and Nonice Manikome</b>	551



Perkumpulan  
ADRI 17<sup>th</sup> INTERNATIONAL CONFERENCE  
AHLI & DOSEN  
REPUBLIK INDONESIA

# Sustainable Competitive Advantage in Finance and Management Information System

Achmad Daengs, GS<sup>1</sup>, Andi Reni<sup>2</sup>, Setiabudhi<sup>3</sup>, Syamsul Hidayat<sup>4</sup>,  
Wahyudi Henky Soeparto<sup>5</sup>

<sup>1</sup>University of 45 Surabaya, East Java, Indonesia,  
Email : bumigora80@gmail.com

<sup>2</sup>University of Hasanudin Makasar, South Sulawesi, Indonesia,  
Email: andirenireni@gmail.com

<sup>3</sup>University of 45 Surabaya, East Java, Indonesia,  
Email: setiabudhi2407@gmail.com

<sup>4</sup>University of Bina Bangsa Banten, Indonesia,  
Email: mastersyah@gmail.com

<sup>5</sup>University of Ciputra Surabaya, East Java Indonesia,  
Email: awahyudi@ciputra.ac.id

**Abstract.** The purposes of this research are to examine the importance of sustainable competitive advantages in finance and management information system. In this case the researchers use several variables consists of organization behavior, strategic marketing, financial, management information system, and competitive advantage. Type of this study is causality using quantitative approach. Sampling in this research are 100 samples. Data collected by distribute questionnaires. Data analysis technique that used is SEM with PLS program. The result of the research is showed that organization behavior, finance and management information system has significant effect on competitive advantage, while strategic marketing has no significant effect on competitive advantage. Beside the analysis result also find that organization behavior has indirect effect on competitive advantage through strategic marketing, finance and SIM.

**Keywords :** *Competitive advantage, financial, management information system*

## 1. Introduction

Competitive advantage is the heart of the company performance in competitive market, and contained about anything that can be done by the company to apply generic strategic (Porter, 1990). Basically, competitive advantage grow from the value that can be created by the company for its customers. This value it can be form of the lower price than competitor's price. The more unique form not only balancing the price, and sort the customers, suppliers, and company into numerous different activities, but has interrelation and as source of this value.

To know how to maintain a competitive strategy, before must know previously the principal concepts of competitive strategy itself. Competitive is vital for the company's success or failure, cause competition determine an activity is necessary for the company to reach the achievement, such as innovation, cohesive culture, or good implementation. Therefore there are two essential thing for the basic selection of competitive strategy, that are :

- i. The attraction of industry for long term profitability and several determining factors.
- ii. Determined Factor in competitive position is relative in an industry.

The attraction of industry or the competition position continuously changes, so its nature is dynamical, then required an analysis framework to understanding of industry and competition participants, as well as formulate thoroughly competitive strategy. Competitive strategy use a frame that be able actually create and maintain competitive strategy in their industry, where the purpose is to bridging strategy with its implementation, and not treating both subjects separately. Emphasizes

Competitive Strategy is an industry structure analysis and competitor in diverse industry domain, although is also contain many implication for competition advantage. Fundamental determination factor of company profitability is the attraction of industry, where the final competitive strategy is face and change the rule compatible with company's interest.

## **2. Environment Observation**

### **2.1 Internal Factors**

Internal environment observation conducted by the company to know the strengths and weakness belong to company in confront multiple business environment condition. Then Kotler & Keller (2008a:67) suggest at least four factors that must be considered in internal environment analysis, are :

1. Marketing
2. Financial
3. Manufacture
4. Organization

By make observations on those internal environment factors, the company will able to stipulate policies and operational strategy suitable with the strength and weakness belong to the company.

### **2.2 External Factors**

Marketing opportunities is need area or demand potential of the buyer where company able to work profitable (Kotler and Keller, 2008a:64). There are three main sources of market opportunities, that is (1) supply certain thing when supply decrease; (2) supply existing product or services in new ways or more excellence. There are some ways to reveal product or service improvement possibilities by asked for suggestion from consumer (problem detection method); asked consumer to describes one ideal version of product or service (ideal method); and asked consumer to make their step pattern in get, use, and throw up the product ( consumer chain method). (3) often make some new thing of product or service.

Beside opportunity, some development in external environment is a threat. Environment threat is challenge cause the tendency or disadvantage development that will be reduce sales and profit if there is not performed defensive marketing action (Kotler and Keller, 2008a:65). When the management is success to identify threats and opportunities faced by specified business unit, we could describes the attraction of those business unit wholeness.

## **3. Formulation of Competitive Advantage Strategy**

Michael Porter (1990 in Hunger and Wheelen, 2003: 245) offers two "generic" competitive strategies to outperform other companies in a particular industry: low cost and differentiation, also known as Porter's generic strategy. Low cost is the ability of a company or a business unit to design, manufacture, and market a product in proportion to a more efficient way than its competitors. Differentiation, on the other hand, is the ability to provide unique and superior value to the buyer in terms of quality, special features, or after sales service. These strategies are called generic because companies of any type and size - even nonprofit organizations - can use them.

### **3.1 Success in Compete**

According to Anatan (2008: 30), competence in functional areas is the ability and performance of functional areas that support the achievement of corporate strategic goals, and play a role in obtaining, sustaining, or improving competitive advantage. However, the competencies of the company should not be easily imitated by competitors, and sustain the achievement of sustainable competitive advantage (Schoemaker, 1992).

And one way companies or organizations can try to create a lasting competitive advantage is through total quality management (TQM).

### **3.2 Quality Competitiveness**

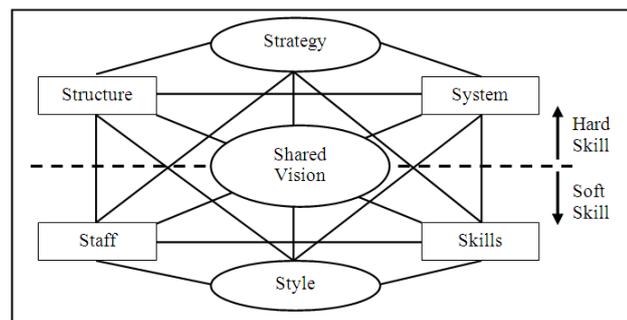
Related to that, Porter (1990) states that a quality product, at least determined by eight factors: Performance, Feature, Reliability, Conformance, Durability, Service Ability, Aesthetics, and Perceived Quality. Good performance seen from the appearance of these products compared with

other similar products. Reliability intends to product's reliability, while conformance is more intent on the good production process to produce the product. Durability tends to be meaningful in the durability of a product used. Service ability is a quality based on customer satisfaction. This factor measures how far a product can give satisfaction to the end users. Aesthetics is more meaningful to the value of art and product design, including colors, and more. While Perceived Quality is something that most expected is a product that has received wide recognition from the community as a quality product (Tanjung, 1998). As for the service quality dimension, consisting of: timeliness - the performance promised at the time, honor - something done happily, consistency - gives customers a different experience every time, convenience - easy access to customers, completeness - needed, and thoroughness - do it right every time.

### 3.3 Strategy Implementation

#### 3.3.1 7-S McKinsey

Strategy implementation is an "action oriented" that creates something to happen. Implementing a strategy is the task of changing the current state, motivating human resources, developing core competencies, improving capabilities and processes, creating an organizational culture, reaching targets based on existing potential, and striving to cope with resistance to change (Reksohadiprojo, 2003: 69). In order for the strategy to work effectively, 7-S McKinsey provides an overview of the necessity of mutual corresponding between elements in the organization as follows:



Source: Jauch and Glueck (1998: 327)

**Figure 1.** McKinsey's 7-S Framework

1. Strategy.
2. Structure.
3. System.
4. Style.
5. Staff.
6. Shared values (or superordinate goals).
7. Expertise.

### 3.4 Total Quality Management (TQM)

Total Quality Management (TQM) is derived from the word "Total" which means whole or integrated, "Quality" means quality that is everything that is able to meet customer want or needs (meeting the needs of customers), Gaspersz (2008: 4). In ISO 8402 (Quality Vocabulary), quality is defined as the totality of the characteristics of a product that supports its ability to satisfy specified or specified requirements. Quality is often interpreted as customer satisfaction or conformation to the requirements, and management is defined as the process of planning, organizing, staffing, leading and controlling all activities within the organization.

Looking at various definitions of Quality Management above, particularly emphasis is on the quality that is defined by doing everything well from the beginning with the aim to meet customer satisfaction.

### ***3.5 Evaluation and Control***

To ensure that Company is achieving what it has set to achieve. Control process compares performance with desired results and provides the necessary feedback for management to evaluate the results obtained and take necessary corrective actions, Camillus (1986) in Hunger and Wheelen (2003: 384). The process is as follows:

## **4. Literature Review**

In banking practice, there are 3 groups activities that need to be managed professionally, they are fund raising, lending, and other bank services. These three service groups must be managed simultaneously, as each group is related to each other. Thus, if one group is not professionally managed it will result in losses for the bank itself, especially the funding and lending groups. In this regard, the role of finance management in the management of resources and the use of funds will be able to make supporters in creating competitive advantage.

### ***4.1 Understanding the Source and Use of Bank Funds***

The balance sheet items on the side of the liabilities are called the source of funds while the balance sheet items on the asset side are expressed as the use of funds.

Sources of funds from their origins can be classified as sources of funds from owners such as share capital, stock premiums, retained earnings and profit or loss of the current year, while other funds are expressed as debt that can be classified as public funds, borrowing funds and other funds.

Community funds are funds obtained from the community, in the sense of community as individuals, corporations, governments, households, cooperatives, foundations, and others both in rupiah currency and in foreign currency, Rivai. et al (2007: 413). The fund consists of demand deposits, savings deposits and time deposits, these three types of funds, the most expensive funds are demand deposits, followed by savings and finally time deposits. Deposit time can be in the form of time deposits, certificates of deposit, and Deposit on call.

### ***4.2 The Importance of Bank Fund Management***

As an intermediary finance institution whose main function is to transfer funds from the surplus unit of funds to the deficit unit of funds by not directly, then this condition always creates an ongoing conflict from time to time. These conflicts are the risks that may arise from any activity either in fund raising or in the use of funds. In the collection and use of funds the bank must always maintain the security of its liquidity on the one hand and on the other must be able to generate maximum profitability level. Therefore banks should always be prudent (especially cautious) in establishing sound funding structures in the sense; how the banks get loans from other depositors and creditors as needed, and integrate the use of these funding sources so as to ensure the liquidity and profitability of the bank (the core of fund management) (Rivai et al 2007: 406).

### ***4.3 Management Information System***

MIS is not a new thing. The scope of the MIS is actually contained in its three word formers, namely "system", "information", and "management" (Nidhom et al., 2009).

From the above understanding, it can be deduced that MIS is a system designed to provide information to support decision making on management activities within an organization.

### ***4.4 Strategic Planning of Information Resources***

To have capability in facing the interbank business competition, development of the right Information Technology to support the Bank's operations in accordance with the established strategy becomes very important. As for the things that need to be considered and become a consideration to move into the future is (Tjokro, 2008):

1. The ease and convenience of conducting banking transactions is an important factor that will be considered by the customer in determining which bank will be selected for its finance affairs.

2. Information Technology can support excellent services to customers, maintain customer loyalty (CRM system) and minimize finance risk, so strategic choice to meet the needs of technology in-house or outsourcing must be addressed by top management in order to obtain IT that fits the optimal cost.
3. Inter-bank strategic cooperation can be created by connecting various services and products electronically through the interface between the banking system owned by each Bank.
4. The existence of Internet Banking and Mobile Banking will change the way of the community conducts in banking transactions, therefore it is necessary to prepare both business and technology side and timing considerations to launch into the market of both future features.

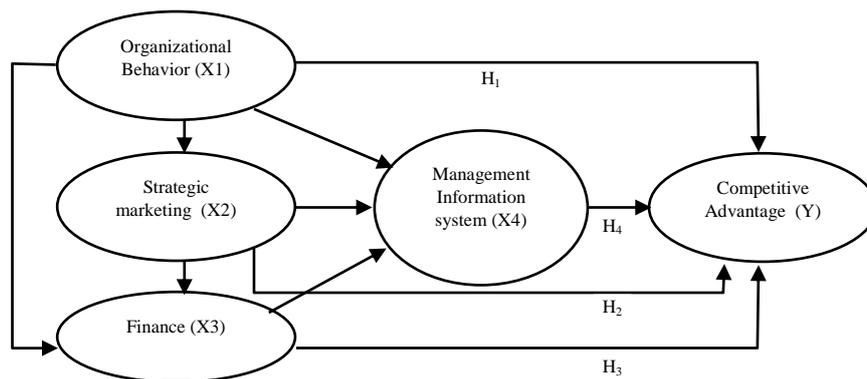
Finally, it can be said that in the future the business success of a Bank is none other than the ability of Information Technology itself and to win the competition between Banks, there are two alternatives to choose, which is to be the cheapest or the innovate. In order to become the cheapest required economies of scale in the form of a large customer base with the support of intensive IT skills to serve it. Meanwhile, if the Bank chooses to innovate in its products and services, it is necessary that creative human resources can serve with a high level of service and innovative, this option will be appropriate on Banks that rely on a particular target market.

#### 4.5 Decision Support System (DSS)

To facilitate the manager in determining troubleshooting steps. Herbert A. Simon, Nobel-winning management expert from Carnegie-Mellon University, in his book *Models of Discovery* (1977), sets out a method for clarifying decisions. Simon believes that the decision is in a continuum with a programmed decision at one end and non-programmed decision on the other. Where, the type of programmed decision is repetitive and routine, up to the limit until a procedure must have been made to handle it so that the decision does not need to be treated de novo (as something new happens every time). While non-programmed decisions are new, unstructured, and seldom consistent (McLeod and Schell, 2007: 293).

### 5. Conceptual framework

Based on the basic theory and empirical studies mentioned above, then in this study selected variables of organizational behavior, strategic marketing, finance and management information systems as independent variables and competitive advantage as the dependent variable.



**Figure 2.** Conceptual Research Framework

In this study will be studied about the effects of organizational behavior, strategic marketing, finance and management information system to competitive advantage. The explanation of each variables are as follows:

1. The first variable (X1) is an Organizational Behavior. This variable is related to the organizational culture reflected in human resource activities in providing services and completing the work that is responsible, and independence in taking various decisions in accordance with their authority.

2. The second variable (X2) is strategic marketing. This variable is related to the company's ability to perform a superior marketing strategy with oriented to the customer both in terms of service quality (service quality), relationship with customers and branding offered.
3. The third variable (X3) is Finance. This variable is related to the company's ability to control liquidity in supporting the smooth operation, the use of funds in supporting the expected income and capital in relation to support developing ability for the company.
4. The fourth variable (X4) is Management Information System. This variable is related to the company's ability to provide customer information for marketing, sales and service for the customer.
5. The fifth variable (Y) is the Competitive Advantage. This variable is directed to the performance of a company based on excellence with the standard of Total Quality Management starting from the process of environmental analysis, strategy formulation, strategy implementation, evaluation and control.

The variables described above, have a close relationship and affect each other between one variable with another variable.

### 5.1 Hypothesis

Based on the results of previous research and theoretical framework related to problem formulation, research objectives, and conceptual framework of research, the hypothesis that will be proposed in this study are as follows:

- Hypothesis 1 (H1) : There is a direct effect of organizational behavior on competitive advantage.  
Hypothesis 2 (H2) : There is a direct effect of strategic marketing on competitive advantage.  
Hypothesis 3 (H3) : There is a direct finance effect on competitive advantage.  
Hypothesis 4 (H4) : There is a direct effect of management information systems on competitive advantage.  
Hypothesis 5 (H5) : There is an indirect effect of organizational behavior through strategic marketing and management information systems to competitive advantage.  
Hypothesis 6 (H6) : There is an indirect effect of organizational behavior through strategic and finance marketing to competitive advantage.  
Hypothesis 7 (H7) : There is an indirect effect of organizational behavior through strategic marketing, finance and management information systems to competitive advantage.  
Hypothesis 8 (H8) : There is an indirect effect of organizational behavior through management information systems on competitive advantage.  
Hypothesis 9 (H9) : There is an indirect effect of organizational behavior through finance and management information systems on competitive advantage.  
Hypothesis 10 (H10) : There is an indirect effect of organizational behavior through finance to competitive advantage.

## 6. Research Methodology

### 6.1 Types of R

This study uses a type of causality research is research that shows the direction of the relationship between independent variables with dependent variables, in addition to measuring the strength of its relationship (Kuncoro, 2003: 10). This research uses quantitative approach, that is the method using a number of samples and numerical data or a number (Sugiyono, 2014: 7).

### 6.2. The result of the research

**Table.** Outer Model Quality Criteria

Latent	AVE	Composite Reliability	Cronbachs Alpha
<b>KCompetitive</b>	0.579	0.871	0.814
<b>Financial</b>	0.656	0.849	0.728
<b>POrganization</b>	0.517	0.881	0.841

<b>PStrategic</b>	0.746	0.855	0.660
<b>SIM</b>	0.715	0.883	0.801
<b>Criteria</b>	> 0.5	> 0.7	> 0.6

## 6.2. Inner Model (Structural Model)

The analysis of suitability level of the constructed structural model shows the conclusion that the overall model has been "Relevant" to explain variables studied and the effect on each variable. The calculation of the value of Q2 in obtaining the value of 0,981 or already exceeds the critical limit of 0,5 thus the structural model has been declared suitable and appropriate.

There are 4 endogenous variables in the inner model studied, i.e. Strategic, Financial, SIM and Competitor. In the equation model with endogenic PS the strategic value of R2 reaches 0,449. In Equation Finance model R Square value equal to 0,523. The third equation model with endogen SIM R Square value reaches 0,703 while for endogen KCompetitive R Square value reaches 0,751. This means that Strategic Marketing can be explained by organizational behavior reaches 44.9%, while finance variable can be explained by two predictor variables of organizational behavior and strategic marketing reach 52.3%. In the endogenous model of MIS, the ability of predictor variables: POrganization, Pstrategic and Finance in explaining the variable SIM reach 70,3% while for the competitiveness model explained directly by the organization behavior, MIS and Finance of 75.1%.

## 6.3. Hypothesis Test Results

### 6.3.1 Hypothesis Test 1 (H1)

The direct effect of Organizational Behavior on Competitive Advantage reaches 0,358 which means any increase in organizational behavior will be followed by increasing competitive advantage. The result of the test with t-statistic shows the direct effect of POrganization to KCompetitive in obtaining t-value of 4.975 and has exceeded the critical limit of rejection of H0 by 2,008 so that H0 is rejected.

### 6.3.2 Hypothesis 2 (H2)

The second hypothesis is proposed that there is no direct effect of strategic marketing to competitive advantage. The result of path coefficient analysis between PStrategic with KCompetitive get 0,006 value which mean although there is positive influence to KCompetitive but the effect is very low. The t-statistic test performed got t-value of 0,934 which means still below t critical 2,008 so that H0 is accepted.

### 6.3.4 Hypothesis 3 (H3)

The third hypothesis of research suggests that there is a direct finance effect on competitive advantage. Result of PLS analysis direct effect between finance variable to competitive advantage is expressed with coefficient value of lane equal to 0,191.

### 6.3.5 Hypothesis 4 (H4)

The fourth hypothesis states that there is a direct effect of management information systems on competitive advantage. This hypothesis is proved where the test results of the statistical t-value show a value of 4,455 well above the critical limit of receiving H0.

### 6.3.4 Hypothesis 5 (H5)

The fifth hypothesis stating that there is an indirect effect of organizational behavior through strategic marketing and management information systems to competitive advantage is only partially provable. The indirect effect of organizational behavior on competitive advantage is not proven, this is because the direct influence of strategic marketing on the MIS and on the competitive advantage is not significant.

### 6.3.5 Hypothesis 6 (H6)

In the sixth hypothesis test is the presence or absence of indirect effect of organizational behavior through strategic and finance marketing to competitive advantage concluded proven. The path of direct influence between Organizational Behavior on Strategic Marketing, Strategic Marketing of Finance and Finance of Competitive Advantage is a path with significant influence.

### *6.3.6 Hypothesis 7 (H7)*

The seventh hypothesis stating that there is an indirect effect of organizational behavior through strategic marketing, finance and management information systems on competitive advantage can also be proven. T-Test count on the path of organizational behavior toward strategic marketing, Strategic Marketing to Finance, Finance to SIM and SIM to competitive advantage is a proven path with significant path coefficient.

### *6.3.7 Hypothesis 8 (H8)*

Organizational behavior also has an indirect influence on competitive advantage through SIM variables. The static t test on the path coefficient between POrganization of SIM and SIM against KCompetitive proved to have t count above 2,008.

### *6.3.8 Hypothesis 9 (H9)*

The ninth hypothesis of any indirect effect of organizational behavior through finance and management information systems on competitive advantage can also be proven. Statistic t-test on the first line is the behavior of the organization to the finance obtained t-value of 9,410, while the second line between the two through finance to the SIM obtained statistical t value of 3,656 and on the third track of the SIM against the advantage compete with t statistics of 4.455,

### *6.3.9 Hypothesis 10 (H10)*

The tenth hypothesis which states that there is an indirect influence of organizational behavior through finance to competitive advantage is also evident. The result of the statistical t test on the skipped path shows a significant conclusion. The value of t test result on the first path is the behavior of the organization to the finance obtained value of 9,410 whereas the second line of finance to competitive advantage also proved significant with t count 2.702.

## **7. Discussion**

The results of the analysis indicate that there is a direct effect of organizational behavior on competitive advantage, which proves that the existence of good organizational behavior will be able to give impact on competitive advantage. In increasing the competitive advantage is also very important to pay attention to finance factors, as well as Porter (1990) which explains that one of the determinants of competitive advantage is a finance factor in which finance has an important role in a business. Competitive advantage is the heart of corporate performance in a competitive market, and contains the ways in which a company can apply its generic strategy (Porter, 1990). In this case, competitive advantage can also be influenced by management information system factors that prove that management information system has a role in supporting operational business activities, support management in decision making, and support the competitive advantage of organizational strategy. Strategic marketing, however, does not contribute significantly to the competitive advantage.

Based on the analysis result also seen that there is indirect influence of organizational behavior toward competitive advantage through management information system, whereas indirect influence of organizational behavior toward competitive advantage through strategic marketing is not proven. This indicates that the existence of good organizational behavior supported by adequate information management system will be able to increase competitive advantage. Porter (1990) defines competitive advantage as a corporate benefit strategy that collaborates for more effective competencies in the market place, allowing the company to dominate both the old and new markets.

## **8. Conclusions and Recommendations**

Based on the results of the analysis and discussion that have been described, then the conclusions in this study can be explained as follows:

1. Organizational behavior has a direct influence on competitive advantage.
2. Strategic marketing has no significant effect on competitive advantage.
3. Finance has a direct influence on competitive advantage.
4. Management information systems have a direct influence on competitive advantage.

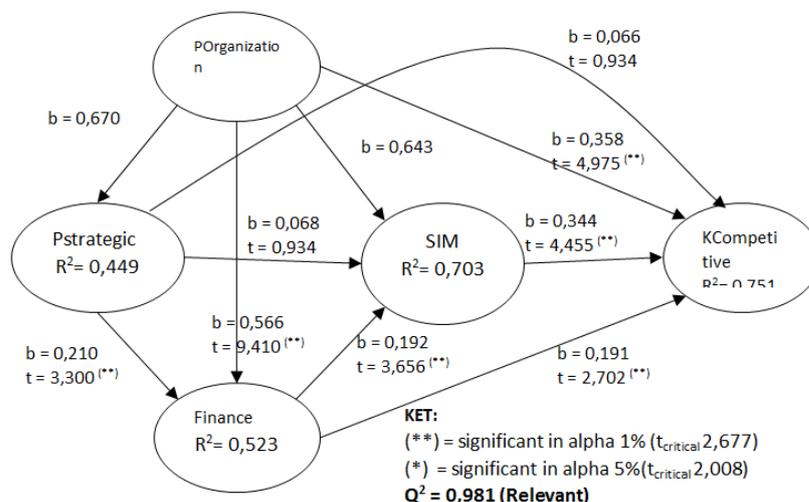
5. There is an indirect effect of organizational behavior on competitive advantage through management information systems, while the indirect influence of organizational behavior on competitive advantage through strategic marketing is not proven.
6. There is an indirect effect of organizational behavior through strategic and finance marketing to competitive advantage.
7. There is an indirect effect of organizational behavior through strategic marketing, finance and management information systems to competitive advantage.
8. Organizational behavior has an indirect influence on competitive advantage through management information system variables.
9. There is an indirect effect of organizational behavior on competitive advantage through finance variables and management information systems.
10. Organizational behavior has an indirect effect on competitive advantage through finance variables.

## References

- [1]. Ahmar, Anshari Saleh, Kurniasih, Nuning, Irawan, Dasapta, et.all, 2018. Lecture's Understanding On Indexing Database of SINTA, DOAJ, Google Scholar, Scopus, and Web Of Science : A Study of Indonesian. IOP Conference CONF. Series: Journal of Physics 954 Page 1-17.
- [2]. Anatan, Lina. 2008. *Service Excellence Competing Through Competitiveness*. Bandung: Alfabeta
- [3]. Andari, Eni. 1998. Meraih Keunggulan melalui Pengintegrasian Perencanaan Sumber Daya Manusia dan Perencanaan Strategik. *Jurnal Siasat Bisnis*. Edisi Th. III Vol. 6 Juni 1998 hal:43-53.
- [4]. Arsari, Andri. 2008. Analisa Kredit 6C. [On-line] tersedia-<http://arsasi.wordpress.com/2008/09/21/analisa-kredit-6c/>
- [5]. Budiarto, Wasis. 2002. *Analisis Faktor-Faktor yang membentuk Kualitas Pelayanan dan Pengaruhnya terhadap Kinerja Non Keuangan serta Keuangan Rumah Sakit Umum Pusat di Indonesia*. Disertasi, Universitas Airlangga Surabaya.
- [6]. Bulik, Beth Snyder dan Mary Beth Sullivan. 2009. Bank marketing fails to reassure wary and befuddled customers. [On-line] tersedia- [www.capitalperform.com](http://www.capitalperform.com)
- [7]. Bruque-Cámara, Sebastian, José Moyano-Fuentes, M. Jesús Hernández-Ortiz, Alfonso Vargas-Sánchez . 2003. Information Technology and Competitive Advantage. The Role of the Ownership Structure. *IT and Competitive Advantage*.
- [8]. Cane Sheila. 1998. *Kaizen Strategies for Winning Through People*. Batam Center. Interaksara
- [9]. Cooper Donald R / Schindler Pamela S. 2006. *Metode Riset Bisnis*. Edisi 9, Volume1.Jakarta: PTMedia Global Edukasi
- [10]. Cooper Donald R / Schindler Pamela S. 2006. *Metode Riset Bisnis*. Edisi 9, Volume2.Jakarta: PT Media Global Edukasi
- [11]. Dessler, Garry. 1997. *Manajemen Sumber Daya Manusia*. Jakarta: Prehallindo
- [12]. Dharmayanti, Diah. 2006. Analisis Dampak *Service Performance* dan Kepuasan sebagai *Moderating Variable* terhadap Loyalitas Nasabah (Studi pada Nasabah Tabungan Bank Mandiri Cabang Surabaya). *JURNAL MANAJEMEN PEMASARAN*, VOL. 1, NO. 1, APRIL 2006:35-43
- [13]. Djuwita, Tita Meiriana. 2008. Komitmen Organisasi. *Forum Manajemen Strategis dan Pengembangan SDM*, Bandung.
- [14]. Ellitan. Lena. 2002. Praktik-Praktik Pengelolaan Sumber Daya Manusia dan Keunggulan Kompetitif Berkelanjutan. *Jurnal Manajemen & Kewirausahaan*, Vol. 4, No. 2, September 2002: 65 - 76
- [15]. Ferdinand, Augustin. 2002. *Structural Equation Modeling Dalam Penelitian Manajemen*. Aplikasi Model - Model rumit dalam penelitian untuk tesis magister dan Doktor. Semarang. Badan Penerbit Universitas Diponegoro.
- [16]. Ferdinand, Augustin. 2006. *Structural Equation Modeling Dalam Penelitian Manajemen*. Semarang. Badan Penerbit Universitas Diponegoro.
- [17]. Ferrinadewi Erna. 2008. *Merek & Psikologi Konsumen Implikasi pada Strategi Pemasaran*. Yogyakarta. Graha Ilmu.

- [18]. Gaspersz, Vincent. 2008. *Total Quality Management*. Jakarta: Gramedia Pustaka Utama.
- [19]. Gibson, James L., John. M. Ivancevich, dan James H. Donnelly, JR. 1996. *Organisasi*. Edisi 8, Jilid 1. Jakarta: Binarupa Aksara.
- [20]. Gibson, James L., John. M. Ivancevich, dan James H. Donnelly, JR. 1997. *Organisasi*. Edisi 8, Jilid 2. Jakarta: Binarupa Aksara.
- [21]. Gordman Robert. 2007. *The Must-Have Customer*. Jakarta. PT Gramedia Pustaka Utama.
- [22]. Guimaraes, Tor, Sandy D Staples, dan James D Mckeen. 2003. Empirically Testing Some Main-User Related Factors for System Development Quality. *The Quality Management Journal*, *abi/inform Global*, hal 39-55.
- [23]. Hadi, Sutrisno. 1990. *Analisis Butir Untuk Instrumen*. Yogyakarta. Andy Offset.
- [24]. Hampton, R, Dubinsky, AJ, dan Skinner, SJ. 1986, A Model of Sales Supervisor Leadership Behavior and Retail Salespeople's Job-Related Outcomes, *Journal of the Academy Marketing Science*, vol. 14 hlm. 33-34.
- [25]. Hunger, J. David dan Thomas L. Wheelen. 2003. *Manajemen Strategis*. Edisi Lima. Yogyakarta: Andi.
- [26]. Indriartoro dan Bambang Supomo. 1999. *Metode Penelitian Bisnis Untuk Humaniora dan Manajemen*. Edisi Pertama. Yogyakarta. Gajah Mada University Press.
- [27]. Istijanto. 2005. *Riset Sumber Daya Manusia Cara Praktis Mendeteksi Dimensi-Dimensi Kerja Karyawan*. Jakarta: Gramedia Pustaka Utama.
- [28]. Jauch, Lawrence R. dan William F. Glueck. 1998. *Manajemen Strategis dan Kebijakan Perusahaan*. Edisi Ketiga. Jakarta: Erlangga
- [29]. Junaedi, M.F. Shellyana dan Anna Purwaningsih. 2008. Pengaruh Otomatisasi Sistem Informasi dan Penguasaan Teknologi terhadap Pemberdayaan SDM dan Kesesuaian Tugas-Teknologi sebagai Pemoderasi. *The 2nd National Conference UKWMS*. Surabaya, 6 September 2008
- [30]. Kaihatu, Thomas, S, Daeng GS, Achmad, ATL Indrianto, 2015. *Manajemen Komplain*, Penerbit Andi Yogyakarta.
- [31]. Kasmir. 2000. *Manajemen Perbankan*. Jakarta: Raja Grafindo Persada.
- [32]. Kim, W. Chan, Renee Mauborgne. 2006. *Blue Ocean Strategy*. Jakarta: Serambi IlmuSemesta.
- [33]. Kodrat, David Sukardi. 2009. *Manajemen Strategi Membangun Keunggulan Bersaing Era Global di Indonesia Berbasis Kewirausahaan*. Yogyakarta. Graha Ilmu
- [34]. Kotler, Philip dan Kevin Lane Keller. 2008a. *Manajemen Pemasaran*. Edisi Kedua Belas, Jilid 1. Jakarta: Indeks.
- [35]. Kotler, Philip dan Kevin Lane Keller. 2008b. *Manajemen Pemasaran*. Edisi Kedua Belas, Jilid 2. Jakarta: Indeks.
- [36]. Kroenke, David. 1989. *Management Information Systems*. Second Edition. New York: McGraw-Hill

## Appendices



# Voting Behavior on PILKADA Kabupaten Sula 2015

Agusmawanda<sup>1</sup>

<sup>1</sup> Political science Department Muhammadiyah University North Maluku  
E-mail: agusmawanda79@gmail.com., agusmawanda@ummu.ac.id

**Abstract.** The research of factors that related to the voting behavior on PILKADA (local election) Kabupaten Sula 2015 is interesting for two reasons; firstly, because of the tradition of disputes election passed from election to election, and secondly because sociological factors such as religion and ethnicity are not determinant of victories the candidate (Hendrata Thes) as minorities in religious and ethnic on Sula Regency. In this research using quantitative method through survey with structured questionnaire with 200 respondents, which is proportionally distributed in Sulabesi Island and Mangoli Island as island in Kabupaten Sula. Furthermore, the data are used descriptive and correlation statistic analysis. The research finding that the rational-choice determine of voting behavior such as party's and candidate's program on PILKADA Kabupaten Sula 2015.

**Key words:** *Voting Behavior- Pilkada-Rasional Voters*

## 1. Introduction

The Sula 2015 Regional Election or Pilkada, which was won by Hendrata Thes, has enough attention from the public and researchers in the field of voting behavior, because of an unusual event in Indonesian political culture where minorities are the winners. Hendrata excels from the other candidates between Rusmin Latara and Safi Fauwah. Safi and Rusmin are representing mayoritas in Sula regency using both religious and ethnicity based. During this political culture in North Maluku, sociological factors are always dominant in determining the behavior of voters, but not applicable in Pilkada Sula 2015 due to minority Hendrata and be a winner. Therefore in this paper, will answer how the voting behavior and what factors correlate with the voting behavior of sula's voter in 2015.

There are three approach models that are often used in voting behavior studies. *First* sociological model (also known structurally), *second* psychological model and *third* rational voter model (G.Niemi et.al 1984). These three approaches were born as a reaction to the previous approach, or even as an anti-thesis of the approach, but the these approaches are complementary to each other.

The sociological model is a well known early approach in the study of voting behavior, it's assumed that voting behavior determined by sociological character, religion, ethnicity, social status and so on. But scientists in this approach often place particular emphasis on certain aspects, such as Seymour Martin Lipset and Stein Rokka in viewing voter behavior with more emphasis on social identity, such as work and social status as influential factors (Lipset at Norris 2004).

The psychological model assumed that voter behavior is determined by emotional closeness, for example in the form of support for a Party Identification (PI) and candidate based on emotional. According to this approach, social class, ethnicity, religion in sociological model, does not describe social group because too abstract. So that the identification of voters of the party is more due to "feeling" or emotional connection (Zuckerman, 2005). This approach is the first model used by the Michigan Survey Research Center in 1952 in election elucidation (G Niemi 1984).

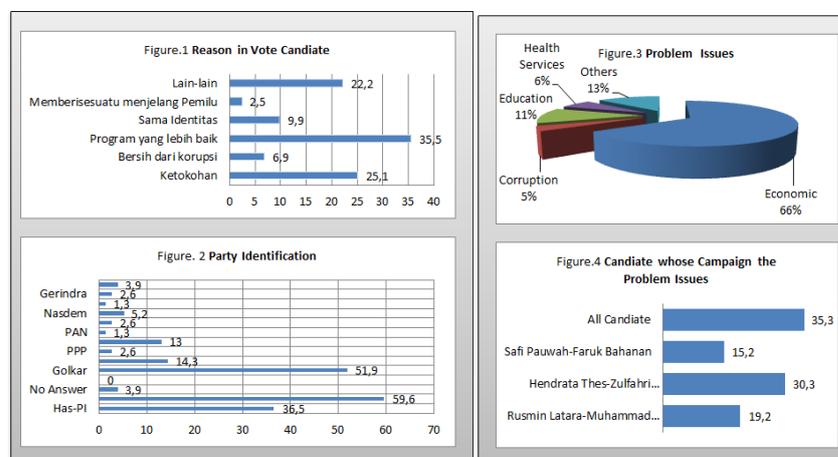
The Rational Choice Model is highly responsive to dynamic changes such as political-economic change (Mujani et al. 2011), so that voters in determining choice will seek information as a counterweight to obtain the benefit of existing circumstances.

## 2. Rational Voters

Based on argument in way of voting in Pilkada Sula 2015, the electoral is rational voters category because only 12.1% chose based on non-rational aspects; 2.5% of which voted based on gift (money or goods), and 9.9 % based on similarity identity due to religion or ethnicity. Thus the victory of Hendrata Thes in the elections of Sula Regency in 2015 is related to rational voters.

Base on Figure.1, 35.5% voters vote candidates for having a better work programs. Although campaign in regional there are almost not different programs between one candidate with another, but in this case the voters saw the achievements in the previous period. Safi Pauwah who has a vote of 37.43% which is relatively close to Hendrata 37.78% is associated as part of the low level of previous achievement of government period of (2010-2015), where he is as vice of Ahmad Hidayat Mus that was associated with corruption issues. While on the other hand, Hendrata who worked on completing infrastructure projects from the Sula's government was associated as his success. Furthermore, this capital is captured by the success team as a real program or work done by Hendrata.

Aspect characteristic is one of the main reasons for determining of the voting, as 25.1% of voters vote based on the candidate's character. Although Hendrata is a sociologically minority in Sula as a Christian and Chinese, but his personality exceeds the other candidates. Prior to being a politician, Hendrata had interacted with Sula society in trade transactions in the form of the sale of seeds such as Copra and Cloves. In the interaction, the impression of cohesion is embedded with trust and often helps farmers in their needs.



Another factor relate to rational voters are problem issues that necessary for electoral perceptions (figure.3), based on date, that economic is the most important problem for electoral in Sula, equal to 66%, followed by education problem equal to 11%. This is politically meaningful to rational voters, that those who campaign for economic and educational issues will potentially have good electability. Further more public perception, that Hendrata is candidate who campaigned those issues; 30.3% said the Hendrata couple who campaigned on the issue, followed by Rusmin Latara couple 19.2% and Safi Fauwah 15.5%.

### 3. Anomaly Party Identification

Party identification theoretically has consequences for the support of the party, but not so in the Pilkada Sula 2015. Those who identified themselves as having a party identification, 51.9%, and said that they were closed to the Golkar Party, 13% of the PDIP and 14, 3% Democrats (figure.2).

If the analysis is Party Identification (PI), Rusmin Latara and Saleh Marasabessy who will be in second place not to Safi Pauwah and Sulfahri Abdullah, because they are carried by PDIP and PAN with the level of PI 13% and 1.5%, much more lower than the Safi Pauwah which was supported by Gerindra and PPP with a total proximity of 5.2%. This phenomenon I refer to as "anomalies of party identification" because one side feel close to a particular party, but on the other hand does not choose a party that is considered close.

From a number of variables, there are two variables that are related to the voting behavior in the Pilkada Sula 2015. These two variables are education variables with *sig.028 \** and the variable party identification with, *sig.000 \*\**.

<b>Correlations</b>		
Education	Pearson Correlation	.155*
	Sig. (2-tailed)	.028
	N	203
Party Identification	Pearson Correlation	-.417**
	Sig. (2-tailed)	.000
	N	77

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Educational variables have a significant correlation to voting behavior, because the level of education can affect the critical point of a voter. At Pilkada Sula 2015, those who made the choice based on the candidate program amounted to 35.5%. This means that those who can assemble program differences between candidates are critical, and the potential is in voters who have better education.

Further variables are party identification, voters who feel closed or associated themselves with a particular party will have a tendency to vote for the party. The average Hendrata voter is to have a close relationship with the party both because of the party management as well as because of the family background which hereditary selects the party.

#### **4. Conclusion**

Based on data voting behavior in sula's elections 2015, those who are rational voter about 35.5% said that choosing candidate based on their program. Furthermore, based on correlation test results, the variables of education and party identification also determine for rational voters with their respective significance; .028 \* and .000 \*\*.

#### **References**

- [1]. Alan S. Zuckerman (Ed.),2005. *The Political Logic: Personal Networks As Contexts for Political Behavior* Philadelphia, Temple University Press,
- [2]. Muhani Saiful, Willam Liddle, Kuskrido Ambardi, 2011 *Kuasa Rakyat: Analisis Tentang Perilaku Memilih dalam pemilihan legislatif dan president Indonesia Pasca Orde-Baru*
- [3]. Pippa Norris.2004, *Electoral Engineering: Voting Rule And Political Behavior* New York: Cambridge University Press.
- [4]. Richard G Niemi, Herbert F Weisberg. 1984, *Controversies In Voting Behavior* Washington DC: Congressional Quarterly Inc.,.

# The Influence Of Internal And External Factors Toward The Small Scale Business Entrepreneurs' Perception Of Green Manufacturing (Case Study On Food Products In Semarang City)

Agustine Eva Maria Soekesi

Management Department, Faculty of Economics and Business, Soegijapranata Catholic University

**Abstract.** Recently, various media informed many food products containing harmful additives relatively. This condition makes the public in general to be careful in choosing and buying food products. Healthy food products and processed by using green manufacturing principles began to be an option for consumers who are aware of a healthy lifestyle. Organic foods and healthy foods are a product processed using green manufacturing principles. It leads an increasing market potential of green manufacturing-based food products. This is caused by the increasing number of people who realize the importance of healthy lifestyle For business that produce green manufacturing-based food products, this condition provides an opportunity to increase production capacity. Even the survey results of 35 small scale business entrepreneurs in Semarang city that produce food products by applying the concept of green manufacturing, showed an increase in profit progressively. It caused by the increasing amount of production following market demand, it will decrease the total cost per unit of product. This paper presents a more in-depth study of the survey by analyzing the influence of internal and external factors on the perception of food entrepreneurs about green manufacturing. Internal factor is measured using five indicators: locus of control achievement, risk taker, personal values, education, and experience. External factor is measured by three indicators: role models, community network, and family support. While small scale food products entrepreneurs' perception of green manufacturing is measured by using three indicators: input, process, and output

**Keywords:** *internal factor, external factor, green manufacturing, food products, small scale entrepreneurs*

## 1. Introduction

Recently the society must be aware to the importance of maintaining the safety and sustainable environment. Exploitation of natural resources to meet personal needs, especially for the benefit of operation systems in industry. The natural damage caused by the exploitation of natural resources has led to scarcity of clean water and also various kinds of natural disasters. Therefore each of us should be aware to pay attention for the safety of the environment. Especially for the industry that produce many products in productive activities in relative a lot of quantity. It is expected that the operation system they apply, implement the principle of green manufacturing. Besides, customers, should be more aware of the importance of healthy lifestyles in consuming and using products to meet the needs and desires.

This paper presents the results of a survey of 35 small scale entrepreneurs in the city of Semarang who produce food or beverage products that have applied the principle of green manufacturing. The choice of small scale business that is caused of more than 90% of business in Indonesia entered into the category of small business [4]. While on small scale business more than 60% produce food and beverage [4]. The reason given by the entrepreneurs is because the repetition of the consumers' consumption tends to be high, so the turnover of working capital is also relatively fast.

The concept of green manufacturing refers to Deif's theory, 2011[1] but adapted to the condition of small-scale food and beverage business in Semarang. Variables used in this survey are applied green manufacturing to the raw materials used, the production process, and the product (finished goods). The study in this survey is about the influence of internal and external variables of entrepreneurs toward the implementation of green manufacturing in their business, according to their perception. Indicators that show high average scores need to be focused on increasing efforts to support green manufacturing implementation, especially on small scale enterprises. Furthermore, this survey examines the support to green manufacturing implementation on business performance as measured by the profit generated.

Overall this paper presents the result of survey will be used as baseline data for the research being prepared, ie on supply chain management from upstream to downstream, for food and beverage products manufactured on the basis of green manufacturing principles. For the purpose of the research, another survey will be conducted to identify consumer perceptions of environmentally friendly food and beverage products.

## **2. Theoretical Review**

This survey uses three main variables: entrepreneur perception on green manufacturing implementation, entrepreneur perception about internal factor, and entrepreneur perception about external factor. Each variable is measured by using the appropriate indicators. Green manufacturing refers to the theory of Deif, 2011 [1] which states that the concept of green manufacturing, was coined to the new manufacturing paradigm that employs various green strategies (objectives and principles) and techniques (technology and innovations) to become more eco-efficient. This concept is further implemented in the operation system in Heizer [3] in small industry in general. The operation system is measured by indicators: input (raw materials), process (production), and output (product).

In case of an implementing the green manufacturing in small business is assumed as an innovation. Because the implementation of green manufacturing concept on small business identic with high production cost. So the influencing variable refers to the entrepreneurship process model developed by Bygrave, William D in Suryana [5] that simplified and adapted to small business. This simplification is set by using two factors, namely from within the entrepreneur and from outside the entrepreneur. Internal factor of entrepreneurs referred these indicators:

- a. locus of control achievement,
- b. risk taker,
- c. personal values,
- d. education, and
- e. experience

While the condition coming from the outside of entrepreneurs is called as an external factor with indicators:

- a. role models,
- b. community network, and
- c. family

Meanwhile, to determine the small scale industry, the provision is based on Indonesian Regulation number 20 of 2008 [6] using the average sales criteria a year that does not exceed 2.5 billion rupiahs. The net asset criterion is not used in the determination of this small business because some of entrepreneurs can not separate the personal assets with the business asset.

## **3. Research Method**

Although this paper presented the result of a survey, it is attempted to be performed and processed using appropriate research methods. The population in this research is small scale food entrepreneurs in Semarang city. The entrepreneur is perceiving that the managed business has implemented green manufacturing concept which perceives that his business has applied green manufacturing principles for the management of raw materials, production process, the product (finished goods). The sample is determined by purposive as many as 35 entrepreneurs. However, as only 30 entrepreneurs respond to all statements of each indicator in each variable, therefore only

responses from 30 samples are processed using statistical methods. As for the qualitative analysis related to the perception of business profit using the entire sample, which is 35 entrepreneurs.

The data used in this study is the primary data by using questionnaire and interview. Questionnaire were used as instruments to obtain responses on green manufacturing variables, and internal (personal) and external (social) factors. Interview method is used as an instrument to get data of entrepreneurs perception about business performance, as measured by using profitability tendency after applying green manufacturing principle.

Measurement scale of data obtained by using Likert scale. Because all the statements are positive, then for the answer strongly agree given the score 5, the answer agreed with score 4, hesitate with score 3, disagree with score 2, and strongly disagree with score 1. By statistical analysis, the questionnaire was tested by validity test. All indicator variables declared valid because the value of r count is greater than r table that is 0,33 in Ghozali [2]. Likewise with the reliability test. All indicators are reliable because the value of cronbach alpha is greater than 0.6 [2].

To examine the effect of internal and external factors on the implementation of green manufacturing, multiple linear regression method using formula as shown below

$$Y = a + b_1X_1 + b_2X_2 + e$$

- Y : Entrepreneurs' perceptions of green manufacturing implementation
- X1 : Internal factor
- X2 : External Factor
- a : Constants
- B : Regression coefficient
- e : error

In addition to the regression method, also conducted an analysis with qualitative methods to assess perceptions of profit trend after the application of green manufacturing.

#### 4. Analysis

Data processed from 35 sample survey of small business actors in Semarang city which produce food and beverage, which perceives have applied green manufacturing principles are as follows:

The general profile of the business shows the kind of product and how long the business has applied the green manufacturing principles

**Table 1.** General profile

Green manufacturing implementation	Product					
	Food		Beverage		Total	
	freq	%	freq	%		%
Less than 1 year	5	14,29	1	2,86	6	17,14
1 – 3 years	2	5,71	4	11,43	6	17,14
3 – 5 years	10	28,57	6	17,14	16	45,71
More than 5 years	7	20,00	0	0,00	7	20,00
Total	24	68,57	11	31,43	35	100,00

Source : Primary data (2018)

Table 1 shows that more than 35 respondents produce food (68.57%), compared to beverage products (31.43%). The proportion of food products greater than beverage products is based on the explanation of the respondents chose food products because it is not related to the weather, so that at any time can be produced.

While the average responses of respondents to internal factors, external factors and green manufacturing implementation for 30 respondents (note: 5 respondents did not answer the questionnaire completely) are as follows:

**Table 2.** Entrepreneurs' responses

Internal factor	Average	External factor	Average	Perception of green manufacturing implementation	Average
Locus of control achievement	4,27	Role models	4,30	Input	4,17
Risk taker	4,10	Community network	4,13	Process	4,20
Personal values	4,13	family	4,03	output	4,13
Education	4,13				
Experience	4,03				
Total average	4,13		4,16		4,17

Source: Primary data (2018)

Based on the table all the variables show in a high average. It means that internal factors and external factors perceived very important role in their business. Similarly, the perception of green manufacturing implementation has been implemented as well as they should. To analyze the effect of internal factors and external factors on the implementation of green manufacturing can be seen in the following multiple linear regression:

**Table 3.** Multiple Linear Regression Coefficients<sup>a</sup>

Model		Unstandardized Coefficient	Std. error	Standardized Coefficients	t	Sig
1	(Constant)	,298	2,678	Beta	,121	,899
	Internal	,193	,084	,249	1,988	,046
	External	,988	,167	,663	5,812	,000

Dependent Variable : GREEN MANF

Source: Primary data (2018)

$$Y = 0.298 + 0.193X_1 + 0.988X_2$$

From the equation can be explained that the internal factors and external factors have a positive influence on the implementation of green manufacturing. This is indicated by t value of 1.988 for internal and 5,812 for external. The value of the internal factor coefficient of 0.193 shows that if the internal factor is better, then it will improve the implementation of green manufacturing principles. Likewise with external factors, the better the external (social) conditions surrounding the small business, the implementation of green manufacturing will increase.

Based on the result of the average responses of entrepreneurs in table 2, the indicator locus of control achievement shows the highest score in average. This shows there is indeed a strong desire in the entrepreneurs and they are sure be able to achieve it. It means that the most powerful green manufacturing enforcement is influenced by the intentions that exist in themselves. However, the external environment in general gives the most powerful influence for entrepreneurs to apply green manufacturing. Therefore, the publication of entrepreneurs who have successfully implemented green manufacturing as role model, in order to be followed by other entrepreneurs. Likewise, the community network must also actively develop many activities for the implementation of green manufacturing.

Based on responses from 35 small entrepreneurs who have implemented green manufacturing, as much as 74.28% stated that the business profit obtained tends to increase. This happens because the market is widely open, it means many people who are aware of the importance of healthy lifestyle is increasing furthermore. So the consumption of healthy food and beverage products is also increase. It

means the entrepreneurs can upgrade their production capacity, the more products produced the total cost per unit tends to be lower. With the lower total cost, the profit margin per unit of product will be greater.

While as many as 25.72% of entrepreneurs stated that the profit has a dynamic tendency. This is due to the influence of price volatility and availability of raw materials that are seasonal. So that price adjustment following the change of production cost is rather difficult.

## **5. Conclusion**

Based on the analysis result, it can be concluded that the internal and external factors of small food and beverage entrepreneurs in Semarang have positive influence toward the green manufacturing they have implemented. The most powerful influence is the desire from within the entrepreneur himself (locus of control achievement). It cause by they have awareness to the green enviroment in running their business. They understand the environment must be kept in order can be sustained in coming years. In addition, the general external factors also give a strong influence. The role of all parties to publicize the success of businesses that have implemented green manufacturing is very important. In addition, the community network is keen to campaign on the importance of green manufacturing. Thus it is necessary to be facilitated by the government and the private sector in the publication.

## **References**

- [1] Deif, Ahmed M, 2011, A System Model for Green Manufacturing, Journal of cleaner Production
- [2] Ghozali, Imam, 2013, Aplikasi Analisis Multivariate dengan Program IBM 21 Update PLS Regression, Diponegoro University Publisher
- [3] Heizer, Jay and Barry Render, 2008, Operation Management 9<sup>th</sup> Edition, Pearson International Edition
- [4] Soekesi, Agustine Eva Maria and Marcella E Simandjuntak, 2015, Design of Franchise Business using the Appropriate Operation System for Micro and Small Scale Industry, Higher Education General Directorate, Indonesian Ministry of Education and Culture.
- [5] Suryana, 200o, Kewirausahaan, Salemba Empat
- [6] Indonesian Regulation no 20/2008 about Micro, Small and Medium Enterprises

# The Study of Quality Organoleptik and Microbiology Anchovies Dry in Toniku Village West Halmahera North Maluku Province, Indonesia

<sup>1</sup>Ahmad Talib, <sup>2</sup>Farid Dunga, <sup>3</sup>Sitkun Deni

<sup>1</sup>Lecturer on a Course of study Fisheries Product Technology, Muhammadiyah University North Maluku, Indonesia,

Email:madoks75@yahoo.co.id

<sup>2</sup>Student on a Course of study Fisheries Product Technology, Muhammadiyah University North Maluku, Indonesia, <sup>3</sup>Lecturer on a Course of study Fisheries Product Technology, Muhammadiyah University North Maluku, Indonesia

**Abstract.** Organoleptik is testing on old passion for food and a willingness to use a product by test the senses or sensory test on either earnings a product. While test microbiology is one of the criteria for the quality of food and the safety of are often practiced to meet various criteria microbiology food an ingredient. The purpose of this study is to find value organoleptik quality and microbiology anchovies dry produced by the rural communities Halmahera Toniku district west. The methodology that was used consists of two phases, pt pgn promised to supply the sample collection also the preparation of the tools and materials. The second phase is testing stage organoleptik with the methods and microbiology is the hedonic with the total plates. The results of the study organoleptik shows that an attribute, the visibility of the of flavor of odor and the consistency of with a value of up range (7-8). While product quality testing microbiology alt on storage one month with a total value microbes belong to ( $2,6 \times 10^4$ ), storage it fell apart two months ( $4,3 \times 10^4$ ), storage three months ( $5,6 \times 10^4$ ), while the *E. coli* and *Salmonella* the results of his testing are negative with the (there is no bacteria).

**Keywords:** *Toniku west village Halmahera North Maluku, study organoleptik quality, microbiology anchovies dry*

## I. Introduction

Potential resources (standing fish stocks) contained in waters Morth Maluku estimated 694.382,48 tons of potential sustainable that can be used maximum sustainable yield (MSY) 347.191,24 tons of/year. Comprising the small and large pelagic and demersal fish. The big and the small pelagic fish reached 211.590,00 tons/year while demersal fish 135.005,24 tons/year from potential does show that waters North Maluku prospective enough resources to in the governance and used in a sustainable way (Alwi, 2014)<sup>1</sup>. West Halmahera situated in the region of the Province of North Maluku. With a total area west halmahera consisting of a single broad the ocean and the land area reached 14.253,66 km<sup>2</sup>, broad the sea 11.253,50 km<sup>2</sup>, the land area 3.108,16 km<sup>2</sup>. The production of ocean fisheries west halmahera for this year is 76.261,41 tons consisting of a kind of large pelagic 46.124,34 tons, small pelagic 18.909,86 tons, and demersal 11.227,21 tons (West Halmahera Marine Fisheries Agency, 2013)<sup>2</sup>. One of the district west halmahera that has the potential resources small pelagic fish located on the gulf dodinga, where fishing activities get anchovies developing well as well as one centers of production anchovies dry in Morth Maluku

Many fishes processed because they have the importance of the also of that can be used either as fresh fish and fish dry. Processed fish resources of its abundant in indonesia is an opportunity to develop businesses that many have undertaken by traditional processing industry. Processed fish anchovies and dry which is produced the community in village Toniku and North Maluku in general , usually of us have a lasts long 1 until 2 the moon even he or she could hold out more than 3 to two months depending on how to handle this problem a good. The womb nutrition from the food any material will undergo a change during storage caused by the activity of an enzyme and bacteria.

The existence of of microorganisms in food supplies a great deal to do the condition of food supplies anchovies and dry, because of these the majority were microorganisms lawless robber and a destroyer like mildew. The presence of microorganisms pathogenic it was possible to have lowers the quality processed fish that is produced (Volk and Wheeler, 1993)<sup>3</sup>. See problems that happened to the anchovies dry produced by the rural communities Toniku (Halbar) and lack of information on the quality of anchovies dry good , then required this research

## 2. Research Methods

The purpose of this study is to find the value of the quality of organoleptik and microbiology processed fish anchovies and dry produced by the community in the village Toniku West Halmahera. As for the benefit of this research is to add scientific information for processing anchovies toniku dry in the village, about the quality of microbiology and organoleptik processed fish anchovies and dry produced by the local community. A sample was obtained from anchovies Jailolo Toniku Village in south West Halmahera District, and carried out an examination of processing anchovies dry by the community, and then will be testing organoleptik in the Laboratory Technology Fisheries Muhammadiyah University North Maluku as for the microbiology Laboratory LPMHP conducted in North Maluku Province.

### 2.1. Materials and Instrument

The materials used in this research is anchovies (*Stelophorus heterolubus*), laundering water, butter field phospat, nutrients to media (PCA), a solution of *NaCl* dan *PDA* (*potato dektrose agar*). An instrument used is a basin, they believe that the scales, erlenmeyer, a beaker glass, hot plate, stirrer, an autoclave, burnes, plastic sterile, tweezers, stomacher, a rack test tube, test tube, petridish, biomate, of incubator, pipet, a petri dish and handtally counter. To assay organoleptik use stationery writing and sheets scoresheet .

## 3. Results and Discussion

### 3.1. Karakteristik Improvement In The Quality of Organoleptik Anchovy Dry

Testing organoleptik for a food was assessment test used the senses of sight, of taste and odor. This can be seen with the quality of a product or receipt (Soekarto and Hubeis, 2000)<sup>4</sup>.

#### 3.1.1. Appearance

The visibility is parameter that can be seen visually that causes the panel interested and fond of that product, the visibility of a product food is towing main factors before the panel love of the nature of the quality of the other like a sense of sensory, smell and texture. In general consumers choose food having an apparition withdraw (Soekarto and Hubeis, 2000)<sup>4</sup>. Organoleptik testing shows and that the value of the assessment results of the visibility of the panel quality control anchovies dry is presented in Figure 1

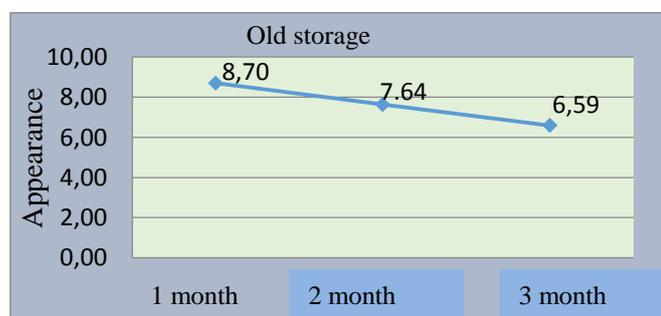


Figure 1. Charts the visibility organoleptik anchovies dry

Figure 3 . Showing that the average the visibility of anchovies dry where to treatment long storage one month with the 8,70 to the specifications (whole, clean, neat, luminous by of the type), then in storage two months with the 7,63 to the specifications (whole, clean, blowzy, luminous by the type of ), in storage three months with the 6,59 to the specifications (whole, clean some what dull) .Compared with a standard of organoleptik set by SNI 01-2708-1992 (BSN, 1992 ), the product anchovies dry research results are still according to the standard<sup>5</sup>.

The results of the analysis variety of shows that long storage products to exert an influence very real the first ( $p>0,05$ ). Further testing shows next BNT (different real smallest), it can be concluded that all three different treatment long storage very real between one with another. The visibility of anchovies dry looked the same for all treatment long storage and there is no physical damage and the absence of a discoloration means, besides a long time storage the longer, make revenue the panel tends to be decline

The longer do storage and a decline in the visibility. This is because the influence of heat for drying causing the reaction browning (*Maillard*) between amino acids by reducing sugar and the salt in products. According to Lee (1983), that sugar reducing agent upon fish is the result of the breakdown of glycogen for a moment after of a dead fish<sup>6</sup>. Reaction between an acid amino acids and sugar will form melanoidin reducing agent, a polymer brown that can drive down the value of the visibility of the product .

Browning of also happens because the reaction between a protein, peptides and amino acids with the result even though the decomposition of fats. A reaction maillard is readily occur on three days before groceries that are salt water and water and and shall demolish your high of water larger than 20 % (Jay, 1992)<sup>7</sup>. The same thing by Indriati *et al.* (1991) find that reaction browning fish dry in indonesia most of them are products be salinityt 7,70%-16,90% with value activity water (Aw) between 0,70-0,78<sup>8</sup>. To maintaining quality of the fish dry, things mentioned above should be considered in doing processing .

### 3.1.2. Odor

The deliciousness of a food is very set by a factor of smell, the odor of be an attraction in themselves determine a sense of anakim large in stature from food products itself (Soekarto and Hubeis 2000).<sup>4</sup>The odor of more frequent contact with panca the sense of smell. In general the odor of received by the nose and the brain more is a mixture of four odor that is the scent, acid, and rancid as often as who 1997). Organoleptik testing shows and that the value of the assessment results of the the panel against smelly fish anchovies and dry can be seen in Figure 2.

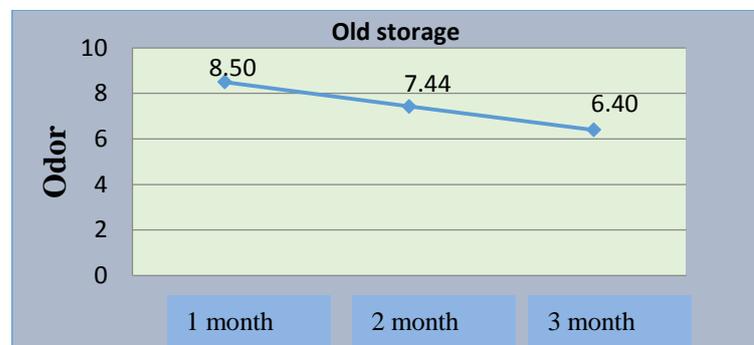


Figure 2. A chart value organoleptik smell anchovies dry

Figure 4. Showing that the smell rata-rata anchovies dry to treatment storage months old 1 worth 8,50 to specification (fragrant, specific type, devoid of smell additional), then in storage 2 months with the 7,43 to specification (almost neutral, little whiff additional ) and experienced a fall in storage 3 months with the 6,40 to specification (neutral, little whiff additional). The results of the analysis variety of shows that long dry storage anchovies real influence on the perceived value of smell on the economic of situation ( $p>0,05$ ). Further testing shows next BNT (different real smallest ), it can be concluded that treatment long storage one month different with the storage of 2 months and three months .

A decline in the value of smell on storage three months, so as to further application will affect the reception of the customers to dry anchovies products that is stored more than four months. During the three months storage, the fall in the value organoleptik the odor of relatively small. It is suspected that this because of a metabolite simple derived from proteins and fats will yielding an odor ammonia , foul , other rancid and odor unwanted. According to Bligh *et al.*, (1988), drying can promote a oxidation and rancidity on taking fat so that it can be lower the value organoleptik smell<sup>9</sup>.

### 3.1.3. Flavor

A sense of a decisive factor power received the customers to food products .Many are considered to be taste is more use of the senses of taste or tongue. A sense of factors play an important role in the selection of products by the consumer, because even as good nutrition content but it did not to be acceptable to its best customers turn increase nutrition the community did not target can be achieved and it less attractive to consumers (Winarno 1997)<sup>10</sup>. The testing organoleptik and value of the panel the scores against the anchovies dry is presented in Figure 3.

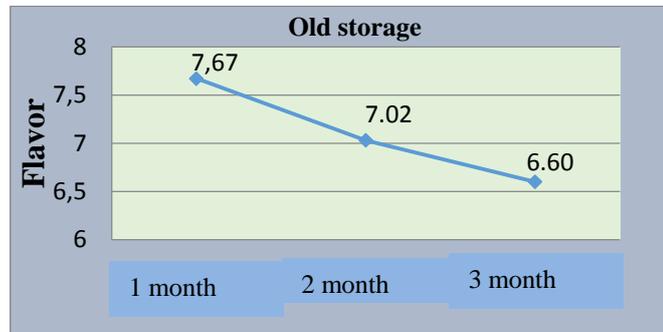


Figure 3. A chart value organoleptik taste of fish anchovies dry

The assessment results of the the panel against taste of fish anchovies and dry during storage shows that on average the value of 7,67-6,60 obtained was that.The score 7 on judgment organoleptik flavored with specification is was out of this world, specific of types, additional without taste. Compared to a standard of value organoleptik set by SNI 01-2708-1992 (BSN, 1992), anchovies products dry the result of this research is still in line with a standard. The results of the analysis variety of shows that long storage anchovies dry of 1 month , 2 months and 3 months as a whole real influence<sup>5</sup>.

The next test further BNT (different real smallest), concluded that treatment storage third old different very real between treatment with each other at standard ( $p>0,05$ ) on reductions in the value of anchovies dry produced. During both the first storage of the moon to the month of 3rd the fall in the value do not think so too it is evident that there for all treatment. This is because the amount of bacteria relatively small so they also a few compound macromolecules once the scene of destruction and it did not quite affecting the flavor of anchovies dry produced products. Investigators Sedjati (2006), that component full-flavored in anchovies dry also influenced by events reshuffle compound macromolecules yield substances undesirable in food.

### 3.1.4. Consistenci

Consistency is a component and the structure set and merged into micro and makrostruktur in terms of the flow of deformation. Consistency an ingredient depends on the circumstances of physical material so the an assessment of consistency can be violence, kerenyahan and elasticity (Thalib, 2008)<sup>11</sup>. Consistency a foods connected with water content in the foodstuffs.The less content of the water and food to be more fragile (Winarno,1991).The testing organoleptik and value of the panel the scores of consistency anchovies dry is presented in Figure 4.

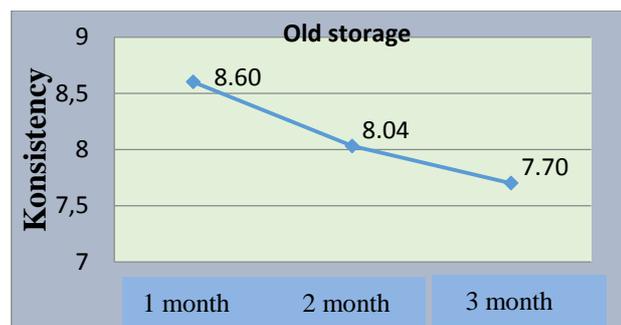


Figure 4. Charts value organoleptik consistency anchovies dry

The assessment results of the the panel against the consistency of anchovies dry during storage shows that on average the value of 8,60-7,70 obtained was that. The score 8,60 on judgment organoleptik consistency to the specifications are solid , compact , pliable, it is dry enough .Compared to a standard of value organoleptik set by SNI 01-2708-1992 (BSN, 1992), anchovies products dry the result of this research is still in line with a standard<sup>5</sup>. The results of the analysis variety of shows that long storage anchovies dry of 1 month, 2 months and 3 months as a whole impacts in the value of the consistency. Further testing shows bnt next, it can be concluded that all three different treatment long storage very real between treatment one with another at the economic of situation ( $p>0,05$ ) on the perceived value of the consistency of anchovies dry resulting.

The average score shows that, assessment the panel almost equal and range value that is not too far for each treatment. Although such appraisal the panel tended to decline with the long do storage. The water level of which the lower is occurred because of the increased salt contained in of their supplies of fish anchovies , the level of packaging and long drying so that the product into a solid and compact and have an impact on the level of the reception of the panel on the perceived value of the consistency of anchovies dry resulting. This is in accordance according to Rahman (2007), that muscle and cells will put a girdle around fish for water content in the body of fish after doing drying and the process of dehydration osmosis<sup>12</sup>. The escape of the water because salt is osmotic resulting in texture of fish to dense and compact

### 3.2.Characteristic of microorganisms anchovies dry

#### 3.2.1. The results of testing ALT

Anchovies protein content that is relatively high ( 16 % ) and she waters reached to 80 % will cause anchovies easily broken. In traditional processing in general, the manner of processing that less hygienic and sanitary, and stowage in the state of being not protected/packed with good on condition of the tropics, resulting in the product anchovies dry very fragile to destruction microbiologist (Sedjati, 2006 )<sup>13</sup>. The results of the testing the value of a plate of total of the anchovies dry can be seen in Table 1.

**Table 1.**The value of a plate of total anchovies dry

No	Treatment	Value
1	Storage 1 month	$2,6 \times 10^4$
2	Storage 2 month	$4,3 \times 10^4$
3	Storage 3 month	$5,6 \times 10^4$

Table 1. Shows that the total amount of a plate of the number for the total anchovies dry storage on 3 month with value  $5,6 \times \text{nilai} 5,6 \times 10^4 \text{Cfu/g}$ , 2 months in storage namely  $4,3 \times 10^4 \text{Cfu/g}$ . while the lowest score in storage one month namely  $2,6 \times 10^4$ . The results of the analysis the total number plate total anchovies dry. There was a rise in microbes in line with the length of the age of save the product .It is suspected that this because influenced by several factors, such as the influence of the temperature, the raw material before it is processed, processing and handling while conducting a process of drying that is less sanitary so that contamination microbes with the type of neighborhood that do drying. According to Kurosawa (2003) , that the process of storage at room temperature very expedite the growth microorganisms where most of microorganisms expected to grow well at a temperature of optimum position  $30^{\circ}\text{C}$  until  $37^{\circ}\text{C}$ <sup>14</sup>. At this stage microbes just did adaptation fits the surroundings perfectly (faselag). According to Supardi and Sukamto (1999), faselag or phase adaptation is a phase that microorganisms has not yet commenced cleavage, but the volume, the synthesis of an enzyme, proteins and the increase in activity of metabolism<sup>15</sup> .

The number of that exceed standards set may result in the occurrence the risks of and poisoning for mankind (Berhimpon, 1993)<sup>16</sup>. See the result from the study, product gdp anchovies keringhasil research with long storage 3 months is still could be accepted by consumers or consumed by the human body. Anonymous (2014)<sup>17</sup> that the fish and shrimp processing can still consumed was to have

the number of bacteria  $10^6$ - $10^7$  sel/gram and Indonesia national standard (SNI 01-2718-2006), where maximum limit alt for products anchovies is  $10^5$ - $10^6$  Cfug<sup>18</sup>.

### 3.2.2. The Results of Testing And Salmonela E Coli

The testing E Coli and salmonela to the anchovies dry seen in Table 4 following

**Table 4 .** The value of analysis and salmonela E Coli

No	E Coli	Salmonela
1	Negatif	Negatif
2	Negatif	Negatif
3	Negatif	Negatif
4	Negatif	Negatif

Table 4. Shows that the analysis e coli and salmonela is negative and consequently accepted and in accordance with national standard indonesia and HACCP because it is still under threshold (Negative). This might have been caused several variables always kept in process of handling start to finish that no contamination E Coli bacteria and Salmonella. According to Suwedo (1993), if the water used for handling has undergone kloronisasi or containing certain antibiotics, for example (Otcxytetracycline), and many bacteria dead in bacteria dangerous as salmonella have also been slain<sup>19</sup>. According Mueljanto (1992), that to keep the quality of fisheries products are good the water used for laundering to free from pollution microorganisms<sup>20</sup>.

Investigators Susianawati (2006) that the existence of influence the use of water and handling equipment used who may also did not come from up impurities environment, because bacteria coliform, E Coli and Salmonella used as an indicator to measure the contamination hygiene equipment and in the process<sup>21</sup>. Bacteria coliform can be found and growing itself as flora equipment processing not really clean, while E . Coli are harder to detect compared with coliform or faecal coliform

## 4. Conclusion

The research was inconclusive: as follows

1. Product quality testing organoleptik anchovy dry that is produced by the supplier fishermen fish in the Village Toniku quality is still in line with a standard improvement in the quality of organoleptik which have already been stipulated, where is average the value of out of four parameter is the visibility of the (7-8) , the odor of (7-8) , a sense of (7), the consistency of (8-7).
2. Improvement in the quality of the results of the testing of microbiology as many points right away of a plate of the total on storage 1 of the month with the total microbes belong to ( $2,6 \times 10^4$ ), storage 2 the moon ( $4,3 \times 10^4$ ) and 3 moon therein an ( $5,6 \times 10^4$ ), while the E Coli and Salmonela the results of his testing are negative with the (there is no bacteria), this is in accordance with new regulation of sni (Indonesian National Standard) about the product anchovy dry.

## Reference

- [1] Adawyah, R. 2007. Pengolahan dan Pengawetan Ikan. Penerbit PT Bumi Aksara. Jakarta.
- [2] Dinas Kelautan dan Perikanan Kabupaten Halmahera Barat, 2013. Laporan Tahunan Statistik Perikanan Tangkap.
- [3] Volk, WA, MF. Wheeler. 1993. Mikrobiologi Dasar. Jilid I. Edisi kelima. Penerbit Erlangga. Jakarta.
- [4] Soekarto, ST, M dan Hubeis. 2000. *Metodologi Penelitian Organoleptik*. Program Studi Ilmu Pangan. Institut Pertanian Bogor.
- [5] Badan Standar Nasional (BSN). 1992 *Standar Nasional Indonesia Ikan Teri Asin Kering (SNI 01-2708- 1992)*. Balai Bimbingan dan Pengujian Mutu Hasil Perikanan, DitjenPerikanan, Jakarta.
- [6] Lee, F.A. 1983. *Basic Food Chemistry*. Second Edition. The AVI Publishing Company, Inc., Connecticut.
- [7] Jay, J.M. 1992. *Modern Food Microbiology*. Fourth Edition. Van Nostrand Reinhold, New York

- [8] Indriati, N., Tazwir dan E.S. Heruwati. 1991. *Penyebab Kerusakan pada Ikan Asin, Pengecer dan Grosir di Jakarta*, Jurnal Penelitian Pascapanen Perikanan 71: 49-55.
- [9] Bligh EG, Shaw SJ, Woyewoda AD. 1988. *Effect of drying and smoking on Lipids of fish*. Di dalam: Burt JR, editor. *Fish Smoking and Drying*. New York: Elsevier Science Publishers Ltd.
- [10] Winarno. 1997. *Dasar Teknologi Pangan*. Bogor: Fakultas Teknologi dan Mekanisasi Pertanian, Institut Pertanian Bogor (IPB).
- [11] Ahmad Thalib 2008. *Pemanfaatan tepung tulang ikan madidihang sebagai sumber kalsium dan fosfor meningkatkan nilai gizi makron kenari* [tesis].
- [12] Rahman, M. S. 2007. *Food preservation: Overview*. In: Rahman, M. S. (ed.) *Handbook of Food Preservation*, 2nd ed.: CRC Press.
- [13] Sedjati, 2006. *Pengaruh konsentrasi khitosan terhadap mutu ikan teri (Stolephorus Heterolobus) asin kering selama penyimpanan suhu kamar* (Tesis). Program Studi Magister Manajemen Sumberdaya Pantai, Universitas Diponegoro, Semarang.
- [14] Kurosawa, A. (2003) *Teknologi Pengolahan Keamanan Pangan*. Bandung: Penerbit. Departemen Kelautan dan Perikanan.
- [15] Supardi, Sukanto M. 1999. *Mikrobiologi dalam Pengolahan dan Keamanan Pangan*. Penerbit Alumni. Bandung.
- [16] Berhimon, S. 1993. *Mikrobiologi Pangan Ikan Bagian I, Ekologi dan Pertumbuhan Mikroba serta Pertumbuhan Biokimia Pangan*. Fakultas Perikanan dan Ilmu Kelautan. Universitas SamRatulangi (Unsrat) Manado.
- [17] Anonim, 2014. *Mikrobiologi bahan pangan*. [http://www. Mikrobiologi](http://www.Mikrobiologi) [Diakses Juli 2015].
- [18] Badan Standar Nasional (BSN). *Standar Nasional Indonesia Ikan Teri Asin Kering* (SNI 01-2718-2006). Balai Bimbingan dan Pengujian Mutu Hasil Perikanan, Ditjen Perikanan, Jakarta.
- [19] Suwedo, H. 1993. *Tehnologi Pengolahan Hasil Perikanan*. Liberty. Yogyakarta.
- [20] Moeljanto, 1992. *Pengolahan dan Pengawetan Hasil Perikanan*. Penebar Swadaya. Jakarta.
- [21] Susinawati, R. 2006. *Kajian penerapan GMP dan SSOP pada produkIkan asin kering dalam upaya peningkatanKeamanan pangan di kabupaten Kendal* (Tesis). Program Studi Magister Manajemen Sumberdaya Pantai, Universitas Diponegoro Semarang.

# Potential and Barrier Analysis, Implementation of Education Based on Local Wisdom in SDN Burengan 2 Kediri

Alfi Laila<sup>1</sup>, Karimatus Saidah<sup>1</sup>, C. Asri Budiningsih<sup>2</sup>, Kastam Syamsi<sup>2</sup>

<sup>1</sup> Universitas Nusantara PGRI Kediri, Indonesia  
Email : alfilaila@unpkediri.co.id

<sup>2</sup> Universitas Negeri Yogyakarta, Indonesia

**Abstract:** The purpose of this study is to describe the potential and obstacles related to the implementation of education based on local wisdom in SDN Burengan 2 Kediri City. The research method used is descriptive qualitative with research location SDN Burengan 2 Kediri City. Data collection techniques used are interviews, observation and documentation, while data analysis techniques using triangulation techniques sources. The results showed that in general the program implemented by the school has accommodated the value of local wisdom. Potential implementation of local wisdom-based education can be implemented through integration with existing school programs and extracurricular activities of students, in addition to government support through governor regulation no. 19 Th 2014 assist the implementation of the program. Obstacles related to the implementation of local wisdom-based education is the absence of a special team, village officials have not been consistently involved, the design of the curriculum has not been directed to the implementation of local wisdom and there has been no comparative study to support the implementation of education based on local wisdom in SDN Burengan 2 Kediri.

**Keywords :** *Potention, Obstacles, Education, Local Wisdom*

## 1. Preliminary

Indonesia has a wealth of nature and culture are very diverse. The diversity contained in human social life gave birth to plural society (Herimanto, and winarno, 2010: 99). This plurality makes the distinctive characteristic of each local culture in Indonesia, better known as local wisdom. Local wisdom is everything that characterizes a region, whether in the kind of food, customs, dances, songs and regional ceremonies. According to Alfian (2013: 428) local wisdom is defined as a view of life and knowledge as well as a life strategy tangible activities undertaken by local communities in meeting their needs. Meanwhile Setiyadi (2012: 75) states that local wisdom is custom and habits that have been traditionally done by a group of hereditary community that until now still maintained by the customary law community in certain areas. So that local wisdom can be interpreted as a view of life, knowledge and life strategy embodied in customs and habits that have been rooted and maintained by a particular group of people. The form of local wisdom in society can take the form of knowledge system, social system and cultural system. This is reflected in environmental management, customs and cultural results of artifacts such as properties rules, materials and residential architecture, styles and styles of clothing, furnishings, and ceremonies (Maryani & Yani, 2016: 116). Examples of local wisdom that is currently being promoted a lot of the development of herbal medicine which is a heritage in the medical field. Currently the development of herbal medicine has been perfected with applicable pharmacology standards (Fajarini, 2014: 129). This is because to fulfill the needs of people's lives always make adjustments to the natural conditions, social environment and religion, so that merged local wisdom that became the character of a community group. Along with advances in technology and access to information that has been worldwide, led to changes in the way of view and way of life of the community. The lack of selectivity in receiving information from the outside leads to a cultural shift that is more culturally oriented popular. Popular culture is a culture that is in line with the development of the era and technology that has the characteristics of instant lifestyle, modern and in the land by the latest technology, popular culture also concerns the way of life that is not bound by certain customs. Popular culture that is not in line with cultural values or local wisdom that has been

held will cause uncertain identity and lost of Indonesian values. Therefore, there is a need to raise the values of local wisdom in various fields.

- Efforts to raise the values of local wisdom in each area one of them is to implement it in education activities. Educational activities should be directed at the realization of school institutions that promote various local wisdom of society and culture in learning in school. The national law and policy on education-based local excellence / local wisdom, among others.
- a. State Law Number 20 of 2003 CHAPTER XIV Article 50 paragraph 5 affirms that district/city governments manage primary and secondary education, as well as educational units based on local education.
  - b. Government Regulation No. 17 of 2010, article 34, that "Education based on local excellence is education held after meeting the National Education Standards and enriched with competitive and / or regional comparative advantage"
  - c. Government Regulation Number 17 Year 2010 article 35, paragraph 2, that "District / city governments implement and / or facilitate the piloting of programs and / or educational units that have or almost meet the National Education Standards to be developed into programs and / or units of standard education international and / or based on local excellence "
  - d. The strategic plan of the Ministry of National Education 2010-2014 that: Education should develop an understanding of the importance of sustainability and ecosystem balance, its the understanding that humans are part of the ecosystem. Education should provide an understanding of the values of social and natural responsibility to illuminate learners that they are part of a social system that must synergize with other human beings and part of a natural system that must synergize with nature and its contents.

The purpose of education of local wisdom in schools according to Asmani (2012: 41) First, so that students know the local advantages of local residence, understand various aspects related to local wisdom. Second, able to process resources and engage in services / services or other activities related to excellence, so as to earn income while preserving the culture, traditions and resources that become the regional superior, and able to compete nationally and globally. Third, students are expected to love the land of their birth, confident in the future, and aspire to develop local potential, so that the region can grow rapidly in line with the demands of globalization and the information age.

According to Prasetyo (2013: 4), Implementation of local wisdom education can be initiated by inventory of local excellence aspects by analyzing the internal and external conditions of the school, internal analysis can be done by identifying the preparedness of stakeholders, the completeness of facilities, conformity with vision, school mission and work program. While external analysis can be done by identifying the parties around the school that can support local wisdom-based education. Furthermore, what needs to be done is to analyze the potential of local wisdom in the environment to determine the type of local wisdom to be lifted. The opinion is in line with Asmani (2012: 62) which describes the stages of implementation strategy of school based on local wisdom that is First Stage of local potential inventory of excellence that exist in an area, which can be done through observation, interview and literature study. Second, the analysis phase of the readiness of the unit of education, At this stage educators / teams assigned to the school analyze all advantages / advantages internal and external educational units viewed from various aspects by way of grouping the benefits which are related to each other.

The three stages of determining the theme and types of local advantages, things to note at this stage are the selection of comparative and competitive local advantages, the results of internal and external analysis of the school and the interests and talents of learners. Fourth, Phase implementation of the field. The implementation phase of the field should be tailored to the capability of each educational unit, referring to the results of external and internal factors analysis, the result of the inventory of potential local advantages, interests, and talent of learners.

Local wisdom contained in the city of Kediri can be seen in several areas such as arts, food, clothing, and language. In the field of art Kediri has a distinctive jaranan art. According to the local news website Radio Andika fm, Kediri jaranan distinctiveness lies in musical instruments and tanks are dancing *pegon* and *senterewe* dance. Typical foods that become excellent and distinctive culinary in Kediri, among them *Tahu Kuning*, *gethuk banana*, *Nasi Pecel Tumpang*, *Stick Tahu Kuning* and so on. In addition to food and art Kediri has a center of crafts in the form of *batik ikat* clothing which is centered in the area of Bandar Kidul moajoroto district Kediri. In addition in terms of language, Kediri

people use the language of Java as a social language everyday. Kediri has a distinctive Javanese dialect, the Kediri dialect tends to use a finer vocabulary than the common Javanese dialect found in eastern Java. The hallmark of Javanese dialect in Kediri is the use of language that tends to be hyperbolic such as to declare very good, then in Kediri dialect will be pronounced with "ueeenak pool" or very large it will be pronounced into "guuuwedi". In addition Kediri city community still maintain the use of freedom is a term to express a thing, for example "Njanur Gunung" which means to express something unusual implemented or equal to the term "tumben" (often) in Indonesian. SDN Burengan II is a school appointed Ministry of Education and Culture as SD Pembina in Kediri City based on Decree no. 267 / C / KL / 2015 dated June 19, 2015. SDN Burengan II Kota Kediri, in its school program plan also includes activities that refer to efforts to preserve local wisdom contained in the city of Kediri. The results of the preliminary study at SDN Burengan II indicate that the current school has developed programs both intracurricular and extracurricular that raised the values of local wisdom. Therefore, there needs to be an analysis related to the potential and obstacles of the implementation of local wisdom education in SDN Burengan II Kediri.

Previous research was conducted by M. Nur Mannan, Achmad Sopyan, and Sunarno. in 2015 entitled "Development of Local Wisdom-Based Learning Tools to Develop Positive Character Students", indicating that Integrating character education in local wisdom-based learning tools can also be developed for all characters. Result of gain test analysis got the increase of student character equal to 33% from total indicator which developed or are in medium criterion.

In line with that research conducted by Roikhwanphut Mungmachon in 2012 with the title "Knowledge and Local Wisdom: Community Treasure", shows that education that continues to this day still ignores the importance of local wisdom as a result of globalization which only focuses on economic growth. Therefore, educational implementers should integrate local wisdom with the knowledge learned by learners, so as to derive learning outcomes that contribute to their social environment.

Based on these descriptions, this study focused on the study of school program development, analysis of potential implementation education based on local wisdom and obstacles implementation of local wisdom education in SDN Burengan II Kediri City. This study aims to describe how the development of school programs, potentials and obstacles in the implementation of education efforts based on local wisdom in SDN Burengan II Kediri.

## **2. Research Methods**

### **2.1. Research design**

The research design used is qualitative research. Qualitative research emphasizes the effort to understand a subject thoroughly. According to Moleong (2012: 6), qualitative research is a study that aims to understand the phenomenon of experienced by the subject of research thoroughly by way of describing in the form of words and language in a special context and by utilizing various forms of scientific methods. The method used in the research is the description method which means all the data obtained in the research is described in terms of words

### **2.2. Research sites**

The location of the research is SDN Burengan II Kediri which is located on Letjen Soeprapto street 44 number tel. 684062. Kediri. The reason for the selection of SDN Burengan II Kediri because SD has programs to implement the education of local wisdom

### **2.3. Data collection technique**

Data collection techniques is a step undertaken by researchers to obtain research data. Sugiyono (2013: 308-308) argues that data collection techniques are the most important step taken in research through observation, interviews, Questionnaire (questionnaire), documentation, and the combination of the four. The study used three steps, namely documentation, interviews, and observation. Documentation steps are implemented in a way analyze the draft profile and school programs. Interview steps were conducted by interviewing the head of the district as policy maker. Step interview, conducted to find out the description of the implementation of local wisdom education in SDN Burengan II Kediri City. Observation step aims to find out firsthand how the implementation of education of local wisdom by the school

### **2.4. Research Instruments**

The research instrument used is the principal instrument and supporting instrument. The main instrument is the researcher, the supporting instrument is the interview guide and the observation guideline. Researchers set guidelines for interviews to the principal as a resource in the study to obtain data according to the study design.

### **2.5. Data analysis technique**

Collected. Data analysis used according to Model Miles and Huberman consist of data reduction, data presentation and verification. Data reduction aims to reduce and retrieve the necessary data in the study. The process of reduction is done in the analysis of interviews, documentation and observation. The analysis focused on the implementation of local wisdom education. The presentation of data in qualitative research is presented in the form of brief descriptions, charts, tables and the like. The process of presenting the data by presenting data related to the implementation of local wisdom education, as well as analysis of the potential and barriers to the implementation of local wisdom education at SDN Burengan II Kediri. After the data is presented in the form of a description, proceed to the verification process. The verification process that researchers draw conclusions from various data analysis has been done.

### **2.6. Test Data Validity**

To test the validity of data, researchers used triangulation technique. Triangulation technique is a data checking technique that utilizes something else outside the data, for the purposes of checking or as a comparison of that data (Moleong, 2007: 20). Triangulation technique in this research is data from result of interview with principal will be confirmed by documentation in the form of draft profile and school program also result of observation.

## **3. Results And Discussion**

### **3.1. Implementation of Local Wisdom-Based Education**

SDN Burengan 2 is located on the street letjen soeprapto number 44 kelurahan burengan, Kecamatan Pesantren Kediri. This school has been established since 1955 and has been accredited "A". This school has a vision of "Bertaqwa (obidience), excellence in achievement and character".

Efforts to improve the quality of learning is done continuously by SDN Burengan 2 Kediri, so that in 2015 SDN Burengan 2 was appointed by Kemendikbud as SD Pembina in Kediri City. SDN Burengan 2, has many achievements both academic and non academic. In the academic field, among others, is to get a gold medal and merit at the Competition of Realistic Nalaria Mathematics (KMNR) in Indonesia in 2016 at the Bogor Agricultural Institute, the provincial mathematics champion held by Jember Mathematics And Science Community (JMSC) in 2015, and other academic achievements at the sub-district and city of Kediri .

In the non academic field student achievement SDN burengan 2 Kediri City is the 3rd winner in the dance creations and painting competition held by the education office of Kediri city in 2016, the 2nd winner in the race of cadres of Tiwisada 2017 kecamatan Pesantren held by the Forum of Education Quality Improvement (FPMP ), as well as other achievements such as speech competitions, poetry reading, pantomime and so on Kediri city level.

SDN Burengan 2 Kota Kediri has not formally declared itself as a school that implement curriculum based education of local wisdom, but SDN Burengan 2 Kediri City continues strive to align its educational activities so that students have and understand the attitude in accordance with the values prevailing in the community. So that the program is prepared able to accommodate the values of local wisdom.

### **3.2. School Program Development**

SDN Burengan 2 is one of the favorite schools with adequate facilities in Kediri. The result of interview with the head of SDN Burial II of Kediri, Markus Widiarto, indicates that schools do not have special teams dealing with the implementation of local education based on local wisdom, but the school focuses heavily on the values of the characters. This is inherent with the school vision of "Bertaqwa, Unggul in achievement and Character. One effort to form the character of students is to explore the local cultural values that exist in the city of Kediri. The annual program proclaimed by the school as consistent activities are carried out as follows (saidah, 2018: 36-37).

#### **1. Character Development and Character Growing**

This program is a manifestation of the vision of SDN Burengan 2 that is to be a school of character. Character building and character development is done through the habituation and exemplary of the teacher. The form of character building activities among others is the habituation movement before the learning begins students are required to pray, sing Indonesia Raya songs, and read the book 15 minutes, with this activity is expected religious values of nationalism and love of reading will be formed in students. To increase students' awareness of the environment, SDN Burengan 2 introduced the LISA program which is an acronym of "Lihat Sampah Ambil" (See The Garbage Pick Up), this program not only applies to students but entire school members, so with the exemplary of all school members in expecting students accustomed to throw garbage in place to keep the environment clean. In addition, the school also has a Javanese journal program movement, it is applied so that students better understand the Java language in accordance with the rules, for example, if talking with teachers using kromo language is the level of language Java is more subtle, which is used when talking to an older person as a tribute, while with fellow students using ngoko language is a social language between peers. Javanese language conversation on Friday is also an effort to preserve the culture of Javanese language which is currently starting to be abandoned, especially the language of Java chromo.

## *2. Learning Outside Class*

Learning outside the classroom after each UTS or UAS. This activity is organized by visiting places that are educative in accordance with the grade of students, such as visits to Monumen Simpang Lima Gumul, Pasar Pahing which is one of the biggest traditional market in Kediri, Blimbing Garden, mushroom cultivation center in Blabak village, sugar factory of Pesantren which is a long sugar factory in Kediri and others (Laila dan Saidah, 2016: 181).

the selection of sites visited consider the educational, financing, distance and time aspects, so that each class visits different locations according to the agreement they have made. Teachers are in charge of accompanying student visits and providing direction related to what they need to consider and learn during the learning activities at out of class. In certain locations there are presenters who are ready to give explanations to the students, such as the visit to the Gubug Lazaris Kediri, students are invited to know organic farming, and dairy farms delivered by the Romo Hardo, or visits to 521 Infantry Battalion, students in guide by one of the TNI representatives for understand the diversity contained in Kediri. Students are also expected to have knowledge and skills in accordance with the needs that exist in the surrounding community.

## *3. Inspiration Class*

Inspirational class is a program conducted by inviting experts related to the competence of learning. This is so that students can learn the knowledge directly from the expert on the competence or field. Areas of expertise such as painters for art learning activities, Batik Craftsmen, doctors, writers and other relevant fields. the selection of speakers in the inspirational class involves teachers and school associations consisting of parents. this activity as a form of cooperation and involvement of parents to school programs. In addition to this inspirational class program, if there are parents of students who have expertise in accordance with the required competencies, then the school will invite and empower students' guardians as speakers. In addition, the school is also working with relevant parties if necessary, such as inviting the doctor Elida Mustikaningtyas, sp.THT-KL who is a specialist ENT, to give material about ENT, and provide free checks for ENT.

## *4. Improvement Program of Parent and School Cooperation*

This partnership program is a collaborative program developed by schools involving parents and school committees. Through this program is expected to establish better communication between the school with parents and the committee. variants of the activities carried out in the form of establishing class paguyuban, meetings, and discussions related to student learning. Paguyuban class is a community consisting of parents and teachers of each class, through this class of community teachers and guardians can exchange good information about development of students and school programs that students need to know. Meetings and discussion of learning are conducted both within the scope of the classroom community and the school committee. For example through a seminar about the role of parents in addressing the development of children, followed by parents of students, by inviting speakers from the Commission for Child Protection (KPAI).

In addition to increasing the cohesiveness between parents and school in a fun game between parents and teachers. Parents of students, in the learning activities outside the classroom are also

involved to participate in guarding their children in learning activities. A well-established collaboration between the school and the parents will be able to provide positive support for school progress and student learning progress.

### *5. Extracurricular Activities*

Extracurricular activities conducted at SDN Burengan 2 are very diverse. It is based consideration of student interests and talents. Extracurricular types that exist in SDN Burengan 2 are qasidah, Musabaqah Tilawatil Quran (MTQ), drum band, dance and karawitan art, music, choir / vocal, scout and others

Extracurricular activities guided by teachers and artists who are experts in their field. Extracurricular activity schedule is held on Thursdays until Saturday at 10.00 - 17.00 according to the learning schedule in school. Currently not all extracurricular have a special room to practice, so that there are activities held in the yard of schools, classrooms, in the studio and in the muses, such as qasidah and MTQ, held in school musolo. While the art of dance and karawitan performed in studio. The development of talent and potential of students through extracurricular program is expected to increase the interest and achievement of students in the field being explored.

### **3.2. Potential Implementation of education based on local wisdom**

Local wisdom-based education is essentially a reappearance of local values and integrate them into learning activities. Education by adapting the value of local wisdom will be better if embodied in a systematic concept, understood by all relevant stakeholders, so that the local values are part of the spirit of education in school.

The model of local wisdom-based education is an effort to teach students to know the environment and have skills in accordance with the needs of their environment. According to Nadlir (2014: 312), the material in the local wisdom-based education model should have a high meaning and relevance to real life empowerment based on the reality faced by the students. Local wisdom-based education can be used as a means of effort preservation of local cultures, so that it can continue to live and thrive through the process of education in schools.

One of SDN Burengan 2's vision is to become a character school. Character is the self-values that then control the way of thinking a person and manifested in an action (Fajarini, 2014: 129). According to Daryanto & Darmiatun (2013: 70), one source of character education is culture, because people's lives are always based on recognized cultural values in the society, cultural values serve as a basis in giving meaning to a concept and meaning of community communication behavior the. So this is closely related to the exploration of the values of local wisdom, as the catalization of the character values and identity of the people of Kediri. Implementation of character education if implemented in SDN Burengan 2 Kediri City will be in line and support the implementation of school vision.

The potential implementation of local wisdom-based education can be seen from the routine school programs that have been implemented. In a character growth program, the school applies Friday language in Javanese language. Java language not only serves as a means of communication, but relates to the social ethics that became the culture of Kediri society. Students are familiarized using appropriate Javanese language to help preserve cultural values in Javanese language. Local wisdom-based education opportunities can also be implemented in out-of-class learning activities, inspirational classes and cooperation programs with parents. Classroom learning activities have so far been conducted by visiting educational sites, such as farms and gardens, as a means of getting to know the potential of Kediri, but so far the visit has not been specifically conceptualized. To get to know more local wisdom in the city of Kediri schools can arrange the concept of the visit in accordance with cultural excellence, for example the field of economy, art, cultural artifacts and such. In the economic field such as visitation activities directed to industrial centers "Tahoo Kuning and Gethuk Pisang " which is a typical food Kediri city.

The inspirational class program, has so far invited doctors, artists and other professional jobs. This becomes an opportunity to implement local wisdom education by inviting cultural, or craftsmen who have a typical Kediri handicraft business such as batik weaving craftsmen. The purpose of this activity is to educate and introduce students related to local cultures in the city of Kediri and the values contained therein. In order for all relevant stakeholders to understand the concept of education based on local wisdom, then through partnership programs with parents, can be made a means to conduct counseling or seminars which aims to understand all members of the school regarding the urgency of implementation of education based on local wisdom. If all relevant stakeholders have the same

understanding, then in the implementation, the values of local wisdom will be a common spirit in the education process at school.

Development of local wisdom-based education can be carried out through non-academic activities in the form of extracurricular. SDN Burengan 2 Kediri has extracurricular activities that support cultural preservation, for example, in the field of culture there is an extracurricular art of dance and karawitan, whereas in the field of religion there are extracurricular qasidah and Musabaqah Tilawatil Quran (MTQ). This extracurricular activity can be a means to recognize Kediri culture such as dance "kethek oleg" which is lifted from the legend of Asmarabangun and the magical goddess of kilisuci. This dance can be lifted into one type of dance that must be studied by students, so by learning it, students participate preserving Kediri typical dance.

In addition to the internal aspect, the opportunities for implementation of local wisdom-based education are also supported by the government through the governor's regulation number 19 of 2014, on the subject of regional languages as a mandatory local content. This is a form of East Java government support in particular to preserve local languages as a local cultural heritage. In addition, the potential of local wisdom-based education is also supported by curriculum payload, which is the 2013 curriculum that accommodates the introduction of local potentials, for example in basic competence 4.3 Social Science class IV which reads "presents the results of the identification of economic activities and its relationship with various fields of work and social and cultural life in the neighborhood until the province "of the basic competence shows that students are required to be able to demonstrate life, economy, social and culture primarily in the environment (Laila dan Saidah, 2016: 181).. This is a form of integration efforts to introduce local excellence in learning. In addition, in the basic competence of the Indonesian language class 1 in the skills aspect there is the language "Using the appropriate Indonesian vocabulary and assisted with the local language" this basic competence quotation indicates that in learning does not always have to use the Indonesian language, but may use the local language as a second language when learning Indonesian.

Local wisdom-based education has distinctive features that are different from other educational models. According to Ghufron, Budiningsih and Hayati (2017: 310) The characteristics of learning based on local cultural values include the first objective of learning is that students master the aspects that exist in the competencies that have been formulated and the values of characters contained therein. Second, learning activities are intended for facilitate students to achieve the competencies that have been formulated in accordance with the applicable curriculum while still promoting the development of the nation's character values. Third, the learning materials are organized in an integrated manner with the character values that will be developed. Fourth, the learning environment is naturally arranged, meaning that students are given the opportunity to gain a real learning experience in the community related to the noble values that develop in society. In accordance with that opinion, the program and learning activities that have been designed in SDN Burengan 2 Kediri has been in line with the model of education based on cultural values or local wisdom. If the concept of local wisdom-based education is designed more systematically by involving all relevant stakeholders, then it is very likely that local wisdom-based education can be implemented consistently in SDN Burengan 2.

### ***3.3. Obstacles Implementation Education based on local wisdom***

Implementation of local wisdom-based education should be designed in accordance with the needs of the school. Menurut Asmani (2012: 70), the process of implementing local wisdom-based education in the start of the establishment of an implementing team in charge of carefully designing all matters related to this program. Both partnership with village officials or community leaders, this is aimed at the effectiveness of the program, so that the program is really compiled according to the actual circumstances and needs.

Third, Preparing Software and Hardware. Software in the form of curriculum programs, and faculty, while the hardware in the form of facilities and infrastructure that become facilities to support the implementation of the program should be prepared neatly. Fourth, prepare Implementation Strategy. This program requires an appropriate implementation strategy, whether it is incorporated into activities in intracurricular or extracurricular. Fifth, conducting comparative studies on institutions that have successfully implemented the concept of education based on local wisdom. The next stage is looking for investors, opening markets, preparing skilled students, preparing home company and engaging the surrounding community.

Of all the processes that have been described, certainly not all steps can be applied at the elementary school level, because the concept of educational implementation based on local wisdom in primary schools is more to the effort of cultural recognition and characterization of local wisdom values. SDN Burengan 2, although it has integrated the values of local wisdom in its learning activities, but has not yet had a special team that is designing related to the implementation of local wisdom in the learning process. The special team in question is a team that members of the school both teachers and principals who work together with the school council, related agencies and leaders who are experts related to local wisdom contained in the city of Kediri. Determination of education policy based on local wisdom is of course not only be the authority of the school, but it is necessary to involve guardians, school committees and education offices. So it takes the similarity of views related to the urgency of education based on local wisdom. So far there has been no massive discussion related to the implementation of education based on local wisdom in SDN Burengan 2 Kediri City.

The involvement of community leaders and village officials requires continuous communication. The idea of implementing local wisdom education must be in line with the existing programs in the area where the school stands. So in need of time, energy and mind to continuously establish communication and cooperation with the relevant government officials. Also if the team consists of teachers who have teaching tasks at school, then this will further increase the burden of teacher performance, so need to look for solutions to keep the program running without disrupting the teaching and learning activities. Preparation of curriculum based on local wisdom is not necessarily made by the school, because it is related to the competence to be achieved by the students, it is necessary involvement and approval from the education office so that the curriculum does not overlap with the applicable curriculum standards. In addition it requires experts or professionals who can assist in the process of curriculum-based preparation of local wisdom. So schools have a clear curriculum direction in implementing local wisdom-based education.

To provide an initial overview of education-based education of local wisdom, a comparative study is needed to the institution that has implemented the education-based local wisdom. In the city of Kediri, there are no primary schools that have declared themselves to implement local wisdom-based education, so it is necessary to conduct a comparative study with schools outside the city of Kediri. Things that need to be taken into consideration when conducting comparative studies are the suitability of the intended school to the expected criteria, and the possibility of inter-school collaboration. Comparative study activities of course require time, energy and cost of its own budget, so this needs to be planned carefully by the school.

#### ***4. Conclusion***

SDN Burengan 2 is a school that has an annual program by integrating local wisdom values in school learning activities. The potential of implementation of education based on local wisdom is the existence of programs that can be a means of planting cultural values, such as the program of character and character cultivation, learning outside the classroom, inspiration classes, partnerships with school committees and parents, as well as extracurricular activities such as art of dance, karawitan, painting, and qasidah. In addition governor regulation number 19 of 2014 related to mandatory local content of the local language lessons to support the preservation of local cultural values which in this case is the Java language as the daily language of the people of Kediri. Obstacles of implementation of education based on local wisdom in SDN Burengan 2 Kediri City that is not there is a special team that make systematic concepts about education based

#### ***Appreciation***

This research is part of Beginner Lecture Research. The authors would like to thank the DPRM Dikti on the Beginner Lecturer Research grant in 2016. The researcher also thanked the Institute for Research and Community Service (LPPM) Universitas Nusantara PGRI Kediri who has provided consultation and information assistance. Acknowledgment of the researchers say to the Principal and the ranks of SDN Burengan 2 who have provided access to information and data to complete this research.

## Reference

- [1]. Alfian, Magdalia. 2013. "Potensi Kearifan Lokal Dalam Pembentukan Jati Diri dan Karakter Bangsa" *Prosiding The 5 thn ICSSSIS "Ethnicity and Globalization "* Yogyakarta 13-14 Juni 2013 diambil pada <https://icsssis.files.wordpress.com/2013/09/2013-01-33.pdf> pada tanggal 27 Juli 2017
- [2]. Asmani, Jamal Ma'mur. (2012). *Pendidikan berbasis keunggulan lokal*. Yogyakarta: DIVA Press.
- [3]. Herimanto dan Winarno. (2010). *Ilmu Sosial dan Budaya Dasar*. Jakarta: PT Bumi Aksara.
- [4]. Fajarini, Ulfah. 2014. "Peranan Kearifan Lokal Dalam Pendidikan Karakter" *Sosio Didaktika* Vol. 02 No.02 Diambil Pada <http://journal.uinjkt.ac.id/SOSIO-FITK/article/viewFile/1225/1093> pada tanggal 11 Juli 2017.
- [5]. Ghuftron Anik, Budiningsih C. Asri, Hidayati. 2017. "Pengembangan Pembelajaran Berbasis Nilai-Nilai Budaya Yogyakarta di Sekolah Dasar" *Jurnal Cakrawala Pendidikan* Th.XXXVI No.02 diambil dari <https://journal.uny.ac.id/index.php/cp/article/download/12449/pdf> pada tanggal 27 Juli 2017.
- [6]. Laila, Alfi dan Karima, Saidah. (2016). *Integration of The Value of Local Wisdom in Learning to Quality Culture School in SDN Burengan II Kediri. Proceeding International Conference on Elementary and Teacher Education (ICETE)* [lib.um.ac.id/wp-content/uploads/2016/12/proceeding-icete-2016.pdf](http://lib.um.ac.id/wp-content/uploads/2016/12/proceeding-icete-2016.pdf)
- [7]. Mannan M. Nur, Sopyan Achmad, Sunarno.2015. "Pengembangan Perangkat Pembelajaran Berbasis Kearifan Lokal Untuk Mengembangkan Karakter Positif Siswa" *Jurnal Inovasi Dan Pembelajaran Fisika* Vol.2 No.2 Diambil dari <http://ejournal.unsri.ac.id/index.php/jipf/article/download/2615/1363>. Pada tanggal 27 Juli 2017.
- [8]. Maryani Enok, Yani Ahmad. 2014. "Kearifan Masyarakat Sunda Dalam Memitigasi Bencana dan Aplikasinya Sebagai Sumber Pembelajaran IPS Berbasis Nilai." *Jurnal Penelitian Pendidikan* Vol.14 No.2 diambil dari <http://ejournal.upi.edu/index.php/JER/article/download/3111/2132>. Pada Tanggal 27 Juli 2017
- [9]. Moleong, Lexy J.. (2012). *Metodologi Penelitian Kualitatif*. Bandung: Remaja Rosdakarya
- [10]. Moleng. LJ. 2007. *Metodologi Penelitian Kualitatif*. Bandung: Remaja Rosdakarya.
- [11]. Mungmachon, Roikhwanphut. (2012). Knowledge and Local Wisdom: Community Treasure. *International Journal of Humanities and Social Science*.
- [12]. Nadlir.2014. "Urgensi Pembelajaran Berbasis Kearifan Lokal" *Jurnal Pendidikan Agama Islam* Vol.02 No 02 hlm.300-330 diambil Pada <http://jurnalpai.uinsby.ac.id/index.php/jurnalpai/article/download/33/33> pada tanggal 27 Juli 2017
- [13]. Peraturan Gubernur Nomor 19 Tahun 2014 Tentang Mata Pelajaran Bahasa Daerah Sebagai Muatan Lokal Wajib di Sekola/Madrasah Diambil dari [https://jdih.surabaya.go.id.>pergub\\_19](https://jdih.surabaya.go.id.>pergub_19)
- [14]. Prasetyo, Zuhdan K. (2013). Pembelajaran Sains Berbasis Kearifan Lokal. *Prosiding, Seminar Nasional Fisika dan Pendidikan Fisika*. Surakarta. FKIPUN
- [15]. Saidah, Karima. (2018). Implementasi Pendidikan Karakter melalui Pengenalan Nilai-Nilai
- [16]. Kearifan Lokal di SDN Burengan 2 Kota Kediri. *Jurnal Tarbiyatuna*, Vol. 2 No 1 hlm. 35-37.
- [17]. Situs Radio Andika FM. 2015. *Jaranan, Kesenian Kediri yang Mulai Terlupakan* di ambil pada <https://www.andikafm.com> pada tanggal 28 Juli 2017
- [18]. Setiyadi, Putut. (2012). "Pemahaman Kembali Local Wisdom Etnik Jawa dalam Tembang Macapat dan Pemanfaatannya sebagai Media Pendidikan Budi Pekerti Bangsa." *Magistra*. 79(24).
- [19]. Sugiyono. 2010. *Metode Penelitian Guru (Pendekatan Kuantitatif, Kualitatif, dan R&D)*. Bandung: Alfabeta

# The Portrait of Democracy and Local Culture in the Land of Kings (Recruitment Study of Elite, Natural Resources Management, Social Community, Conflict, and the Conservation of Local Culture of Hila)

**Ali Lating**

<sup>1</sup> Lecturer on a Course of Government Study, Social and Political Sciences Faculty.  
Muhammadiyah University of North Maluku  
Email : alilating@yahoo.com

**Abstract.** The development democracy at the local level can be seen not only from the process of reproducing new elites and playing the important role in local politics, but also from the role of local culture as a media to organize the work of local democracy. Democracy and local culture are strongly influenced by the norms and values that form the basis of the operation of democracy and culture process, values and norms that have been born together with the presence of community. As a community that already has the structure and system, either good governance or good community, those values and norms have become “The Best Way of Life” and guidance of action to manage the power relation between people, nature, and institutional structure that has been formed, as well as a capital to survive. This article is a small portrait of democracy and local culture on the aspects of elite recruitment (king), natural resource management, social community, conflict management and cultural preservation of local culture of Hila, which is important to know in order to understand the dynamics and complexity of Indonesia. By understanding the diversity of democracy and local cultures, we can improve those points base on the context and culture at the local level.

**Keywords:** *Democracy, Local Culture, Elite Recruitment*

## 1. Introduction

Consciously or unconsciously humans always nurture, foster and develop relationships between humans. In the framework of such efforts humans reside together - a place that can meet the needs of his life. Elements of circumstances and environments affect where a common place of residence is held. On the beach, deep into the hinterland, on the slopes, and on the mountain even on the water. From the perspective of psychology, human beings have some natural impulses, including the so-called social theorist, the impetus of segregation (separating) and the impulse of integration (submission). Social drive encourages people to always live with other people in a group. The encouragement of segregation encourages human beings to form groups based on the same or common traits and interests, the goal of segregation ultimately gives birth to a group that possesses various functions and controls certain aspects of people's lives. The impetus for integration is the individual or group encouraged to submit, obey and seek refuge in a person or a whole group. These three impulses resulted in the formation of a social institution, which at the which at the beginning of the primitive human life, is very simple. The formation of social institutions is accompanied by the presence of a person or a few people who lead, which gradually evolved into a government agency equipped with the power to maintain an orderly life.

Based on the impulse of nature above the person or group that is lead is sincerely obeyed by all that is laid, a pure obedience and mutual trust. Life together to build a house in a small group not only exist in Indonesia but also in other countries at the beginning<sup>1</sup>. This community / group is labeled Kampung (West Java), Negorij (Maluku), Wanua (Makassar). This group also has a culture that governs relationships between freedom and the environment<sup>2</sup>. The development of state

---

<sup>1</sup> Bayu Suryaningrat, 1985. *Pemerintahan Administrasi Desa Dan Kelurahan*. Aksara Baru, Jakarta. pp,11-12

<sup>2</sup> Sutarjo Kartohadikoesoemo, 1965, *Desa*, Penerbit Sumur Bandung. p, 10

administration in Indonesian society was present before the arrival of the Europeans . There are government institutions that basically have three levels, first national, second level district and third level Village . Burger's research results confirm the life of the people of Java in antiquity can be distinguished four stages of the king's first king, the two local leaders and the three heads of Village and the fourth mass or community Village<sup>3</sup> . The group also has a culture that governs relationships between independence and with its environment. The development of state administration in Indonesian society was present before the arrival of the Europeans. There are institutions of government which are basically three levels, first national, second level district and third level Village. Living together creates a living order that evolves into adat, which is adhered to unconditionally by all members of society. Adat is nothing but an unwritten law, from generation to generation since the ancestors of the law to the breaking of the action of the whole group. Each region in Indonesia has customs that govern and manage life together. The arrangement of the collective life arrangements covers the various aspects of life both aspects of government management (recruitment of kings as well as customary / cultural duties and functions), direct election of kings is a process of deepening democracy<sup>4</sup> (deepening democracy) for the community, where the community is involved in continuously administering or in government (king) elected for the next period. Even if viewed from procedural sperspektif, result leader through a democratic election mechanism. It takes place freely, honestly, fairly and minimally violence. Natural resource management based on local culture, aims to ensure the sustainability of production and better outcomes, social management to ensure comfort and order, conflict management, problem solving by prioritizing the genealogical aspects of the sustainability of kinship and cultural to ensure the existence of value order and harmonization among others.

## 2. Research Methodology

This research focuses on field research, therefore this research includes descriptive research that is; research by describing and describing a series of events, phenomena or facts relating to problems and research units in the field. The research results are emphasized on providing an objective picture of the true state of the object under investigation<sup>5</sup>. The date to described in this research is how the democratic process and local culture in the recruitment of local elites (king), natural resource management, conflict management and cultural preservation. conversation and the range of actions performed and supported by some documents and photos. Date collection procedure in the form of main date and supporting date. The main date are obtained from key informants such as traditional figures and public figures who understand about the local culture and the meaning contained in the culture. Instrument date collection in qualitative By using qualitative research methods indirectly researchers must go to the field to study the object of research studied in order to obtain the necessary data. The main date source in this research is the result of the (a) Observation Technique, interpreted as a systematic observation and recording of the phenomenon of the phenomenon being investigated<sup>6</sup>, (b) Documentation Technique, data collection technique defined as a written report of an event consisting of explanations and estimates of events, and written intentionally for store or forward information about the event. (c) .Technique interview, to know what is contained in the mind and heart of others, how the view of the world, that is things we can not know. The same definition is also explained more technically and broadly<sup>7</sup> by Moleong<sup>8</sup>. Conversation with a specific intention, a conversation conducted by two people I interviewer (interviewer) who asked questions and who interviewed (interviewed) which provides answers to questions. Three important approaches to be considered by an interviewer namely; Informal interviews, approaches using general guidelines for interviews and open standard interviews. Analysis date techniques include: date reduction, display and conclusion / ferivication

<sup>3</sup> Prof. Dr.D.H. Burger, 1949. *Strukturveranderinge in de Javaanesen samenleving*, Indonesia.N.V.Ugeveerij W. Van Hoeves. Gravanhego, p 289

<sup>4</sup> Cornelis Lay. 2006. *Pilkada Langsung Dan Pendalam Demokrasi*, Catatan Pengantar dalam "Dinner Lecture – KID, Jakarta, 21 November 2006. p,4-7

<sup>5</sup> Hadari Nawawi, 2005, "Metode Penelitian Bidang Sosial", Gadjah Mada University Press, p. 31.

<sup>6</sup> Sutrisno Hadi, 1986, "Metodologi Research," Fakultas Psikologi, UGM, Yogyakarta, p 136.

<sup>7</sup> Nasution,MA, 1992, "Metode Penelitian Naturalistik", Edisi I, Tarsito Bandung. p. 73

<sup>8</sup> Lexy J. Moleong, 1992, "Metodologi Penelitian Kualitatif," Remaja Rosda Karya, Bandung. pp. 135 – 136.

### **3. Theoretical Perspective**

#### **3.1. Democracy**

There are two approaches commonly used by experts when explaining the concept of democracy. That is the normative classical approach which is also known as the substantive approach and the minimalist empirical or procedural approach. The normative classical view, democracy is understood as the source of authority and purpose, while the minimalist empirical approach emphasizes the built-in political system (the growing democratic construction of space and time). The normative classical approach is more dominant in explaining the ideas and ideology of democracy substantively and generally defining democracy by the terms of the will of the people as a source of tools for achieving the common good. The minimalist empirical approach becomes the entrance in explaining democratic modeling. First, it is a perspective that refers to a political form where direct community involvement in government processes and policy reproduction (policy / rules). Second, the perspective that refers to how the mechanism of the decision-making process is implemented. The Second, the perspective that refers to how the mechanism of the decision-making process is implemented. The meaning of democracy is based more on the basic of a government that comes from the people, by the people and for the people rather than others.<sup>9</sup>

Robert A Dahl at least there are a number of impacts as a result of democracy, among others; avoiding tyranny of power, expressing human rights, public freedoms, self-determination, moral autonomy (individuals can express what autonomously wants), political equality<sup>10</sup> democracy of at least three requirements must be fulfilled which is the first individual in the society voter age adults) should be entitled to the right to determine their leader to derive from the principle of equal rights in democracy itself whose locus is on free and autonomous individuals. Second, effective participation, within the whole process of collective decision-making, the stage of determining the work agenda. Third, the Disclosure of Truth: At a predetermined time, for the necessity of a decision every citizen must have the opportunity and sufficient to make logical judgments in order to achieve the most desirable outcome. Fourth: The last control on the agenda: the public must have the exclusive power to determine the issues. which matter should and should not be decided through a process that meets the criteria of democratic criteria. Fifth Coverage: The public should include all adults in relation to the law except for temporary migrants<sup>11</sup>.

#### **3.2. Local Culture**

Local culture for local people is not merely a reality, but is fundamentally a fact of existence that shapes the history, culture, charm of personality and identity of his community. Local culture, therefore, should be read in the eyes of culture to explore all the ins and outs and dynamics or strategies - the community strategy to deal with and build a civilized life (Habitual). For local communities the composition, thoughts, content of appreciation or composition of local cultural values referred to our special. The reason, because it contains ethical values, spiritual and moral order, and the hidden ratio with validity and validity in the customary order. Local culture for its people, in essence, has very ideal and operative values. Ideally, because the local culture of the local community is The Best way of life or life view, which serves to guide and direct and control the private life and togetherness in a collective collegial indigenous Community. One of the regulative functions of local culture is to strengthen the unity and integrity of indigenous people's life, to maintain the survival of generations, to conduct social order (social order), every government and order of leadership, order of nature (natural order) which all focus on one purpose ie growth and development of indigenous people's in a stable existence order. Affirmative function, to discipline life and affirm the public image in the customary order Local culture has a value meaning that at the same time can arrange governance management. Local cultural values in the view of Prof Watloly include: (a). Developing Elegant Traditions In Decision Making: (b) Trusts between Communities and Governments: (c) No Accumulation of Wealth nor Powers for Personal Interests: (d) Become a Leader To Strengthen Fraternal Relationships: To be a leader is a means of creating an essential fraternal space between

---

<sup>9</sup>Suyatno, 2004. *Menjelajah Demokrasi*, Liebe Book, Yogyakarta. pp, 37-55

<sup>10</sup> Robert A. Dahl, 2001, *Perihal Demokrasi Menjelajahi Teori dan Praktik Demokrasi secara singkat*, versi terjemahan, penerbit Yayasan Obor Indonesia, Jakarta.

<sup>11</sup> Robert A. Dahl. 1985. *Dilema Demokrasi Pluralis*, Radar Jaya Offset. Jakarta. pp 10-11.

fellow. While operative (technical operational) as a guide action to direct the performance of the joint as a culture of life in building prosperity, happiness, and peace of life together with other human beings as well as others. Everything to continue a circulation of sustainability / sustainability in order to stay awake and productive from generation to generation.<sup>12</sup>

Various forms of local culture that lies in the archipelago shown in various customary entities. In the study of local politics in the form of the local culture can be traced in 3 domains, namely: First the realm of power related to the recruitment of local leaders, government management. Second. Environmental Management and Third Conflict Management Tradition of government management by promoting local values is found in various regions of Indonesia.<sup>13</sup>

## **4. Result and Discussion**

### **4.1. Art History**

The elit recruitment traditions, both related to the strategic elite within the governmental environment (Raja, Upu Hata, Soa Chief etc.) as well as religious leaders have a strong historical roots and begins with the presence of four prime. The presence of these four premiers also laid the foundations of governance that prevailed to this day. The early presence of the four primates lying on a hill called Paunusa or Uli Halawang hill provides a natural alliance as well that the life order of the group of people of this period has now earned the title of "Uli Halawang" Community. In addition to Uli Halawang country, there are three other countries namely Massapal, Sanalu and Wawane. In the structure and governance of the three countries are still obedient to a head of government who comes from the prime offspring or offspring Uli Halawang. In the customary structures of the countries that joined it (such as the mass country) have their own customs. According to the customary elders that the arrival of the country's arrival is as follows:

- The Wawane and Sanalu nations join the area where Uli Halawang community is located. The arrival of Sanalu country to join the prime in the land of Hila accompanied by the surrender of a mosque bucket and a treaty to lift the religious penghulu (lebe) to fill the void in the mosque / Benoa
- Massive Affairs in accordance with the agreement, they get a separate shelter from the land Uli Halawang called Upu Telu

Separate places or borders of Uli Halawang and Upu Telu areas are pronounced with "Solo Hila Loto Lua" meaning that the country of Hila is divided in two, especially in the implementation of adat. In this place is built laid a monument made of stone-shaped table on which placed shells or coolies bia. The moment as a symbol of the establishment of civilization, where in the place referred to the deliberation to start a customary work. The establishment of a monument in the land language called "Pile or Pale" (Pale or baileo) is owned also by Uli Halawang community. In the development both communities Uli Halawang and Upu Telu, each has a distinct character of the structure and custom structure, but in the behavior of social relations do not occur separation because the customary governance of the government given to the people of Hila as a whole.

### **4.2. Elite Recruitment (King)**

#### ***Mechanism and Selection process***

Process of the King's appointment in Hila land in its history experienced ups and downs. This is due to state intervention by issuing a number of policies that ultimately change the customary rules agreed upon. In accordance with the customary rules of the appointment of the king is carried out for generations and has no term limits. The king will be replaced if it has passed away, but this tenure changes when the enactment of Law of Number. 5 year 1979 ( old law of village) concerning the village, not only the tenure but also affecting the structure and functions of other customary institutions. The process of selecting the current king is done by referring to Law of Number. 6 Year 2014, ( new law of village) the preparation process is done by the formation of the election committee, then the King invites the whole soa to inform that the election process will be carried out, this

---

<sup>12</sup> Aholiab Watloly. 2006. Beberapa Sketrsa pemikiran Filosofis Dalam membangun Regulasi Kearifan Lokal Di Kancan Merebaknya Rasionalitas Modern,. Yogyakarta. pp.1-3

<sup>13</sup> Josep Riwokaho , Cornelis Lay Demokrasi Lokal 2010 “ Politik Desentralisasi dan Otonomi Daerah. Program Pasca Sarjana UGM Yogyakarta. pp, 1-5

information is then continued by the head of soa by conducting meetings at the level of soa by presenting all the children soa to discuss candidates to be submitted in the election later. Soa level meetings are at the same time a means of identifying feasibility both with respect to governmental knowledge but more importantly as well as traditional and religious tenure.

As known Hila State has four big soa namely:

1. Tita, representing communion of Masappal or Upu Telu society (called soa Upu Telu)
2. Toto represents the community community Uli Halawang the first descendant of Totohatu (called Soa Tomu)
3. Taapi, representing the community community Uli Halawang prime descendants Nusa Tapi Kapitan Hitu (called Soa Lating)
4. Pati, representing the community community Uli Halawang the prime descendant of Pati Tupa (called Soa Ollong)

As previously explained customarily only two soa have the right as command soa, other meetings at other levels of soa, in addition to the candidate's worthiness at the same time at the soa level also discuss the vote support that will be given to candidates in the election later.<sup>14</sup> Contestation in the election of the king as eligible as the election, each candidate campaigning both open and dialogue until the election process is done.

### ***King of Inauguration***

As the head of government who will carry out government duties, after the election, the king will be sworn in by the regent representing the district government. Swordsmanship and swearing is done in the sabua<sup>15</sup>, inauguration done by the head of the region is usually called the national inauguration. After the national inauguration is completed, the indigenous inauguration takes place in Baileo. The customary inauguration was done by Upu Hata. The indigenous inauguration process is marked by the crown prince's usage followed by taking the customary oath. In the process of inauguration done in two ways that is customary and national. The indigenous inauguration takes place first in Baileo / pale of indigenous custom made by three prime namely Nusa Tapi, Prime Totohatu (Tomu Nusa Huul) and prime Tomu Hitu Messeng. Inauguration process is also attended by all kings in the good peninsula Leihitu, Salahutu and West Leihitu. While the inauguration was formally done by the regent in the house of the elected king.

### ***Function of Customary Institution***

#### ***King / Sultan***

Genealogical the right to occupy the position of head of government / king, given to soa parentah / command in this case Soa Taapi (Lating Nustapi) and Soa Pati Tupa (Ollong). The king in the adat structure carries out two functions other than as head of government, the King is also the customary head. As the head of government, the King performs the functions of government as mandated in the legislation of law (Law Number.6 Year 2014) on the authority based on the rights to origins and other authorities laid down in the law. The king emphatically carries out the functions of government, development, empowerment and social community. Whereas as the head of Adat, the King holds Adat functions, among others, responsible for the implementation of adat in the country, but also the king of socially responsible and judicial function (judge peace) in the country. In this dimension, the King is not only of heredity, but a king must also have a good knowledge of governmental knowledge, customary law and religious qualities. The philosophy of King's power lies in three important functions:

- 1) Function of Protection: The king has a protective function especially protecting the customary order and its citizens from threats both physically and non physically, because the community as a whole is a geonology that form Negeri Hila

---

<sup>14</sup> Interview with Mr. Sahabat Laisow. He is one of the indigenous leaders of Hila, who has experience in the implementation of customs. Mastery of customary governance is obtained from generation to generation and until now he is still entrusted to lead the customary procession in the field of governance, conflict resolution and cultural organization.

<sup>15</sup> Sabua, is a place to hold inauguration and take the oath. Sabua is usually done in front of the old house where the king's residence is chosen. After the inauguration proceeded with the entertainment event as the end of the process of the political constitution

- 2) Peace Function: The function of the peacekeepers in addition to ensuring security and order in the neeri, the king must also be able to solve various problems that arise in the community whether it is related to social conflict between citizens, civil and criminal cases. Problem solving puts the peace way that the ancestors of Hila have agreed upon. Although lately the way in some aspects does not solve the problem so that some people choose the formal path to solve the problem.
- 3) Sustainability Function: This function is run by the king to ensure that his people live safely and peacefully. At this level the King is not always in the office but at certain times the King must conduct friendship between citizens.

#### ***Ela Amang or Head Soa***

Ela amang is a place that structurally represents the community of several eyes of the house or knife tau which then joined and called soa. Implementation of custom functions that are in the soa in society Uli Hahalawang custom structures are handled by the head of soa as a representative of the house tau. One of the strategic roles of the soa chief is in addition to being the head of the soa chief at the same time as a member of the state's sanity (BPD) which carries out the articulation and aggregation functions of interests of both customary interests and interests related to government policy. The Head of Sao is chosen by deliberation by observing several criteria such as the age factor, the ability to build social relationships among children soa etc. In addition to performing the aggregation function and articulation of the existence of soa as the most important community representatives is to carry out its functions as mandated in Law No. 6 of 2014 about the Village: Discussing and agreeing on the draft of village regulations with the village head, accommodating and channeling the aspirations of the village community and monitoring the performance of the village head. In this context, the existence of saniri members is very strategic, because it helps determine the future of Hila.

#### ***Ela Ume Haha (Assistant King of the Field of Religion)***

Ela Ume Haha is an assistant king in the spiritual field who focuses on benoa<sup>16</sup>. The role of Ela Ume Haha is very strategic especially in the recruitment of positions, among others: the position of artisans, penghulu religion (lebe), and internal Ela Ume Haha own when there is vacancy. Ela Ume Haha consists of representatives from some tau (marga) among others:

- a. Tatisina with the title of Talauke
- b. Kapitanhitu with the title Sine Wanepessy
- c. Tomu with the title Uhe Tomu
- d. Mahu with the title of Tuhe Mahu
- e. Hakia with the title of Aki Hali

The process of appointment of strategic positions in the mosque is done in stages with the following mechanism:

- Uma Haha Ela deliberation with other positions
- The results of the deliberations are conveyed to the king / sultan to obtain approval for the adjustment of the position (at this stage no one has been nominated, this mechanism in the soil language is called "Pasa'a Soa" meaning giving up suggestions / suggestions).

If the advice of Ela Ume Haha has called the name of the candidate and approved by the King, then the king's order that the proposed person be confirmed to occupy the position referred to. The King's inauguration order in the land language is called "Soa Ka'a, Soa Kulu" and subsequently submitted to Uli Halawang and Upu Telu (community of Hila country in Benoa before preaching and Friday prayers) Ela Ume Haha performs the following functions:

1. Manejerial functions: managerial functions, among others, regulate matters relating to the equipment mosque.
2. Coordination Function: Coordinate with other parties such as kings, upu hata, builders, related religious ritual activities.
3. Development Function: in addition to development in the form of addition, in addition to repairing a number of parts of the damaged mosque building.

---

<sup>16</sup> *Benoa* means mosque. Benoa is the land language used by the ancestors, although the word mosque is present along with the entry of Islam spread by traders from Gujarat.

4. Lebe Lifting Function (Penghulu Agama), Pengangkatan lebe<sup>17</sup> done customarily, which begins with a ritual appearance of shadow in the mosque. This ritual is usually performed between 1 to 3 months. This activity is very sacred because the preparation of a person who will become a penghulu must get approval from all his ancestors either from the geonology of his father and mother<sup>18</sup>. In addition to lifting the lebe Ela Ume Haha also lifted the builders who amounted to 12 people or in the language of land called tukang husa lua. Among others :

#### Marga Function

- 1) Ella / Ollong.(Great Tukang) Coordinate the implementation of the work, has the authority to determine the time of execution of work
- 2) Waling / Launuru Guides Provide consideration to the ella and Raja in decision-making related to the construction of the mosque.
- 3) Tukang Lating Plumber Reading Iir meir jawi or kapata in traditional ceremonies
- 4) Tukang Tomu Delivering information related to meetings etc.
- 5) Ollong Handicrafts Provide consideration regarding the things that need to be improved on the construction of the mosque, then dilaorkan to Ella workers
- 6) Ulema Workers Provide consideration to Ella's engineers regarding things that need to be improved in the construction of the mosque
- 7) Uluelang Penguin Performs a supervisory function in order to implement the development in accordance with customary rules Carpenters
- 8) Lating Delivering decisions to the community regarding Development
- 9) Taneu As a peacemaker
- 10) Mahu Mahu As an architect in the construction, Tu Mahu has the right to put a plumb line
- 11) Assawala Toward Assist the hose in the execution of work
- 12) Selang. Hose holder of carpentry tools

Their respective roles and responsibilities must be coordinated<sup>17</sup> through deliberation to carry out the physical work of the mosque and the overall work of the artist's decisions are conveyed to Ela Ume Haha to be forwarded to the King / Sultan.

#### ***Natural Resources Management***

##### ***Sasi***

The natural resource management aspect is one of the most important dimensions. Natural resource regulation aims to ensure the sustainability of resources, both onshore and coastal. Public Communities in Peninsula Leihitu, has a tradition of managing natural resources that lasted for generations and maintained until now. Tradition sasi for example, is believed to be one way not only to guarantee optimal results but at the same time can arrange fruit season regularly. Some advantages that can be obtained from the sasi:

##### 1. Source of Negeri Revenue

In addition to getting a source of income from the Village Fund, Village Fund Allocation and other sources of income, sasi is also one way to earn revenue. Plant contract mechanisms such as nutmeg and coconut in the area, price and timeframe agreed between the holder of the sasi with the state government as well as traditional institutions such as mosques and churches<sup>19</sup> will certainly contribute significant revenue. Average income earned from the management of Rp. 20 to 30 million

---

<sup>17</sup> *Lebe* is the language of the land pinned to the penghulu of Imam, Modim, Marbut, and Khatib. The lebes are usually appointed from the customary clan to occupy the position in the lebe (mosque). The penghulu usually taken from the descendants of men.

<sup>18</sup> Interview of former Ulema man. (alm). Muhammad Ulema. In the tradition of appointment of the lebe Ela Ume Haha must be patient because the process of appointment of the lebe must be prepared carefully. Because those who will be appointed at first have not been so deep in science lebe so it needs to be prepared right by the man. In another aspect the title of the lebe that is carried will end if the person resigns, does something disgraceful or dies.

<sup>19</sup> Although the management of the sasi as a whole is managed by the government of the country, but in the division there is also a sasi on behalf of mosque and church, where the crop is divided for instance for nutmeg plants for the country, while coconut for church or vice versa.

for one season sasi<sup>20</sup>. For the holder of the sasi, the benefits to be gained are also very satisfactory if the taxes given by farmers in accordance with the rules of sasi.<sup>21</sup>

## 2. Trust between Government and Society

The community strongly believes its forest products to the government through the national authority<sup>22</sup>, the threat of theft is one of the most disturbing threats. With intensive control of the trustworthy the crops will be well preserved. Forest area and the number of personnel of authority determine the safety of the results. Similarly, the community will not believe in the government, if the expected forest product is not optimal due to weak supervision.

## 3. Collective Discipline.

Sasi also teaches a collective discipline between the government and its people. Obeying the rules of sasi is very important. If there are individuals or groups of people who deliberately violate the rules that have been agreed upon then will be subject to sanctions. This sanction aims to provide a deterrent effect to the community not to do things - things that are prohibited when sasi is in progress.

### ***Process and Sasi Mechanism***

Sasi usually takes place from government initiatives or suggestions from the community, which feel important because of rampant theft or uneven harvest. If the government initiative of the country, then at the same time the government the country will invite the whole community to the country meeting in discussing the tender mechanism to the public for those interested in holding sasi, as well as the limit of land that has been decided by the country. As in the tender process conducted by explaining to the public land area as well as the highest set price standards. After that, the state government offers to the public. After the agreement between the holder of the sasi and the government then complete the administration and set the time sasi begins.

### **Supervision Sasi**

In order for sasi to run well, need effective supervision. The government formed to form forest police or in the customary language known as kewang. Kewang performs its task of controlling the forest according to the specified schedule. Control / supervision to avoid theft but also to know the planting of nutmeg ready to harvested before the opening time begins. If there is a crop of nutmegs to harvested first, it will inform the owner to immediately reap the harvest. However, if the owner who knows the plants will harvested first then the owner contacted the kewang to punch directly the harvested crops. Once it confirmed the number of crops harvested, the owner contacts the local government to issue a harvest permit. Harvest permits issued are usually very limited between 1 to 3 days. Unlike the permit as the opening sasi which lasted less than two weeks.

### **Sanction**

Before the sanctions apply, the proceedings of the perpetrators of the perpetrators by presenting the authorities and witnesses. If proven guilty concerned given the choice of sanctions in the form of fines, social and criminal sanctions. Fines depend on the amount of stolen staple products, such as nutmeg, 1 piece of nutmeg stolen by a fine of Rp 10,000. /fruit. If not able, then the relevant social sanctions imposed paraded around the country while chanting errors committed. Social Sanctions is usually done at night. If not willing / able then the concerned handed over to the police for follow-up with the formal law (KUHP)

### ***Community Social Management***

Environmental safety and order is one of the most important aspects. The meaning of environmental security is none other than an effort to protect the public from acts of violence, theft,

---

<sup>20</sup> The contract of sasi shall be conducted subject to the customary rules issued by the state. Vulnerable time of contract is usually 2 to 3 years for a single period. Opening until closing sasi depends on the rules of the household saniri. The arrangement of the sasi is very liquid because at the same time there are plants whose harvest time before sasi is opened, the bias of the crop owners to be harvested must apply for harvest permission to the government of the country.

<sup>21</sup> Customs granting mechanism in accordance with custom rules that have been determined for example when harvesting nutmeg and coconut for 1000 seeds of coconut / coconut is subject to excise duty 100 buji and delivered directly to the holder of sasi. Untuk sasi held by the state government and religious institutions, excise submitted to the represented village government by one of the state government apparatus.

<sup>22</sup> Kewang is formed by the government of the country whose job is to control over the cultivated paste. Control is done in accordance with the schedule that has been made by the government of the country. Kewang is paid by the government of the country.

gambling and alcoholic beverages and illegal drugs. As a preventive measure, the government formed a team of youth leaders as an important part in supervising community members and groups who want to take actions that damage the environment, especially social environment. In practice, in case of violation, members of the community or groups submitted to the government for trial. The government always puts forward custom sanctions rather formal sanctions, the argument because the offender is none other than the citizens who are likely also close family relationships so it is very embarrassing if his brother is given criminal sanctions

Customary sanctions are running around the country while shouting errors committed and invite people not to do the same. The deterrent effect of the sanctions is not expected to happen again in the future. Customary sanctions for all citizens of the country as well as those from abroad Hila. This moral verdict is very firm and usually done during the day. Like violation of liquor both the perpetrator and the seller the same sanctions. Social Sanction is one form of sanction given to the members of the community which resulted in the violation. In addition to social sanctions, the previous state government with the community has agreed to other sanctions in the form of criminal sanctions if social sanctions are not accepted by the perpetrators. Criminal sanctions will also be imposed on the perpetrators if the person has escaped or ignored the call from the country.

### ***Conflict Management***

The people of Hila and jazera leihitu countries have adopted tradition of conflict resolution from their ancestors until now still preserved, although in some countries tradition of conflict resolution is becoming extinct. Tradition of conflict resolution is less attention because it influenced by a number of factors, among others:

1. The lack of socialization of indigenous figures related to the culture, this needs a concern for the future, especially for customary traditional leaders because socialization at the same time is the process of transfer of understanding to the new generation of children of the country so even though it takes place orally but can knowledge for next generation.
2. Unavailability of written documents inherited by the ancestors. In fact, almost certainly no single document that until now can read or stored either in old homes or by traditional leaders. Oral tradition is still one of the important instruments in narrating the history.
3. Changes in understanding function of the soil from the beginning actually the land is not only meaningful as a space to plant crops that serve for survival, but at the same time actually the land also has a philosophical meaning is to unite the bones that spread. But now function of the soil has distorted, function of the soil then more on orientation of the material because of the impetus needs and limitations of living space. Land became one of the most effective instruments of transactions to gain resources both money and services. In this dimension kinship values based on genealogy become neglected. The impact of the genealogy relation be tenuous, and even in a certain dimension gave birth to internal family conflict. Conflict resolution puts forward formal institutions such as courts or police and ignores customary institutions.

The process of settling land disputes customarily owned by the people of Hila country in its history once had a very sacred settlement model, which the parties to the dispute will presented in one of the forums attended by traditional leaders, religion and those who disputed. This settlement tradition has buried presence of state settlement through formal mechanisms. Although extinct, tradition of conflict resolution in Hila State still continues to use customary tradition accordance with function of village government (king). which not only organizes its government function but also performs customary functions as a reconciliation judge. In carrying out function, if there is a land dispute then the king invites the parties to the dispute, in the settlement process, all parties are given opportunity to convey the reasons and proof of ownership. In addition, witnesses from each party are given opportunity to present their testimony. After listening to the witnesses the king then made decision about the ownership rights of the disputed object. For those who disagree with the King's decision, please forwarded to the formal dispensation mechanism.

### ***Renovation of Traditional House***

As a country that has a customary tradition that is still and well maintained, preservation of the customary order either in the form of physical buildings such as old and non physical buildings in the

form of dance<sup>23</sup>, land chanting,<sup>24</sup> marriage procession and a sense of togetherness when one of the citizens who experienced the disaster. As is known in the land of Hila there are some tau house that has an old house as a gathering place for a large family of the house tau<sup>25</sup>. Existence of tau house in indigenous people of Hila is very important, because as well as gathering place for all the big families at a certain customary moment, the old house is also a place to solve various problems before the problem reaches the party above (government and police). In order to keep the custom-house well maintained, renovation activities tau house responsibility of the children's grandchildren family home tau. Tau house renovation activities usually begin with renovation committee, then the committee works to prepare all renovation activities from the beginning until the renovation is complete. Every stage of renovation is always accompanied by traditional rituals both dance and singing.

This renovation activity also presents local government officials both district and province. Aspects of traditional house renovation philosophy is not only on the physical aspects of the old house renovation, but the most important thing is to strengthen the relationship between children and grandchildren both genealogical relationship from the mother or father. In this dimension, it can be seen that renovation of traditional house is not only owned by the family only, but owned by all the children of the grandchildren of the country, because of the blood relation relationship that almost covers all the people in Hila State. In addition to the old house Selang, within the last seven years, the people of Hila country managed to renovate a number of tau houses, among others: Pelatimu Old House, Mahu Old House, Old House Lating Nustafi and Hatala Old House.

#### **Maatenu (Cakalele Dance)**

Cakalele dance is one of the traditional dances owned by the country on the island of Ambon and Maluku in general. The cakalele dance in the local language is known as maatenu. Cakalele dance is one of the dances that are often performed at indigenous traditional ceremony in the country for example: The event of the king's inauguration or renovation of the house, maatenu dance is also staged reception of the guests who make a working visit to the Land of Hila. For reception of the guests maatenu dance is only done by soa Totohatu ie clan ely, mony and tomu and soa uku telu represented the clan of the house tau sopaliu (kapitan malesi). While in the traditional event such inauguration of the king, renovation of custom-house maatenu involving all the grandchildren of the country hila.<sup>26</sup>

Maatenu begins with preparing all the equipment in the form of clothes, machetes and salawaku whose activities concentrated in both old houses. Before maatenu begins the traditional elders give directions and beg the prayer of Allah SWT and the ancestors approval to maatenu can run well. In addition to the people performing the maatenu dance, one of the most important parts of the maatenu dance is the carrier tifa and the blower (tahuli)<sup>27</sup>. In the customary structure, the tau house that the authority to hit the drums and blow the shool is the Launuru Elai clan. This done for generations. Before the maatenu event begins as usual the children and grandchildren Launuru Elai do the previous exercise with guidance of indigenous parents, this is too unsure that during the implementation will not happen errors - errors that can cut the value maatenu. Before the maatenu event starts all the

---

<sup>23</sup> *Maatenu* (cakalele) is usually done on customary way. Maatenu is only done by the clan which is customary to have the Authority. Two genera are given the Authority to maatenu namely sopaliu and Elly (Tomu nusa huul). Similarly, who the authority to beat and blow the coolie bia (snail) in cakalele dance namely Launuru elai

<sup>24</sup> Song song: is an original song that comes from an ancestor sung in the native language. In the land of hila there are a number of singing and dancing which until today still on guard well, both dance and nyayian only done at certain event. The singing of Sairere Hituo and Manu distance are two examples of Hila's ancestral singing

<sup>25</sup> *Rumah Tau* is another name of the clan or clan. Marga Lating such as: is a label that carried by personal lineage from the party of Father (male)

<sup>26</sup> Interview with Mr. Zulkarnaen Ely One of the successors of maatenu dance from ely descent (tomu nusa huul). Maatenu dance according to him needs to maintained because it is one of the most important asset especially related to the cultural sustainability of the people of Hila country. Maatenu also teaches togetherness, unity and obedience to leaders.

<sup>27</sup> *Tahuli* is another name of a large shellfish and when blown it will produce a loud enough sound. The thrill of the sound believed to cause the effect of magic accompanied by possessed by the maatenu and people who have strong traditional relationships. This will take place until there is a customary figure who stops the possession.

people on duty hit the tifa or blow first collected in Launuru old house to the preparation as well as request approval from the ancestors to the process maatenu can run well. Next the entourage to the house tau to pick up people who will do maatenu and then do with maatenu to activities or events customary held.

#### 4. Conclusion

- 1) Portrait of democracy in the election process of the State élite (Raja) directly, based on local culture that is highly respected and appreciated. Procedural mechanisms based on formal rules, but still putting cultural-based requirements into a very important part because with the cultural norms, honesty, justice, togetherness and brotherhood become the basic capital in guarding the democratic process that ultimately the leading élite (Raja) the selected ones have a proven capacity, especially the understanding of adat, culture, religion and leadership as guidance in managing power.
- 2) Natural resource management that promotes local culture, has a positive impact on the sustainability and quality of the results. The substantive local value of the management model is to make sure presence of collective discipline against commonly agreed rules. High confidence in the government apparatus of the country as the executor and the certainty of production of agricultural products evenly, and protection of good Resources
- 3) The ensuring of security and order in society is very important. Existence of sanctions based on strong and clear local culture against the violators, provides a positive learning to other citizens more wise in action. Prioritizing geo-logical relations, settlement of violations puts forward the choice of cultural settlement without overriding formal legal aspects. Formal law do when cultural settlement does not find common ground.
- 4) Resolving conflicts by promoting cultural aspects, placing the path of peace as the settlement mechanism. As a judge, the king plays an important role in resolving the problem but if the conflicting party feels aggrieved, it is welcome to take legal action.
- 5) Cultural preservation realized with maintenance of cultural assets in the form of old houses and art. Renovation of traditional houses has meaning as a medium to strengthen kinship ties in genealogical and fraternal relationships for the society.

#### References

- [1]. Aholiab Watloly. 2006. Beberapa Sketrsa pemikiran Filosofis Dalam membangun Regulasi Kearifan Lokal Di Kancan Merbaknya Rasionalitas Modern,. Yogyakarta. pp.1-3
- [2]. Burger.D.H.1949. Structuurveranderinge in de Javaansen samenleving, Indonesia.N.V.Ugeveverij W.Van Hoeves. Gravanhego, p 289
- [3]. Bayu Suryaningrat, 1985. Pemerintahan Administrasi Desa Dan Kelurahan. Aksara Baru, Jakarta. pp,11-12
- [4]. Cornelis Lay. 2006. Pilkada Langsung Dan Pendalam Demokrasi, Catatan Pengantar dalam Dinner Lecture – KID, Jakarta, 21 November 2006. p,4-7
- [5]. Hadari Nawawi, 2005, Metode Penelitian Bidang Sosial, Gadjah Mada University Press, p. 31.
- [6]. Josep Riwokaho , Cornelis Lay Demokrasi Lokal 2010 “ Politik Desentralisasi dan Otonomi Daerah. Program Pasca Sarjana UGM Yogyakarta. pp, 1-5
- [7]. Lexy J. Moleong, 1992, ”Metodologi Penelitian Kualitatif,” Remaja Rosda Karya, Bandung. pp. 135 – 136.
- [8]. Nasution, MA, 1992, ”Metode Penelitian Naturalistik”, Edisi I, Tarsito Bandung. p. 73
- [9]. Robert A.Dahl, 2001, Perihal Demokrasi Menjelajahi Teori dan Praktik Demokrasi secara singkat, versi terjemahan, penerbit Yayasan Obor Indonesia, Jakarta.
- [10]. Robert A.Dahl. 1985. Dilema Demokrasi Pluralis, Radar Jaya Offset. Jakarta. pp 10-11
- [11]. Sutarjo Kartohadikoesoemo, 1965, Desa, Penerbit Sumur Bandung. p, 10
- [12]. Suyatno, 2004. Menjelajah Demokrasi, Liebe Book, Yogyakarta. pp, 37-55
- [13]. Sutrisno Hadi, 1986, ”Metodologi Research,” Fakultas Psikologi, UGM, Yogyakarta, p 136.

# Effectiveness of use of Ovitrap to Detect Existence of *Aedes aegypti* Vector in Ternate City

Amalan Tomia<sup>1</sup>, Upik Kesumawati Hadi<sup>2</sup>, Susi Soviana<sup>2</sup>, Elok Budi Retnani<sup>2</sup>

<sup>1</sup> Post Graduate Student of Doctoral Program Parasitology and Medical Entomology, Bogor Agricultural University, Dramaga-Bogor Indonesia

<sup>1</sup> Muhammadiyah North Maluku University, Jl.KH. Ahmad Dahlan No.100, Sasa village, District of South Ternate, Ternate City ; Email: [alga\\_tte@yahoo.co.id](mailto:alga_tte@yahoo.co.id)

<sup>2</sup> Division of Parasitology and Medical Entomology, Faculty of Veterinary Medicine – Bogor Agricultural University, Dramaga-Bogor Indonesia. Jl Agatis Kampus IPB Darmaga, Bogor, 16680; Tel/Fax: +622518421784; Email: [upikke@gmail.com](mailto:upikke@gmail.com)

**Abstract.** Ovitrap is a tool used to detect mosquito manifestations to new areas that have previously been controlled. The egg survey activity by installing an ovitrap is considered very effective to detect the presence of *Ae. aegypti* mosquitoes in an area. This research is to know the effectiveness of ovitrap utilization to monitor the presence of DF vector in Ternate City. The results of egg trap survey, found in 20 urban villages surveyed positive *Ae. aegypti* eggs. The positive ovitrap of the egg is the ovitrap installed inside the house. Based on the results of ovitrap index, the average IO score is in the 20% category range  $\leq IO < 40\%$  (moderate) is in 18 kelurahan and IO category  $\geq 40\%$  (high) is in two urban villages. IO in Ternate is at level 3 and level 4 which is moderate and high category.

**Keywords:** Ovitrap, *Aedes aegypti*, Ternate City

## 1. Introduction

Dengue Fever (DF) is a disease caused by dengue virus classified as Arthropod-Borne Virus, Flavivirus genus, and Flaviviridae family. DF is transmitted through mosquito bites from *Aedes* genus, especially *Aedes aegypti* (Kemenkes RI 2016<sup>a</sup>). Dengue fever is common in children, particularly in densely populated cities. DHF is a systemic virus infection transmitted by *Aedes* spp mosquitoes to men. It is estimated that there are 390 millions of dengue infections each year worldwide (Bhatt et al., 2013).

Kementerian Kesehatan RI (2016)<sup>b</sup> recorded the number of DF patients in Indonesia from January to February 2016 reached 8,487 people with the number of deaths up to 108. The highest number of dengue fever in Indonesia for children at the age of 5-14 years reached 43.44%; while for the age of 15-44 years, it reached 33.25%. In varied tropical and subtropical areas, DHF is an endemic disease occurring throughout the year, especially during the wet season in which it becomes the optimal conditions for mosquitoes to breed. Occasionally, a large number of people will get infected in a short time (CDC 2010).

*Ae. aegypti* mosquitoes are known as DF. The overcome of DF is still very dependent on the attempt to control vectors in order to break the chain of DF transmission. Attempts are normally taken by using insecticides to control adult mosquitoes; however, to control larvae by using larvicides is ineffective. There are various vector observation methods including surveys on eggs, larvae, and mosquitos. Monitoring activity by installing ovitrap is considered to be highly effective in detecting the presence of *Aedes* sp mosquitoes in an area and even at low levels.

Ovitrap have advantages in generating more specific, economical and sensitive monitoring data than the manual/traditional surveying; furthermore, they can help in controlling dengue vectors. Teng (2001), in his research, suggests that the use of egg trap (ovitrap) to control *Aedes* has been successfully performed in Singapore by installing 2,000 ovitraps in dengue endemic areas (WHO 2005). In addition, LO field testing in Brazil can significantly reduce the density of *Ae. aegypti* (container index) of larvae and pupa (Perich et al., 2003). Cruz et al. (2008) conducted an ovitrap installation at five hospitals in Manila to measure the density of *Aedes* eggs and yielded LO by 0.0-48. Meanwhile, Surendran et al. (2007), in his research in Sri Lanka, found that 3,075 *Ae. aegypti* and

2,665 *Ae. albopictus* were trapped in ovitraps installed outside as well as 2,528 *Ae. aegypti* and 2,002 *Ae. albopictus* were trapped in ovitraps installed inside the houses.

The positive percentage of Ovitrap informed the *Aedes* mosquito exposure level, while the total amount of eggs estimated the population of adult female mosquitoes (WHO 2005, Morato 2005). Ovitrap is also used to detect the presence of *Ae. aegypti* and *Ae. albopictus* in which the population density is low and larvae surveys are mostly unproductive. Ovitrap can be used to evaluate the success of vector control and estimate the population density of mosquitoes. Ovitrap surveillance can be used to predict the incidence of dengue fever, particularly in areas with low *Aedes* infection, and it has been recommended as the control tool in overcoming DF (Focks 2003).

An effort made by Ternate City Health Office to control the dengue vectors is by using insecticide. However, the results have not been effective in controlling the DF vector. As an alternative to the efforts of preventing DF is by the installing ovitrap. This tool has not been popular among public and has not been widely used as an effort to control the population of *Ae. aegypti* in Ternate. This research aims to analyze the utilization of ovitrap as an alternative to control DHF vector and to detect the indication of DF vectors in Ternate City.

## 2. Materials and Method

### 2.1. Research Location

This research was conducted in Ternate, North Maluku. The determined sample points were 20 urban villages out of 4 sub-districts in Ternate City (South Ternate, Central Ternate, North Ternate, and Ternate Island sub-districts).

### 2.2. The collection of *Aedes sp* eggs by using Ovitrap

The number of ovitraps used in this study was 400 installed in 20 urban villages distributed in over four sub-districts in Ternate City. In each village, five houses were randomly selected, especially in densely populated houses. Four ovitraps were installed in each house; so that each village had 20 ovitraps. The installation of ovitraps was conducted for five days; then they were uninstalled to examine the positive or non-positive ovitraps which then calculated by using ovitrap index (IO).

### 2.3. Research Data Analysis

#### 2.3.1. The Measurement of Ovitrap Index

The results of egg collection using ovitraps were then calculated by ovitrap index (IO) by using the following formula:

$$IO = \frac{\text{The amount of positive ovitrap}}{\text{The amount of installed ovitrap}} \times 100\%$$

Determination of the criteria of ovitrap index was in accordance with FEDH Hongkong 2006 (Wong et al. 2007; Putpitarsari et al., 2012) (Table 1):

**Tabel 1.** Index Ovitrap

<i>Index Ovitrap</i>	<b>Score</b>	<b>Criteria</b>
Level 1 : IO < 5%	1	very low
Level 2 : 5% ≤ IO < 20%	2	low
Level 3 : 20 % ≤ IO < 40%	3	moderate
Level 4 : IO ≥ 40%	4	high

## 3. Results and Discussions

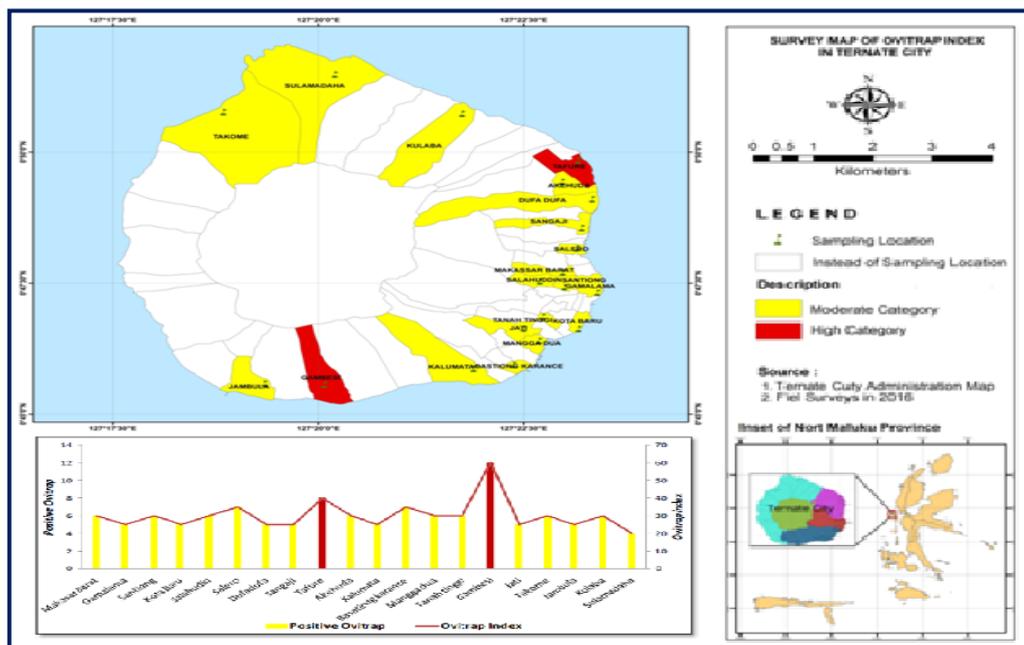
### 3.1. The Egg Traps of *Aedes aegypti* Mosquitoes

The research results show that from the egg traps identified in 20 villages (20 colonies), the mosquitoes were positive *Ae. aegypti*; and there was no indication of other mosquito species. This is because the ovitraps in this research with eggs with positive *Ae. aegypti* came from the ones installed inside the house, while eggs were not evident in the ovitraps installed outside the house (not positive). The results of ovitrap use research conducted on 20 urban villages in Ternate City can be seen in table 2 and figure 1.

**Table 2.** Positive ovitrap, the number of eggs and ovitrap index level category in Ternate

No	Districts	$\Sigma$ Ovitrap	Ovitrap positive	$\Sigma$ eggs	Index ovitrap	Level	category
1	Makasar Barat	20	6	123	30	Level 3	moderate
2	Gamalama	20	5	102	25	Level 3	moderate
3	Santiong	20	6	112	30	Level 3	moderate
4	Kota Baru	20	5	109	25	Level 3	moderate
5	Salahudin	20	6	122	30	Level 3	moderate
6	Salero	20	7	121	35	Level 3	moderate
7	Dufadufa	20	5	112	25	Level 3	moderate
8	Sangaji	20	5	120	25	Level 3	moderate
9	Tafure	20	8	132	40	Level 4	high
10	Akehuda	20	6	117	30	Level 3	moderate
11	Kalumata	20	5	115	25	Level 3	moderate
12	Bastiong Karance	20	7	124	35	Level 3	moderate
13	Mangga dua	20	6	121	30	Level 3	moderate
14	Tanah tinggi	20	6	120	30	Level 3	moderate
15	Gambesi	20	12	257	60	Level 4	high
16	Jati	20	5	90	25	Level 3	moderate
17	Takome	20	6	121	30	Level 3	moderate
18	Jambula	20	5	97	25	Level 3	moderate
19	Kulaba	20	6	100	30	Level 3	moderate
20	Sulamadaha	20	4	87	20	Level 3	moderate
<b>Jumlah</b>		<b>400</b>	<b>121</b>	<b>2402</b>			

Based on the results in Table 2, the number of *Ae. aegypti* eggs from 20 administrative villages reached up to 2,402 eggs. The highest number of *Ae. aegypti* eggs was in Gambesi Village by 257, while the lowest was in Sulamadaha village by 87. Referring to the results of ovitrap index, the average of IO score in the category range of  $20\% \leq IO < 40\%$  (moderate) was in 18 villages; while the IO category range of  $\geq 40\%$  (high) was in two villages (Tafure and Gambesi). According to FEDH Hongkong 2006 category, IO in Ternate is at level 3 and level 4.



**Figure 1.** Ovitrap distribution by categories of ovitrap index in Ternate

The result of statistical analysis show that the average IO value in Ternate was in high category (between 20% - 60%). The high value of IO in Ternate resulted from the behavior of people who rarely cleaned the water containment, so that it became the breeding place of mosquitoes. The impact of extreme weather (El Nino) in 2016 in Ternate caused the dry season to occur longer than the rainy season.

The impact affected the behavior of local communities who preferred to contain the water that became breeding places for *Ae. aegypti* mosquitoes inside the house. It is also reported by Boewono et al., (2006) who conducted a research during the dry season in Salatiga. The research explained that during the dry season, people found it difficult to obtain water for daily necessities, which made the people rarely clean the tubs in the bathrooms causing the increase of breeding places for *Aedes* mosquitoes inside the house. According to Wahyuningsih et al., (2008), the sampling of eggs in Purwokerto was conducted during the dry season in September 2006.

The results of ovitrap research on 20 administrative villages indicated that the eggs were positive and found in the houses. The results are consistent with Rudnick's (1986) study in Malaysia explaining that *Ae. aegypti* is more common in houses, breeding in artificial water reservoirs, and biting or *sucking* blood in the house. Boewono et al., (2006) found that ovitrap installed inside the house produced more trapped eggs than the ovitrap installed outside, and this was similar to the results found by Widiarti et al., (2006) highlighting that ovitrap installed inside the house produced more trapped eggs.

Ovitrap index in Ternate in reference to EFHD category (2006) is at level 3 and level 4. EFHD category level 3 (mean category) suggests to carry out activity of DHF vector control as a routine weekly program to eliminate all breeding places. Level 4 (high category) highlights the need of government and private parties roles in controlling the mosquito breeding by utilizing larvicide or adulticide. The high value of ID indicates that the density level of *Ae. aegypti* mosquitoes in Ternate is in high category.

The ovitraps with positive *Ae. aegypti* reflect the density of adult mosquitoes which is useful as a means of examining *Aedes* sp (Morato et al., 2005). IO is able to describe the actual mosquito infestation in a region, so it can be used to examine the level of risks of the region (Morato et al., 2005). Nusa (2005) explains that ovitrap is a method applied in Taiwan as a form of research to determine the distribution and density of *Ae. aegypti* and *Ae. albopictus* mosquito vectors.

Harrington et al., (2005) in a research conducted in Thailand and Puerto Rico, suggested that there are potential breeding places for *Aedes* sp. in urban areas with a dense population. The density of population provides a breeding place allowing mosquitoes to concentrate on that particular site. *Ae. aegypti* is more commonly found to breed in artificial water reservoirs such as bathtubs, buckets, and flower vases found inside houses; and bird sheds, used tins, and used tires found outside houses in urban areas. Sukowati (2010) states that *Ae. aegypti* is a mosquito inhabiting the residential neighborhood because its pre-mature stage inhabits the water reservoir or container located within the settlement. *Ae. aegypti* is in need of optimal environmental conditions for its breeding.

Ovitrap is highly effective as a tool to control the population of *Ae. aegypti* mosquitoes in residential neighborhood including in Ternate. The main factor causing high IO scores is the people's habit of collecting water in a container without its lid, thus making it as a potential breeding place for *Ae. aegypti*. To overcome the development of DF vectors, the breeding cycle should be cut by eradicating mosquito nests (PSN); i.e. by closing, burying, and draining performed to all artificial and natural water containers.

#### 4. Conclusion

The results of examining the egg traps identified an average of 20 urban villages tested were positively exposed by *Ae. aegypti* eggs. The *Ae. aegypti* eggs were found in ovitraps installed inside the houses. Based on the results of ovitrap index, the average value of IO at 18 urban villages is in the 20% category range  $\leq IO < 40\%$  (medium) and two urban villages with the category of  $IO \geq 40\%$  (high).

## ACKNOWLEDGEMENT

I expressed my gratitude the government Head at 20 urban villages in Ternate City, Health Entomology Laboratory of Faculty of Veterinary Science of IPB and all parties who helped me during the research

## References

- [1] Bhatt S, Gething PW, Brady OJ, Messina JP, Farlow AW, Moyes CL, Drake JM, Brownstein JS, Hoen AG, Sankoh O, Myers MF, George DB, Jaenisch T, Wint GR, Simmons CP, Scott TW, Farrar JJ, Hay SI. 2013. The global distribution and burden of dengue. *Nature*. 496 pp.504–507.
- [2] Boewono DT, Barodji, Suwasono H, Ristiyanto, Widiarti, Widyastuti U. 2006. Studi komprehensif penanggulangan dan analisis spatial transmisi demam berdarah dengue di wilayah kota Salatiga. Prosiding Seminar Sehari “Strategi Pengendalian Vektor dan Reservoir pada Kedaruratan Bencana Alam di Era Desentralisasi. Salatiga”. Balai Besar Penelitian dan Pengembangan Vektor dan Reservoir Penyakit. pp.98 – 115.
- [3] CDC. 2010. Epidemiology Dengue Homepage. [Http://www.cdc.gov/dengue/epidemiology/index.html](http://www.cdc.gov/dengue/epidemiology/index.html).
- [4] Cruz, EI., Salazar FV, Aure, WE. Torres EP. 2008. Aedes Survey of Selected Public Hospital Admitting Dengue Patients in Metro Manila Philippines, *Dengue Bulletin*. 32 pp.171-177.
- [5] Focks DA. 2003. A review of entomological sampling methods and indicators for dengue vectors. Special Programme for Research and Training in Tropical Diseases (TDR). WHO.Gainsville.
- [6] Harrington LC, Scott TW, Lerdthusnee K, Coleman RC, Costero A, Clark GG, Jones JJ, Kitthawee S, Kittayapong P, Sithiprasasna R, Edman JD. 2005. Dispersal of the *Dengue* Vector *Aedes aegypti* within and between Rural Communities. *Am J of Trop Med Hyg*. 72(2) pp.209-222.
- [7] Kemenkes RI 2016<sup>a</sup>. Profil Kesehatan Republik Indonesia 2015. Kementerian Kesehatan Republik Indonesia. Jakarta. ISBN 978-602-416-065-4
- [8] Kemenkes RI 2016<sup>b</sup>. Pusat Data dan Informasi Kementrian Kesehatan RI 2016. Jakarta. ISBN2442-2659.
- [9] Lee, H.L. 1992. *Aedes* ovitrap and larval survey in several suburban communities in Selangor, Malaysia. *Tropical Biomedicine*. 9 pp. 29-34.
- [10] Morato VCG, Teixeira MG, Gomes AC Bergamaschi DP, Barreto ML.2005. Infestation of *Aedes aegypti* Estimated by Oviposition Trap in Brazil. *Rev Sauda Publica*. 39 (4). Pp 553 – 558.
- [11] Nusa R. Ipa M. Delia T. Santi M. 2008. Penentuan Status Resistensi *Aedes aegypti* dari Daerah Endemis DBD di Kota Depok Terhadap Malathion. *Bul.Penel. Kesehatan*. 36(1) pp.20-25
- [12] Perich MJ, Kardec A, Braga IA, Prtal IF, Burge R, Zeichner BC, Brogdon WA dan Writz RA. 2003. Field Evaluation of a Lethal Ovitrap Against Dengue Vektors in Brazil. *Medical and Veterinary Entomol* 17 pp.205-210
- [13] Puspitasari DA., Martini., Saraswati LD. 2012. Tingkat Kerawanan Wilayah Berdasarkan Insiden Penyakit Demam Berdarah Dengue (DBD) dan Index Ovitrap di Kecamatan Gajah Mungkur Kota Semarang. *Jurnal Kemas*. 1(2) Pp.305-315.
- [14] Rudnick A. 1986. *Dengue* Fever Epidemiology in Malaysia, 1901-1980. in Rudnick A, Lim TW, Ireland JL (ed). *Dengue Fever Studies in Malaysia*. Institue for Medical Research. Malaysia
- [15] Surendran SN., Kajatheepan A., Sanjeefkumar KFA. Jude PJ. 2007. Seasonality and insecticide susceptibility of dengue vectors: an ovitrap based survey in a residential area of northern Sri lanka. *Southeast Asian J Trop Med Public Health*, 38(2) pp.276-282.
- [16] Sukowati S. 2010. Masalah vektor demam berdarah dengue (DBD) dan pengendaliannya di Indonesia. *Buletin Jendela Epidemiologi*. 2 pp.26-30.
- [17] Teng TB. 2001. New Inisiatives in Dengue Control in Singapore. *Dengue Bulletin Vol 25* pp.1 – 6 19.

- [18] Wahyuningsih NE, Dharmana E, Kusnawati E, Sulistiawan A, Purwanto E 2008. Survei *Aedes* spp, di 3 Kota, Semarang Purwokerto dan Yogyakarta 2006. *J, Entomol, Indon.* 5(1) pp.45-49.
- [19] [WHO] World Health Organization 2005. Guidelines for Laboratory and Field Testing of Mosquito Larvicides. *WHOICDS/WHOPES/GCDPPI*.13.
- [20] Widiarti, Boewono DT, Widyastuti U, Mujiono, Lasmiati. 2006. *Deteksi Virus Dengue pada Progeni Vektor DBD dengan Metode Imunohistokimia*. Prosiding Seminar Sehari : Strategi Pengendalian Vektor dan Reservoir pada Kedaruratan Bencana Alam di Era Desentralisasi. Salatiga : Balai Besar Penelitian dan Pengembangan Vektor dan Reservoir Penyakit.
- [21] Wong NZ., Law CY., Lee MK., Lee SS., Lin H., 2007. An Alert System For Informing Environmental Risk Of Dengue Infections. *GIS For Health And The Environment*. Springer-Verlag

# Collegial Leadership Model at STKIP Santu Paulus Ruteng

Ambros Leonangung Edu dan Petrus Redy Partus Jaya

*STKIP Santo Paulus Ruteng, Indonesia*

**Abstract.** Collegial leadership is a model of leadership in the modern era that encourages leaders to foster the spirit of devolution of power, empowerment, shared decision making, and shared leadership. As an organization, universities or colleges need to apply this model of collegial leadership. This study aims to describe the model of collegial leadership in STKIP Santu Paulus Ruteng college located in Manggarai Regency, Flores, NTT. STKIP Santu Paulus has 6 study programs: PGSD, PG PAUD, Pendidikan Matematika, Pendidikan Bahasa dan Sastra Indonesia, Pendidikan Teologi, Pendidikan Bahasa Inggris. The subject of this research is 120 lecturers. The research informants were chosen from the study program of PGSD, PBSI and PG PAUD determined based on purposive sampling technique. The data were collected using structured interview techniques and in-depth interviews. The data collected were analyzed using qualitative analysis models of Miles and Huberman.

The results showed that the leadership praxis at STKIP Santu Paulus Ruteng is using a model of collegial leadership. In carrying out the leadership tasks, the heads of the study program give lecturers the opportunity and responsibilities in various meetings and college tridarma activities. Opportunities like this as well as self-empowerment of lecturers. This encourages every lecturer to show high confidence in performing the duties of Tridarma. Giving opportunity to be a leader and the empowerment of lecturers in various activities tridarma aims to improve the capacity of lecturers in order to give meaningful contribution to the study program and college.

**Keywords:** *collegial, leadership, STKIP Santu Paulus Ruteng*

## 1. Introduction

Current technological advances have influenced traditional hierarchical patterns of leadership. In the digital age, people are connected virtually to each others and formed in a collective evolving relationship network. Hardly, anyone can not touch the network effect. The phenomenon affects leadership practice. People are drawn into a more dynamic, more participatory in collaborative ties, which rely on teams within a spirit of togetherness and equality. It is in this context that collegial leadership is growing.

Collegial leadership is a model of leadership that is done openly by, in, and through the team. The team's orientation makes this model categorized as "*team leadership*". Otto Scharmer (2009) calls collegial leadership as the "U Process", or "Theory U". "U process" is a "circular" leadership idea like the U, where the policy-making mechanism is based on mutual consideration in the relation of equality. This concept has spawned a number of terms in organizational practices such as teams, bodies, committees, divisions, and units. The decisions and policies of the body are based on collectivity-collegiality. U leadership uses a horizontal-collaborative paradigm that is characterized by team "participation" and "collaboration" and this make it a difference from the centralistic-hierarchical vertical leadership paradigm.

Historically and philosophically, collegial ideas are found in Mahatma Gandhi's thought of non-violent conflict transformation in India, the lives of Chinese, Vietnamese and Japanese as it is in Buddhism, Confucianism and Taoism. They are also found in the view of a series of modern thinkers, such as Ekkehard Kappler and Johan Galtung, or philosophers like Martin Buber, Gabriel Marcel, Edmund Husserl, Martin Heidegger, Habermas, following their predecessors: Hegel, Fichte, Aristotle, Plato. Perhaps the most influential is seen in Rudolf Steiner in which his "U" Theory concept is rooted in Goethe's phenomenology (Shrarmer, 2009).

Today, the collegial model has been practiced in various insitutes. In the management literature and educational leadership, collegial leadership has been popular since the 1980s. Even Brundrett notes that the collegial model is *"one of the megatrends in education"* this century. Advocates of collegial theory believe that a participatory approach represents the longest-running cure for curing the cancer syndrome of leadership in education. The low quality of a school institution is determined by one of the leadership styles. According to Leila Shrifian (2011: 1171), in recent years, school decision management has been decentralized. The wings of authority are divided into periphery in a synergy to produce effective collaboration. The centralized power of the school leadership that has long been claimed to be able to organize everything causes all processes to run stagnant. Thus, the collegial approach has the potential to generate the forces of every individual within the school organization to achieve the organization's goals. Sergiovanni points to the importance of a collegial models. This will succeed in "bonding" staff together and in easing the pressures on school principals. "The burden of leadership will be as if the concept of leadership density is to emerge as a viable replacement for the principal leadership". Karlsson, in a study of six schools, states that the principals are dominant in all meetings because of their power position within the school, level of education in contrast to other members, first access to information taken from the education authorities, and because it is the principal who executes the decision taken" (Shrifian, 2011: 1171-1172).

According to Pamela B. Richards (2007), the collegial leadership style is the popular model in Australian universities. Rectors, vice rectors, deans and heads of majors are seen as "the first among equals". Most of the important decisions made at the university are debated at length by the senate or the university council and the academic council. Leaders do not consider themselves as single subjects of power or authority. They seek to share authority in decision-making to build resources, define strategic goals and set priorities for achieving organizational goals.

As in college, collegial leadership is also popularly applied in elementary and secondary schools. This model seems very appropriate for organizations such as schools that have a significant number of professional staffs. As Bart claimed, collegial model in schools appear to be in practice, as teachers should observe each other's performance of their teaching, or fellow teachers should teach each other to improve their performance. These professionals have the right to share and engage in important matters, including in the broader decision-making process. In view of these developments, collegial leadership has been practiced massively. The results are very real. The serious implementation of collegial forces within the scope of the organization is broadly enthusiastic as the rise of organizational culture, especially corporate culture (culture-boom) since the early 1980s (Alvesson, 2002).

## **2. The Meaning of Collegial Leadership**

Brundett (1998) says that collegial leadership can be broadly defined as someone who negotiates and collaborates with others in an organizational body. This statement emphasizes the egalitarian principle. All members have equal positions including in making decisions. The understanding then implies the role that the leader holds. Leaders are like moderators or facilitators in every meeting and decision-making. Although within the internal structure there is a general chairman and there is a chairman of the field according to their respective professional competence, it is limited to the decentralization of power to draw the potential and capacity of each member in building a synergy. Such a division is merely coordinative, does not deal with power, because all the individuals in it are equal. The leader plays a role in accommodating members' thinking but does not have the authority to make decisions on a descending opinion. Decisions must be tapped from the aspirations of all members. In such situations, collegial leadership should be seen as a process that encourages and accommodates shared decision making and leadership together with a passion that allows team-mates to act.

Collegial leadership is a model of leadership that upholds equality in an organization. Top-down relationship is abandoned. Decisions are in the hands of all professional members in the organization. There is no single leader, no central figure. This does not mean reducing the authority of the leader but

that leadership is acknowledged authoritatively insofar as authorizing all members to offer and make choices that lead to common interests. From a particular point of view the model of collegial leadership can be categorized into the type of democratic leadership.

This role requires leaders and people who are led to have equal competence. In other words, collegial leadership focuses on the capacity of stakeholders to play the participatory role of all the limbs (Lofthouse, 1994). Participation can be improved if all who join in it have the ability of communication and competence that qualified. Communication in receiving and expressing criticism to others as well as the ability to unite ideas into a constructive input.

### **3. Pillars of Collegial Leadership**

The concept of collegial leadership can be manifested into four pillars: devolution of power, empowerment, shared decision making, and shared leadership.

#### ***1. Devolution of power***

Devolution of power is a transition of power. In this context, the power is left to the members of the organization. The devolution is not in the legalistic sense that team members are appointed to replace the leading leader role, but rather a decentralized power to gain greater energy and performance outcomes when it is done together (Kouzes & Posner, 1997). Kouzes and Posner observe that credible leaders prefer to give power to others for a greater purpose than to exercise leadership by relying on their own power. Not just sharing power, leaders also have the ability to unite forces. Shared powers will be useless if they are not used for common purposes.

#### ***2. Empowerment***

Traditional leaders hold power as a sole right centered on their position. Instead, collegial leaders share their power base for breaking the exclusive and arrogant hierarchical chain (Kouzes & Posner, 1997). In a collegial context, a vertical hierarchy with a single leader in power is transformed into a horizontal relationship with intimacy nuances. Empowerment refers to the loyalty and competence of staff skills to take part in the decision-making process because of their skills abilities rather than their position in the hierarchy (Bush, 1993).

#### ***3. Shared decision making***

In traditional praxis, leaders have centralized powers in making decisions. That power can benefit oneself and certain parties, then harm the other side. Unlike the collegial leadership, decision-making is no longer the prerogative of the main leader but the right of all members. Each member with an empowered ability has the authority to determine and make decisions that conform to his will and capacity to achieve the common goals.

#### ***4. Shared leadership***

Avolio et al. declared that the most popular cited definition of shared leadership comes from Conger and Pearce: "A dynamic, interactive influence process between individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both". Conger and Pearce added, "This influence process is often involves peer, or lateral, influence and at other times involves upward or downward hierarchical influence." Blood, Pearce, and Kohles affirmed, "Shared leadership offers a concept of leadership practice as a team - level phenomenon where behaviors are enacted by multiple individuals rather than solely by those at the top or by those in formal leadership roles" (Koccolowski, 2010: 29). Collegial leadership is a collaborative process that practices the devolution of power to team members so that they can become an integral part of the organizational leadership process according to shared vision and mission.

### **4. Research Methods**

This research is a descriptive research with qualitative approach. The purpose of this study is to describe the model of collegial leadership applied in STKIP Santu Paulus Ruteng college. To obtain information about the collegial model, researchers collect data through structured interviews and observations. A total of 30 lecturers from 120 lecturers serve as research informants. The research informants are the representative of 6 courses in STKIP Santu Paulus Ruteng. Data analysis technique

used is Miles and Huberman model analysis technique which consisted of data reduction, data display data, and conclusion.

## **5. Results And Discussion**

As an educational institution that is developing itself, STKIP applies a model of collegial leadership. This model does not only take place at the level of course but also at the highest level. Some indicators of the model of collegial leadership in STKIP Santu Paulus Ruteng, among others, the relationship built between the leaders both the head of the school and the head of the study program with the lecturers is an egalitarian relationship. This kind of relationship looks at every lecturer as an equal colleague. The model of egalitarian relations has so far been able to build on collaborative relationships and cooperation among lecturers and members of STKIP Santu Paulus Ruteng community. This fact when maintained and enhanced will be a progressive driving force.

The equivalent relationship built on STKIP Santu Paulus Ruteng college does not mean a horizontal relationship without a rudder. The role of the leader as the organizer of the organization remains to be considered. Interview and observation data indicate that the lecturers have the perception that the leader is the captain of an organization. In this case, The success of the institution does not lie in the centralized power. The decentralization of power occurring on STKIP Santu Paulus Ruteng college is seen in the distribution of Tridarma duties. The lecturers are divided into small units to take care of various things related to the implementation of Tridarma and the improvement of the quality of the institution. This decentralization of power is in line with Otto Scharmer (2009) who calls collegial leadership the "Process U". In this model, the policy-making mechanism is based on mutual consideration in the relation of equality. This statement confirms that the keywords of collegial leadership are equal relations.

In the context of leadership competence, the lecturers of STKIP Santu Paulus Ruteng have the perception that the progress and success of the college is highly determined by the leader's personal competence. This perception is related to the applied leadership style. However, leadership style depends on leader figure. It is to say that, what and how the applied leadership model can be explained through the personal character of a leader. So far, the election of school chairman and head of study program is based on the leader's personal figure. Everyone who occupies an important position on the college STKIP is determined based on careful consideration, especially the consideration of interpersonal skills. This ability is important in building effective communication with lecturers. Without interpersonal skills, the relationships built will tend to be centralistic.

Chairman of STKIP and the heads of the study programs have the abilities to accommodate the different minds of the lecturers. Any ideas, thoughts and opinions that lecturers present in meetings at either the college level, the senate, or the study program can be well accommodated by the leaders. In making the decision, the leaders act as facilitators. That is, the decision is not taken by the chairman of STKIP or the head of the Study Program. The decisions are made on the basis of deliberations with the lecturers. This shows that in decision-making at STKIP Santu Paulus, the leaders act as facilitators. They encourage lecturers to mobilize their capabilities optimally, convey creative ideas that can advance the college of STKIP Santu Paulus Ruteng.

The collegial leadership model on in the college can also be reviewed based on the 4 basic pillars of collegial leadership. The four basic pillars are devolution of power, empowerment, shared decision making, and shared leadership.

### ***1.1. Devolution of Power***

Concretely, devolution of power is concerned with the decentralization of power. The power of the leader is demonstrated by his ability to share power to the members. In the context of STKIP Santu Paulus Ruteng, it is shown by the distribution of Tridarma Perguruan Tinggi tasks into small units. For example, the unit dealing with the academic and teaching field is PUKET I. The unit that handles personnel and finance is PUKET II, and the student-holding unit is PUKET III. In addition to PUKET, there are other units such as LPM, quality assurance units; LPPM, the unit that

handles the field of Research and Community Service. These units also have the smallest units in the Study Program. Each unit has the authority to make decisions according to the field.

The division of power does not occur only in the prevailing organizational structure, power sharing also occurs in certain activities such as seminars, college anniversary celebrations, new admissions, and so on. In these activities, the college and study program form the committee. The structure of the committee is dynamic. Each lecturer has a turn to become chairman or a member in the committee. The principle of justice is often a concern in the formation of committees as well as in the division of other work duties. In addition to the principle of justice, lecturer competence is also a concern in the division of certain tasks. Considering competence and fairness in the division of tasks, the leadership of STKIP Santu Paulus Ruteng has implemented a model of collegial leadership.

Shared power will be beneficial if it is based on the shared vision and mission. The result data showed that the lecturers have the same perception related to the vision and mission of the college and the vision and mission of the study program. The vision and mission of the college and study program is shared by most of STKIP Santu Paulus Ruteng lecturers.

### **5.2. Empowerment**

The sharing of power requires professional competencies of each member. The logical implication is the Chairman of STKIP, the Head of Study Program and the chair of certain units often hold various activities that can increase the personal capacity of the lecturers. Those leaders realize that lecturers' competences are the main capital for the development and improvement of college quality. Thus, enrichment activities and empowerment of lecturers are continuously conducted. In some semesters, the lecturers can follow two or more empowerment activities. Self-development activities of lecturers include improving the ability in terms of learning through e-learning training program. Improving the ability to research through research activities either held college or Ristekdikti. In addition to the empowerment activities held at the college level, lecturers also have the opportunity to develop themselves through scientific lecture seminar held by the Study Program. Each Study Program organizes the activities at least once a month. The college also continues to improve the qualification of lecturers by giving lecturers the opportunity to follow the higher academic qualification. To get the ideal, lecturers who are sent must have a high loyalty to the college. Until now, STKIP Santu Paulus Ruteng has sent several numbers of lecturers to take the S-3 program at top universities in Indonesia. Collegial leadership will be more effective through empowerment activities like this. With the increase of lecturer competence, then the process of discussion and decision making will be more effective. Decisions resulting from consensus with empowered lecturers will have a positive impact on the progress of the college.

### **5.3. Shared Decision Making**

The decision making at STKIP Santu Paulus Ruteng is not centralized. Every decision is often taken on the basis of joint deliberation. The leaders acts as the facilitators who accommodates all the differences and unifies them. In line with this, Decision-making is not the prerogative of the chairman of STKIP or the heads of the study program since each lecturer has the same right to convey ideas and make decisions.

### **5.4. Shared Leadership**

The distribution of power at STKIP Santu Paulus encourages the lecturers to enter into an integral part of the leadership process. The lecturers do not feel separate from the existing organizational structure. The unity between the leaders and the lecturers can avoid them from the stress at work. The research data shows that the level of stress or depression experienced by STKIP Santu Paulus lecturers is very low. Low stress levels can also occur because the lecturer's workload is evenly distributed to all lecturers. Primordialism and subjectivity in the division of tasks or workload is low. Each lecturer has the same opportunity to show his ability. The four basic pillars of collegial leadership that occurred in STKIP Santu Paulus Ruteng actually have a linkage.

The relationship between the four pillars can be described as a cyclical relationship. Shared power demands empowerment; empowered members will certainly have the ability to qualify in making decisions; With the existence of shared decision making, each member feels united with the

leaders. Another characteristic that proves that the collegial leadership model has been applied in STKIP Santu Paulus Ruteng is the leader's ability to give and receive criticism; cooperation among lecturers to improve productivity and advance college; and socialize any information related to college and study program.

## 6. Conclusion

Collegial leadership is a form of leadership in the modern era. The relationship model built between leaders and members is an egalitarian relationship. Leaders view members as parties of equal standing. The implication is that leaders share power, allow decision-making, member opportunities to empower themselves, encourage members to feel united in leadership structures. STKIP Santu Paul Ruteng has applied a model of collegial leadership. College leaders, units and courses do not apply the centralistic leadership model. In decision-making, the leader only acts as a facilitator. Many lecturers feel empowered and have the opportunity to empower themselves. In addition, every lecturer always gets the division of tasks based on his expertise and experience. If this leadership model continues to be maintained or enhanced, STKIP Santu Paulus Ruteng can grow into one of the top quality colleges.

## References

- [1]. Alvesson, Mats. *Understanding Organizational Culture*, (London: Sage Publications Ltd., 2002).
- [2]. Bush, T. 2003. Organisational Structure. In B. T. Thurlow M, *Leadership and Strategic management in South African Schools*. London: Commonwealth Secretariat.
- [3]. Kocolowski, Michael D. *Shared Leadership: Is it Time for a Change?* [Emerging Leadership Journeys Vol. 3 Iss. I, 2010].
- [4]. Kouzes, BZ & Posner, JM. 1997. *The Leadership Challenge*. San Fransisco: Jossey-Bass.
- [5]. Nelwan, Richard. *Kepemimpinan Kolektif-Kolegial dan Kepemimpinan Pancasila*. Ruteng: Penerbit STKIP Santu Paulus, 2018.
- [6]. Richards, Pamela B (ed.). *Global Issues in Higher Education*. New York: Nova Science Publisher, Inc., 2007.
- [7]. Scharmer, C. Otto. *Theory U: Leading From the Future as it Emerges*. San Fransisco: Berrett-Koehler Publisher, Inc., 2009.
- [8]. Sharma, Manoj Kumar & Jain, Shilpa. *Leadership Management: Principles, Models and Theories* [Global Journal of Management and Business Studies Volume 3, Number 3, India, 2013].
- [9]. Shrifian, Leila. *Collegial Management to Improve the Effectiveness of Managers' Organizational Behavior in Educational Institutions* [Procedia Social and Behavioral Sciences 29, 2011].
- [10]. Sipe, James W. & Frick, Don M. *Seven Pillars of Servant Leadership, Practicing the Wisdom of Leading by Serving*, New York: Penguin Books, Ltd., 2003

# **An Analysis on Corruption Indication Effect toward Development in East Indonesia Region (Education, Health, and Road Infrastructure Sectors)**

**Amran Husen**

Faculty of Economics Khairun University,  
Email : *amran.husen@yahoo.co.id*

**Abstract.** This study aims to: (1) identify the impact of indications of corruption on the public budget of education, health and road infrastructure, (2) to determine the impact of corruption indications on public services in education, health and road infrastructure, and (3) to know the impact of corruption indications on economic growth in Eastern Indonesia. The analytical approach used is Path Analysis.

The results of the study show that (1) the increase in education budget has not been able to increase the absorptive capacity of the school-aged population, due to an indication of education budget corruption, but increased education budget can increase the quality of my human resources, and economic growth. (2) an increase in the health sector budget has not been implicated in improving the quality of health services, due to corruption. (3) increased budget for road infrastructure, proven to have adverse impact on the availability and quality of roads. Poor service in the health sector, roads, direct or indirect impacts on the low economic growth in the Tin Area of Indonesia.

**Keywords:** *Corruption, public budget, public service and economic growth*

## **1. Introduction**

High corruption phenomenon is a common problem faced by several developing countries. Weak bureaucracy and weak law and justice enforcement are assumed to be the causes of the corruption in some countries (Klitgard, 2001). In economics perspective, the increasing number of rent seeking and corruption are caused by several points such as: the international trade barriers, price control conducted by government, the applicable multiple exchange rates, and the low rate of government officer's salary (Mauro, 1997). The effect of corruption is extensive including the decrease on human resource quality, poor road infrastructure development, and hindered economic growth.

The empirical evidence shows that the relationship between corruption and human resource quality is negative but significant; yet, the role of corruption on tax earning and misallocation of local government budget is positive and significant (Mauro, 2004; Knack and Keefer, 1995; and, Dewi, 2002). On the other hand, economic growth is expected to be able to reduce poverty and income discrepancy through trickle-down effect mechanism. The weak on fund capital and human capital resulted from the lack of accessibility on financial institution is perceived as the main cause of poverty among developing countries (Sarkar and Aynul, 2001). The economic model gives a clue that corruption will directly affect the factors that influence economic growth.

Most of the countries have established their legal law and regulation for protecting their economic system from recession condition which causes low economic growth (Quintos, 1995). The literature demonstrates that economic growth is able to improve financial management and government governance system; yet, it is not able to run redistribution function. Central and local government revenue improvement due to good financial management and good government governance will be utilized to improve productive investment. There are two different approaches in the literature related to corruption effect: it increases efficiency or reduces efficiency.

Those who support the argument that corruption increases efficiency (Kiltgard, 2001; Noriss, 2000; Pelegrini and Garlagh, 2004) state that corruption eases the flow of business and trade, eases the investment inflow, and increases economic growth. Those who support the argument

that corruption reduces efficiency (Tanzi and Davoodi, 1997; Mauro, 1995; Lerrick, 2005; Ratnawati, 2011) claim that corruption hinders business and trade activities, reduces public expenditure, disturbs public service, and increases poverty; as the consequence, corruption impedes economic growth and distorts resources allocation. Corruption harms efficiency.

Some empirical studies on the role of corruption (Ventelou, 2002) estimate that corruption act for \$ 1 results in economic loss for \$1.67. Mauro (1996), Ades & Di Tella (1997), and Tanzi & Davoodi (1997) find the negative relationship between investment and corruption. Mauro (1996) and Tanzi & Davoodi (2000) find the negative relationship between real gross domestic product per capita and corruption. Mo's (2001) analysis result shows that 1 percent increase of corruption rate reduces up to 0.72 percent of economic growth. The impact of corruption is extensive, such as on: the quality of human resource, poor infrastructure services (telephone/communication, electricity, water, airport, and road), and economic growth (Suryadarma, 2008; Ackerman, 2009).

Mauro's (2000) empirical study result indicates that corruption shrinks the amount of public expenditure that is allocated to the overall sectors. Part of government budget is corrupted by corrupt bureaucrats during the stages of the budget arrangement processes. The next finding shows that corruption does not only change the amount of the total real expenditure but also alters its distribution. Corruption affects public expenditure structure which allocates more defense budget, as well as oil and energy sectors budget but sacrifices social sectors such as education, health, and social protection. Gupta, Davoodi, and Tiongson (2000) conclude that the high rate of corruption makes health and education even worse; as the consequence, the rate of school dropouts and baby mortality raises.

Podobnik *et.al* (2008) in their research during 1999-2004 find the direct relationship between public investment and corruption perception index. The prior research has shown that corruption causes positive effect on the amount of global budget, reduces public expenditure efficiency, and reduces education and health expenditure as the percentage of gross domestic product, as well as increases military expenditure. Mauro's (1998) research shows negative but significant relationship between corruption and government expenditure on education sector. Ramirez, Raniz, and Stewart (2000) mention that government expenditure positively influences education and health sectors enhancement, particularly for women; next, it supports economic growth.

In proving the effect of corruption indication on human development, Akcay (2006) uses corruption data from three different sources for corruption index such as Corruption Perception Index, International Country Risk Guide's, and Corruption Index constructed by Kaufmann, Kraay, and Mastruzzi (2003); it reveals that there is negative but significant relationship of corruption index on human development. It implies that a corrupt country tends to have lower human development index; furthermore, Akcay (2003) says that the negative consequence of corruption hinders human development. Loffgren and Robinson's (2004) finding in Bolivia and Nicaragua indicates that corruption hampers human development; yet, economic development, government intervention, culture, and democracy consolidation are statistically significant and able to reduce corruption. Corruption becomes the main hindrance of human development when democracy, education expenditure, and gross domestic product variables are involved in the analysis. It means that the improvement of human development quality which is measured by human development index will result in the improvement on democracy awareness and gross domestic product since the economic grows.

Suryadarma, (2008) shows that public sector expenditure on education influences school enrolment in regencies/cities of Indonesia which have high corruption level; on the other hand, the increase on education sector of public expenditure can encourage improvement on the school participation of the students both at the elementary and middle schools at regencies/cities which have high corruption rate. An increase on public expenditure can help improving school participation, particularly for students who come from poor family background. Public expenditure also influences the quality of school graduates even at regencies/cities which have low corruption rate.

According to Rajkumar and Swaroop (2007), in a country with high corruption level, an increase on public expenditure in health sector does not reduce the baby mortality rate but increases elementary education quality in developing countries. Watanebe and Qizilbash (2001) explain that as

government allocates public investment for sufficient health infrastructures, it will help unfortunate and society to free from poverty. Good health infrastructure will improve society life expectancy and encourage human capital accumulation improvement. The society will be free from poverty as the income continues to grow up.

Ratnawati (2011) explains that corruption reduction and infrastructure improvement are two things that should be refined by Indonesia government achieve better economic growth. Calderon and Ukkari (2005) demonstrate that (i) positive economic growth is affected by infrastructure availability and (ii) a decrease on income discrepancy is due to better availability of infrastructure. Infrastructure development is effective to reduce poverty. The effect of better availability and quality of infrastructure is significant on economic aspects. Calderon and Ukkari (2005) describe poor infrastructure as the main hindrance of economic development in Sub-Saharan Africa.

Tanzi and Davoodi (2000) say that corruption will raise the number, value, and complexity of a project which in turn also increase public investment ratio toward gross domestic product, reduce budget allocation for public service on education, health, and social insurance, as well as shrink the economic growth. Education, health, and road infrastructure are the basic needs of the society that should be fulfilled by the government; and those three aspects highly influence economic growth (Gupta *et.al.* 2002). Meanwhile, the implementation of local autonomy policy and fiscal decentralization policy are considered based on the assumption that local autonomy knows better what the people in its authority need and the public service standard for the society in its region; therefore, local autonomy is expected to be able to foster public welfare in local region based on the budget allocation which is transferred by central government annually. The autonomy is expected to be able to encourage an improvement on economic growth rate.

The economic model shows that corruption will directly affect the factors which influence economic growth; meanwhile, the government model indicates that corruption will reduce government budget so that public needs procurement will reduce as well (Chetwind *et.al.* 2003).

The problem faced by East Indonesia region is related to the low quality of human resource, poor road infrastructure quality, and low economic growth. The causes of this problem are lack of funding source support and high corruption rate in the regional level. Corruption correlates to government expenditure in education sector, health sector, road infrastructure, and also economic growth. Anan (2003) says that corruption causes the decrease on public service; besides, it causes a lame budget allocation on each sector. Chetwind *et.al.* (2003) say that corruption reduces the composition balance of public budget allocation among education, health, and road infrastructure sectors; furthermore, it also affects economic growth in long term. If corruption distorts development, corruption will also necessarily be able to decrease economic growth.

A comprehension on the role of corruption indication toward public expenditure, public service quality, and economic growth in East Indonesia is critically needed as information source during local autonomy era; this understanding is important and urgent as the motive to conduct this research. The main objective of this research is to improve the understanding on the relationship between public budget corruption indication, public service, and economic growth based on the cross-sectional data among 16 provinces in East Indonesia. The specific objectives of this research are: 1) to analyze the role of corruption indication on budget in education, health, and road infrastructure sectors, 2) to analyze the role of corruption indication on public service in education, health, and road infrastructure sectors, and 3) to analyze the role of corruption indication on economic growth.

## **2. Method**

The research method utilized to answer problem formulation and to achieve the research objective is path analysis. The aim of path analysis is to explain both direct and indirect effects of a set of variables as the independent variables toward the other variable(s) as the dependent variable(s) (Sarwono, 2007:2-5). This analysis is one of the methods to describe a set of abundant data and to investigate the relationship of a causal model that has been formulated by a researcher based on the theoretical consideration and particular knowledge. The form of causal relationship in this study uses complex model since there are some variables which take two different roles: as independent

variables in a relationship and as dependent variables in another relationship. This kind of variables relationship requires an analysis instrument which is able to explain it simultaneously.

Path analysis is the proper choice. Model formulation to test the role of public budget corruption indication, public service, and economic growth can be described in the equation (1) to equation (6). The model of corruption indication is as follow:

a. The direct effect of corruption indication on education budget:  
 $Y_1 = A_0 + A_1PUS + A_2CPI + A_3JKND + A_4SiLPA + e_{it}$  ..... (4.1)

b. The direct effect of corruption indication on health budget:  
 $Y_2 = B_0 + B_1JP + B_2CPI + B_3JKND + B_4SiLPA + e_{it}$ ..... (4.2)

c. The direct effect of corruption indication on road infrastructure budget:  
 $Y_3 = C_0 + C_1CPI + C_2JKND + C_3SiLPA + C_4RPJB + e_{it}$  ..... (4.3)

d. The direct effect of education and health budgets on human resource quality:  
 $Y_4 = D_0 + D_1NBSP + D_2NBSK + e_{it}$  ..... (4.4)

e. The direct effect of road infrastructure budget on road infrastructure quality  
 $Y_5 = E_0 + E_1NBSIJ + e_{it}$  ..... (4.5)

f. The direct effect of the value of expenditure on education, health, and infrastructure sectors on economic growth  
 $Y_6 = F_0 + F_1NBSP + F_2NBSK + F_3NBSIJ + e_{it}$  .....(4.6a)

g. The indirect effect of human resource quality and road infrastructure quality on economic growth  
 $Y_6 = F_0 + F_1SDM + F_2KIJ + e_{it}$  .....(4.6b)

Description:

- Y1, Y2, Y3 are education budget, health budget, and road infrastructure budget variables respectively
- Y4 is human resource management variable
- Y5 is the road's availability and quality variable
- Y6 is economic growth variable
- NBSP is the expenditure value on education sector
- NBSK is the expenditure value on health sector
- NBSIJ is the expenditure value on road infrastructure sector
- SDM is the quality of human resource as measured by using IPM which is reflected on education and health.
- KIJ is the quality of road infrastructure which is indicated by its quality and availability that are in good condition at provincial level
- PE is economic growth
- PUS is the school-aged population
- CPI is corruption perception index
- SiLPA is surplus budget (*Sisa Lebih Perhitungan Anggaran*)
- JKN is the amount of government loss (*Jumlah Kerugian Negara*)
- RPJB is the ratio of poor road condition on each province

### 3. Result and Discussion

#### 3.1. Analysis Result

The statistical analysis result demonstrates (see Appendix Table 1) that:

- a. The direct effect of Corruption Perception Index on expenditure value for education sector (see Appendix Table 1) is statistically significant as the estimate value is 5.857 with 0.029 probability value. The direct effect of Corruption Perception Index on expenditure value for road infrastructure is statistically not significant as the estimate value is 3.903 with 0.522 probability value. The effect of corruption indication is positive on Corruption Perception Index which occurs for education and health budgets but not for road infrastructure budget; this is proven by better public perception as the budget increases. It means that budget increase does not always cause high corruption on education and health sectors in 16 provinces of East Indonesia.
- b. The direct effect of the amount of government loss on expenditure value for education, health, and road infrastructure (see the Appendix Table 1) is statistically not significant as the estimates value are -0.022, -0.101, and 0.039 respectively with 0.749, 0.280, and 0.802 probability values correspondingly. The effect of corruption which is measured by using government loss indicator is not proven in this research. The increase on education, health, and road infrastructure budget allocation is followed by efficient budget utilization so that government lost can be prevented.
- c. The direct effect of budget surplus on expenditure for education, health, and road infrastructure sectors is statistically not significant as the each estimate value is 0.085, 0.133, and 1.157 respectively and 0.000 probability value of each sector. The significant relationship between surplus budget (*SiLPA*) and corruption indication effect on education, health, and road infrastructure budgets indicates the potential of corruption to take place. The weak on budget planning aspect, the low capacity and capability of the bureaucracy strengthen corruption indication. An increase on education, health, and road infrastructure budgets is potential to a corruption to occur since some of the budget cannot be absorbed.
- d. The direct effect of education sector expenditure toward human resource quality (see Appendix Table 1) is statistically significant as the estimate value is 0.023 with 1.968 probability value. The increase on education budget is able to improve education service quality as reflected by the positive relationship between the increase on education budget and human resource quality improvement. It means that the statement which says corruption indication effect will decrease education service quality is not confirmed in this research.
- e. The direct effect of health sector expenditure toward human resource quality is statistically not significant as the estimate value is -0.003 with 0.741 probability value. The increase on health sector budget in this research does not prove to be able to improve health service quality even the public perception is better on the health budget management.
- f. The direct effect of road infrastructure sector expenditure on road infrastructure quality is statistically not significant as the estimate value is -0.161 with 0.418 probability level. The increase on road infrastructure budget in this research is not confirmed to be able to improve the availability and service quality of road infrastructure sector. The low budget absorption rate strengthens the argumentation of the potential corruption to take place.
- g. The direct effect of human resource quality toward economic growth (see Appendix Table 1) is statistically significant as the estimate value is 14.896 with 0.001 probability value. The direct effect of road infrastructure quality toward economic growth is statistically not significant as the estimate value is 0.027 with 0.342 probability value. The increase on human resource quality is proven to be able to improve economic growth; yet, road infrastructure does not have any direct significant effect on economic growth at East Indonesia.
- h. The direct effect of education, health, and road infrastructure sectors expenditure toward economic growth (see Appendix Table 1) is statistically not significant as the estimate values are 0.048, -1.302, and 0.089 respectively as the probability values are 0.944, 0.610, and 0.702 correspondingly. It means that the increase on education, health, and road infrastructure budget does not have any direct significant effect on economic growth at East Indonesia.

### **3.2. Discussion**

#### **3.2.1. The Effect of Corruption Indication on Education, Health, and Road Infrastructure Budget**

Referring to the statistical analysis, it is proven in this research that the role of corruption indication influences budget on education, health, and road infrastructure sectors as shown by the positive value of “*sisa lebih perhitungan anggaran.*” (SiLPA/ surplus budget). The weak budget planning causes low absorption on the allocated budget. It means that the relationship among the increase on education, health, and road infrastructure budgets with positive surplus budget shows the potential of corruption to take place. This result is in accordance with Mahmud (2012) as he says that “the high surplus budget does not only cause a rise on the opportunity of the society to achieve more facilities but diminish public service but also the economic value chain (multiplier effects) that is bound on budget function is cut.

The result indicates that in Indonesia, particularly in provinces located at East Indonesia as the sample of this research, an improvement on human resource quality, enhancement on education and health service in local region supported by good road infrastructure availability do not guarantee that those will reduce corruption. In 2012, there are 13 corruption cases in education sectors, 9 cases in health sector, and 11 corruption cases in general affairs sector. The resource allocation in the budget is distorted when the bureaucracy is corrupt. Corrupt behavior is related to the opportunity to achieve personal benefit on the funded projects such as budget allocation which even greater on the projects that are easier to be corrupted and provide more personal benefit (Mauro, 1998). It means that corruption and rent seeking activities in the government influences the number and composition of the government budget.

The research result on 16 provinces in East Indonesia shows that the effect of corruption indication on public budget occurs in education, health, and road infrastructure sectors. Scholarship fund for poor student corruption case in North Maluku Province in 2010 was Rp. 11.98 billion. The corruption case on text book procurement in 2010 at Education, Youth, and Sport Service of Kupang City, Nusa Tenggara Timur implied government’s budget loss as much as Rp 2.6 billion. Corruption case allegation on supporting references, references, and education guideline procurement for elementary and special primary school in 2012 at Nunukan Regency, South Kalimantan Province is adverse for government budget as much as Rp 3.17 billion. The corruption case on free education budget program of Palopo City – South Sulawesi Province in 2011 is Rp 3.9 billion. The corruption case allegation on Scholarship Fund for Poor Student at Mamuju – West Sulawesi in 2010 is Rp 27,475,000. This facts support the argumentation which says that corruption indication effect on education sector is adverse particularly for poor society.

The increase on road infrastructure budget in this research is also found to be not effective yet. High corruption still occurs in South Kalimantan, East Kalimantan, Maluku, South-East Sulawesi, Central Sulawesi, Central Kalimantan, and Gorontalo Provinces. Corruption on road infrastructure development budget comes up in road and bridge infrastructure development which links Nopi and Buntuna of Central Sulawesi Province in 2012; this case causes government loss as much as Rp 6.66 billion. Corruption allegation case in road development project on Jalan Maupunggo – Puwada, Nusa Tenggara Timur Province in 2009 was Rp 314 million. Corruption allegation case in road development at Wetar Island, Northeast Maluku in 2012 was Rp 20.63 billion. Those facts indicate that the effect of corruption indication on public budget can hinder government’s effort to accelerate the development processes on education, health, and road infrastructure sectors in East Indonesia.

#### **3.2.2. The Effect of Corruption Indication on Public Service (Education, Health, and Road Infrastructure)**

Based on the statistical analysis result of this research, it is found that corruption indication effect influences public service on health and road infrastructure. The budget increase on health and road infrastructure sectors does not significantly improve society health condition and road infrastructure quality due to corruption. This result supports Tanzi and Davoodi’s (2000), Calderon and Serven’s (2005), Watanabe and Yasuoka’s (2011), and Ratnawati’s (2011) research. This finding is different from Mauro’s (1998), Gupta, Davoodi, and Tiongsong’s (2002) finding. It is

due to the differences on region's characteristic or the regions which are chosen as the research sample. Most of the researchers observe the relationship between public service budget and corruption by using data from several countries; yet, this research sample uses regional area in single country.

As we observe from its role, public service budget (health and road infrastructure sectors) has positive effect on corruption. The effect of corruption indication on public service occurs on health and road infrastructure sectors due to budget increase. This result is relevant with other research result (Rajkumar and Swaroop, 2007) which says that health sector is the most important public service sector that should be met by the government; thus, the allocation on this sector is relatively higher than other sectors. Ratnawati (2011) says that the increase on regency/city government expenditure budget in Indonesia on road infrastructure sector for 11 up to 13 percent is not in line with the improvement on the quality of the infrastructure, particularly for road infrastructure. In 2007, the length of regency/city road which is in very poor condition is 24.9 percent; yet, in 2010, the very poor road condition achieves 44.4 percent due to corruption.

This research also demonstrates the direct relationship between road infrastructure sector expenditure and the quality of road infrastructure which is not significant (see the Appendix Table 1). The increase on road development budget in East Indonesia cannot improve the quality of road infrastructure. The analysis result proves that the ratio of poor road length positively correlates to the increase on road development budget. This finding is relevant with the finding of *Komite Pemantau Pelaksanaan Otonomi Daerah* (Local Autonomy Implementation Monitoring Committee) (2012) which finds that road infrastructure become the main obstacle of the business activities in Indonesia.

The explanation on the research finding confirms that the research hypothesis is accepted as the corruption has negative effect on public service, particularly on health and road infrastructure sectors. Budget increase does not have positive implication on human resource quality improvement as observed from health indicator, availability and quality of road infrastructure indicator in East Indonesia.

### 3.2.3. *The Effect of Corruption Indication on Economic Growth*

The statistical test result (see Appendix Table 1) related to the effect of corruption indication on economic growth in East Indonesia demonstrates positive result which correlates human resource quality and economic growth. The increase on education budget positively affects human resource quality and economic growth in East Indonesia region. The positive relationship between Corruption.

Perception Index and surplus budget toward an increase on education budget indicates corruption potential; however, an increase on education budget positively influences human resource quality which then improves economic growth. It concludes that the effect of the occurring corruption indication, particularly in education sector, is still acceptable; yet, the increase on education budget is able to improve human resource quality and economic growth in East Indonesia region.

The finding above also strengthens the former theory and prior empirical results from Andreosso & Callaghan (2000), Todaro (2003), and Schweke (2004). They say that human capital is one of the critical determinants of economic growth. The relationship between education, health, and economic growth is reciprocal. Education provides significant contribution on economic development. Education does not only deliver excellent human resource quality that has knowledge and skill but also cultivate fair and conducive business atmosphere for economic growth. Therefore, investment on human resource is not only beneficial for individual but also for general development of a country.

The analysis result demonstrates that direct relationship among education, health, and road infrastructure budgets toward economic growth is not significant. The increase on education, health, and road infrastructure sectors indirectly improves economic growth. The direct relationship among Corruption Perception Index, surplus budget, and poor road infrastructure ratio is positive toward education, health, and road infrastructure budgets which reinforces the corruption indication to occur. Mauro (1995) says that if Indonesia is able to improve its Corruption Perception Index equal to Singapore, the ratio of Indonesia's total public expenditure will raise to 9.98 percent. Gyimah-Brempong (2001), Mujtabala (2006), and Uneke (2010) prove that if Corruption Perception Index of a country improves for 1 percent, it will raise gross domestic product growth between 0.75 up to 0.90 percent as well as increase income per capita between 0.39 up to 0.41 percent. The basic argumentation is that corruption results in resources loss which causes the economic condition of a country below its potential capacity.

The road infrastructure quality variable based on the analysis shows that there is no significant relationship. Budget increase on road infrastructure development is not able to improve the quality of road infrastructure since the prior research analysis result shows that the ratio of poor road length continues to increase. This result confirms that corruption allegation on education, health, and road infrastructure sectors affect economic growth in East Indonesia region. The prevention effort on development budget abuse for education, health, and road infrastructure sectors is urgent to be taken by involving the society and mass media; further, law enforcement should be implemented.

#### **4. Conclusion**

1. Corruption tends to expand the budget, thus:
  - a. The effect of corruption indication on public budget in this research is positive for education and health sectors. Positive public perception indicates better budget management, implementation, and controlling systems in education and health sector as the effort of corruption prevention.
  - b. The effect of corruption indication on public budget in this research is proven to be not significant for road infrastructure sector. This result reveals that there is not better development on the budget management, implementation, and controlling systems particularly in road infrastructure sector.
  - c. The effect of corruption indication on public budget for education, health, and road infrastructure sectors in this research demonstrates the potential of corruption indication effect. The positive relationship between surplus budget and budget increase on education, health, and road infrastructure sectors indicates unfavorable budget planning.
2. The effect of corruption indication on public service quality in this research confirms that
  - a. Corruption indication is able to improve public service quality in education sector. An increase on education budget, followed by better public perception on budget management, implementation, and controlling, positively influences education service quality as the quality of human resource is improved.
  - b. Corruption indication cannot improve public service quality in health sector. Budget increase on health sector, followed by better public perception on budget management, implementation, and controlling, is not yet able to significantly influence health service quality improvement.
  - c. Corruption indication cannot improve public service quality in road infrastructure sector. The availability and quality of the road remain poor; thus, it indicates that the efforts taken by the government by improving road infrastructure budget does not yet show better result.
3. The effect of corruption indication on economic growth shows that
  - a. Positively, corruption indication is able to improve economic growth. Education budget increase, followed by human resource quality improvement, becomes an important factor to encourage local economic growth in East Indonesia region.
  - b. Corruption indication hinders economic growth. Positive public perception related to the budget management, implementation, and controlling in health sector does not provide

significant contribution on human resource quality improvement; even, it negatively affects economic growth in East Indonesia region.

- c. Corruption indication hinders economic growth. Road infrastructure budget increase does not have significant effect on the availability and quality of road infrastructure. It obstructs economic growth both directly and indirectly in East Indonesia region.

## References

- [1]. Abed, G., and Davoodi, H. (2000). Corruption, Structural Reforms and Economic Performance in the Transition Economies.” *IMF Working Paper* No.132. Washington: International Monetary Fund.
- [2]. Ackerman, (2009). Corruption, Inequality, and Fairness. *Journal of Monetary Economics*, Vol.52, pp. 1227–1244.
- [3]. Akcay, S., (2006). Corruption and Human Development. *Cato Journal*, Vol. 26, No. 1 (Winter 2006). Copyright © Cato Institute. All rights reserved. Selcuk Akcay is Assistant Professor of Economics at Afyon Kocatepe University, Turkey.
- [4]. Anna, K., (2003). Resolusi 58/4 tanggal 31 Oktober 2003, *Majelis Umum PBB* United Nation Convention Against Corruption (UNCAC), 9-11 Desember 2003 United Nation Office on Drugs and Crime (UNODC).
- [5]. Calderon, C., Servén, L. ( 2005). The Effects of Infrastructure development on Growth and Income Distribution. *Central Bank of Chile, Economic Research Division*. Address: Agustinas 1180, Santiago de Chile.
- [6]. Chetwynd, E., Frances C., and Bertram, S., (2003). Corruption and Poverty: A Review of Recent Literature. Management Systems International.
- [7]. Del Mento, A., and Papagni, E. (2007). The Determinants of Corruption in Italy: Regional Panel Data Analysis. *The Developing Economics* (No.38): 325-345
- [8]. Dewi, S.N. P (2002). Pengaruh Korupsi Terhadap Pertumbuhan Investasi Domestik dan Foreign Direct Investment (11 Negara Asia Tahun 1995 – 2000). Tesis Pascasarjana Ilmu Ekonomi, *Fakultas Ekonomi*, Universitas Indonesia, Depok.
- [9]. Gupta, Davoodi, and Tiongson. (2002). Corruption and the Provision of Health Care and Education Services In Governance, Corruption, and Economic Performance. *The Journal of Government Financial Management*, Volume 5, No. 2.
- [10]. Gyimah-Brempong K. (2001). Corruption, Economic Growth, and Income Inequality in Africa, *Economics of Governance*,. 2002: 3: 183-209. E-mail : kgyimah@coba.usf.edu
- [11]. Kaufmann, D.A., Kraay, A., Mastruzzi, M. (2003). Governance matters IV: Governance indicators for 1996–2004. *Working paper*. The World Bank, Washington, DC.
- [12]. Klitgaard, R., (2001). *Controlling Corruption*, Berkeley CA: University of California Press.
- [13]. Knack, S., and Keefer, P. (1995). Institutions and Economic Performance’, *Economics and Politics*, 7, pp. 207-227
- [14]. KPPOD., (2012) *Daya Tarik Investasi Kabupaten/Kota di Indonesia*, Jakarta. Komite Pemantau Pelaksana Otonomi Daerah. Jakarta- Indonesia
- [15]. Lerrick, A., (2005). Aid to Africa at Risk: Covering Up Corruption.” *International Economic Report*. Pittsburgh, PA: Gailliot Center for Public Policy, Carnegie Mellon University.
- [16]. Loffgren, H., Robinson, S.( 2004). Public Spending, Growth and Poverty Alleviation in Sub-Saharan Africa: A Dynamic General Equilibrium Analysis. Conference “Growth, Poverty Reduction and Human Development in Africa” Heald at the Centre for the Study of African Economies, 21-22 March 2004. *International Food Research Institut*. University of Oxford, Oxford.
- [17]. Mahmud, Zein, Hasan. (2012). Sisa Lebih Perhitungan Anggaran (SiLPA), Mengkerdilkan Peran Obligasi Daerah. *Jurnal Instit Bisnis dan Informatika Indonesia* (IBII), Jakarta.
- [18]. Mauro, Paolo. (1995). Corruption and Growth. *Quarterly Journal of Economics*, 110, 681-712.

- [19]. Mauro, Paolo. (1996). The Effects of Corruption on Growth, Investment, and Government Expenditure. *IMF Working Paper WP/96/98*, Washington, DC: International Monetary Fund, (September). 1996.
- [20]. Mauro, Paolo. (1997). The Effects of Corruption on Growth, Investment, and Government Expenditure: A Cross-Sectional Analysis', in *Corruption and the Global Economy*, Ed. by Kimberly Ann Elliott (Washington, D.C., USA), 1997.
- [21]. Mauro, Paolo. (1998). Corruption and Composition of Government Expenditure *Journal of Public Economics* 69: 263–79.
- [22]. Mauro, Paolo. (2000). *The Effects of Corruption on Growth, Investment, and Government Expenditure: A Cross-Country Analysis.*, Institute for International Economics//.” <http://www.iie.com>.
- [23]. Mauro, Paolo. (2004). The Persistence of Corruption and Slow Economic Growth. IMF Staff Paper No. 51 No. 1, Washington DC.
- [24]. Mo, P.,H. (2001). Corruption and Economic Growth. *Journal of Comparative Economics*, 66–79 (2001) doi:10.1006/jceec.2000.1703, available online at <http://www.idealibrary.com> on.
- [25]. Modaki, J., and Masaviru., W.. (2012). Does The Composition of Public Expenditure matter to Economic Growth for Kenya. *Jurnal of Economics and Sustanible Development* ISSN 2222-17000 (Paper) ASSN 2222-2855,. Vol, 3, No. 3, 2012
- [26]. Pelegrini, L., and Garlagh.,R., (2004). Corruption's Effect on Growth and its Transmission Channels. *Kyklos*57:429-456.
- [27]. Podobnik, B., Shao, J., Njavro,D. (2008). Corruption and Development: A Review of Issues, *Journal of Economic Literature*, 35, pp. 1320-1346.
- [28]. Quintos, C.E.,(1995). Sustainability of the Deficit Process with Structural Shifts, *Journal of Business and Economic Statistics*, 13, pp. 409-417, 1995.
- [29]. Rajkumar, S. A., Swaroop, V. (2007). *Public Spending and Outcomes: Does Governance Matter*, 0304-3878/. See: doi 10.1016/j.jdeveco.2007.
- [30]. Ratnawati., (2011). Belanja Pemerintah, Kualitas Jalan dan Korupsi. *Komite Pemantau Pelaksanaan Otonomi Daerah* (KPPOD), Jakarta.
- [31]. Sarkar, M., and Aynul, H.. (2001). Impact of Corruption The Efficiency of Investment: Evidence From A Cross- Country Analysis. , *Asia-Pacific Development Journal*. Vol. 8, No. 2, December 2001.
- [32]. Sarwarno, J. (2007). *Analisis Jalur untuk Riset Bisnis dengan SPSS*. Penerbit C.V. Andi Offset. Yogyakarta.
- [33]. Suryadarma, D. (2008). How Corruption Diminishes the Effectiveness of Public Spending on Education in Indonesia.Arndt-Corden Department of Economics. Crawford School of Economics and Government. Australian National University daniel.suryadarma@anu.edu.au. [www.danielsuryadarma.com](http://www.danielsuryadarma.com). Forthcoming in *Bulletin of Indonesian Economic Studies*.
- [34]. Tanzi, V., and Davoodi, H.R. (2000). *Corruption, growth, and public finances*. In G.T. Abedand.
- [35]. Uneke, Okori., (2010). Corruption in Africa South of the Sahara: Bureaucratic Facilitator or Handicap to Development. [unekeo@wssu.edu](mailto:unekeo@wssu.edu) Department of Behavioral Sciences Winston-Salem State University, Winston- Salem, North Carolina Unke,. *The Journal of Pan African Studies*, vol.3, no.6, March 2010.
- [36]. Ventelou, B. (2002). Corruption In a Model of Growth: Political Reputation, Competition and Shocks.” *Journal of Public Choice*, hal. 23 – 40.
- [37]. Watanabe, M., and Yasuoka. (2001). Public Investment, Health Infrastructure and Income Growth. The Society for Economic StudiesThe University of Kitakyushu. *Working Paper Series* No. 2011-6

# Food Composition in The Hull of Sand Cucumber (*Holothuria scabra*) which is Kept at Floating Net Cages

Anita Padang<sup>1\*</sup> and Rochman Subiyanto<sup>2</sup>

<sup>1</sup>Faculty of Fisheries and Marine Science  
Darussalam University of Ambon

<sup>2</sup>Marine Aquaculture Centers Ambon

\*correspondence: anita.padang@yahoo.co.id

**Abstract.** Food is one of the factor which is important in determine organism viability in nature. Studying various kind of food which is consumed by an organism can be used as basic data in the preservation of the organism, so that the water resources decrease at nature, because environmental degradation and capture can be overcome by cultivation. As well as other aquatic organisms that are cultivated, sea cucumber can also be cultivated. Cultivation of sand cucumbers in floating net cages based on the existing cultivation facilities with the aim of policulture cultivation to maintain sand cucumbers together with other aquatic biota such as fish. The purpose of this study is to know what types of food that exist in the hull of sea cucumbers which kept in the floating net cage with sago palm waste treatment and chicken manure. The research was conducted from August to October 2016, starting with sand sea cucumber sampling which was kept in floating net cage with treatment of sago palm waste (A), chicken manure (B) and mixture of both (C). The research was continued by analyzing the contents of the hull of sea cucumber in the biology laboratory of Darussalam University of Ambon. The results of the research found that the food composition in the hull of sea cucumber with three treatments was dominated by the Diatom or Bacillariophyceae class of fitoplankton consisting of 113 species belonging to 35 genus.

**Key word:** sea cucumber, food composition, float net cages

## 1. Introduction

Food is one of the factor which important in determine organism viability in nature. Organism can grow and proliferate because energy coming from food (Nikolsky, 1963 *et* Effendi, 2002). Studying various kind of food which is consumed from an organism can be made as basic data in keeping that organism until the decline of waters resource at nature because environment degradation as well as catching can be constraint with cultivation. As such as other waters organism which cultivated, sea cucumber also need to verified what type of food in its side of, until accuracy of woof type which given become important factor in develop cultivated effort of sea cucumber which is one of fishery commodity that is more economic valuable, because possess a number of nutrients which can be used as medicines basic materials. As well as said by Farouk *et al* (2007) that nutrient of sea cucumber can cure injury, used as anticoagulant agent and trombotic, lower cholesterol degree and bloody fat, anticancer dan antitumor, antibacterial, immune stimulant, antifungal, antivirus, antimalaria and antirematic.

In cultivating woof is important substance which must be seen except type, quality of woof and woof expense. However in cultivating sea cucumber woof expense isn't necessary big because sea cucumber can exploit natural provisions which available, that is plankton. As well as research of Padang *et al* (2014a; 2014b) discover food composition in the hull of sea cucumber which collected nature consist of Diatom or Bacillariophyceae (56%), Cyanophyceae (4%), Dynophyceae (1%) and Zooplankton (39%).

In spur on growth of diatom as sea cucumber food nutrient availability needed. Necessary nutrient for fitoplankton diatom growth are phosphate, nitrate and silicate. Nutrient requirement in spur on growth of fitoplankton procurable at nature by decomposition process by bacteria used for decomposing from biogeochemical cycle. Nutrient requirement (phosphate and nitrate) at nature

procureable from sago palm waste and chicken manure. Sago palm waste can supply nutrient like N, P, S, Ca, K and Mg (Hadisuwito, 2007; Stevenson, 1982; Latupono *et al*, 2014), whereas chicken manure contains a number of nutrient like N, P, K, Ca and other substances (Lingga, 1991). Where substances mentioned from sago palm waste and chicken manure was needed for diatom bentic growth. Cultivating of sea cucumber which made all this time was kept at embed cage or penculture like research of Serang *et al* (2014), Padang *et al* (2016), meanwhile cultivate method at float net cage never been done. Cultivating of sea cucumber at float net cage based on utilization of cultivate means with purpose of policulture cultivate that is raise of sea cucumber together with biota of waters like fish.

With knowledge of natural food of sea cucumber at nature, it's easy to cultivating as what been said by Effendie (2002) that to find out food provide in nature and used by fish, can be done with food sample procure from it side. The same process can be used or sea cucumber to analyse it in side. Thereby the purpose of this research is to know what type of food in the hull of sea cucumber which keep at float net cages with sago palm waste and chicken manure treatment.

## 2. Research Method

Research was done in August-October 2016, started with procuring sample of sea cucumber which keep at float net cage at Hunut village waters with coordinate of float net cage 3°38'6.0036"LS and 128°12'52.164"BT. Treatment used is by add sago palm waste (A), chicken manure (B) and mixture of both waste (C) in to keeping container which had been gave sediment and leaves *Enhalus acroides*.



**Figure 1a.** Map Research



**Figure 1b.** Float net cage

Information O = location of float net cage

Research continue with analyzing of in the hull of sea cucumber at biology laboratory of University of Darussalam Ambon. This analysis of in side sea cucumber starting with cutting its stomach star from its anterior to its posterior to take it side. Furthermore it in side was take out and put in container which had been gave formalin 4%. The contents of it side which had been gave formalin as preservative was take with pipette 1 ml and put at haemocytometer to observe using Olympus microscope with magnification 400 times. Identification of sea cucumber side content based on book by Yamaji (1996), Newel and Newel (1977), Tomas (1977) and Van Heurck (1962). Furthermore to calculate the food composition in the hull of sea cucumber with using formula according to Fachrul (2007) :

$$\text{Composition (\%)} = \frac{\sum \text{individual of one kind}}{\text{Total}} \times 100$$

$\sum$  individual of all kinds

### 3. Result and Discussion

#### 3.1. Food Composition in the hull of Sea Cucumber

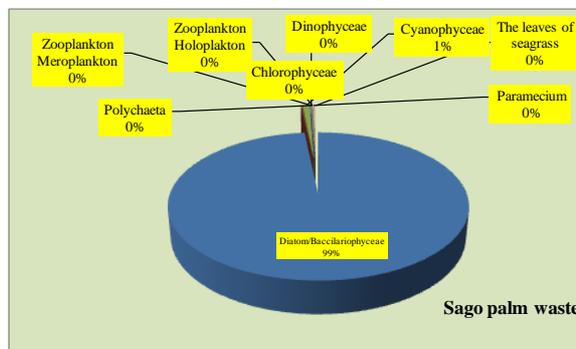
Analysis result of food composition in the hull of sea cucumber which keep at float net cage with three treatment are : A. Sago palm waste; B. Chicken manure and C. Mixture of Sago palm waste and chicken manure. Food composition in the hull of sea cucumber can be seen at table underneath.

**Table 1.** Food Composition in the hull of Sea Cucumber

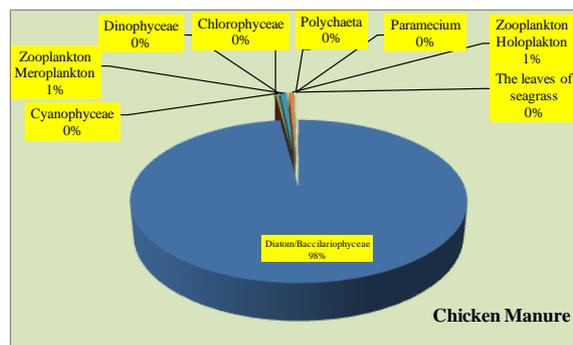
No	Type of Food	Treatment								
		Sago palm waste			Chicken manure			Sago palm waste + chicken manure		
		A1	A2	A3	B1	B2	B3	C1	C2	C3
1	Diatom/Baccilariophyceae	98.128	97.858	99.048	99.379	97.478	97.161	95.087719	97.72475	98.670213
2	Chlorophyceae	0	0.1647	0.1905	0	0	0	0	0	0.0886325
3	Cyanophyceae	1.3369	1.318	0.1905	0.1096	0.9545	0.0568	0	0	0.0886325
4	Dinophyceae	0	0	0	0	0	0	0.7017544	0	0
5	Zooplankton Meroplankton	0	0.3295	0.1905	0.4751	1.1588	0.9654	0.3508772	0.7214206	0.5546099
6	Zooplankton Holoplakton	0	0.1647	0	0.0365	0.3408	1.59	1.754386	0.7769145	0.3102837
7	Polychaeta	0	0	0	0	0.0682	0	0	0	0
8	Paramecium	0.2674	0.1647	0.381	0	0	0	0	0	0
9	The leaves of seagrass	0.2674	0	0	0	0	0.2271	2.1052632	0.7769145	0.4875887
Total		100	100	100	100	100	100	100	100	100

(source: Primary data, 2016)

Food composition in sea cucumber which keep at float net cage with three treatment woof turn out to be dominate by class Diatom fitoplankton or Baccilariophyceae (113 species) in addition of class Chlorophyceae (*Halosphaera* sp, *Chlorella* sp), Cyanophyceae (*Oscillatoria* sp, *Annabaena* sp and *Spirulina* sp) and Dinophyceae (*Peridinium* sp dan *Gymnodinium* sp).



**Figure 2.** Food composition in the hull of Sea Cucumber with Sago Palm Waste Treatment (source: Primary data, 2016)



**Figure 3.** Food composition in the hull of Sea Cucumber with Chicken Manure Treatment

(source: Primary data, 2016)



**Figure 4.** Food composition in the hull of Sea Cucumber with Sago Palm Waste + Chicken Manure Treatment

(source: Primary data, 2016)

Apparently Cultivating of sea cucumber at float net cage with sago palm and chicken manure treatment, diatom its also main food as well as sea cucumber which live at natural habitat, as found by Padang *et al* (2014a; 2014b) in analysis of side content of sea cucumber which collected from Suli beach waters that is Diatom or Bacillariophyceae 56%, Cyanophyceae 4%, Dynopyceae 1% and Zooplankton 39%, while those found by Padang *et al* (2016) which keep sea cucumber at penculture consist of Diatom class fitoplankton (89%) and Zooplankton (11%). Research of Yulianti (2009) also found Diatom which is the biggest compound in sea cucumber and from Sukmiwati research (2012) get the result of identification of food consist of 10 species of sea cucumber at Sepempang waters and Pengadah Natuna from Riau islands founded 19 genus of plankton and detritus which include in two familia: that is Chrysophyta and Cyaophyta. Chrysophyta consist of 17 genus and Cyanophyta consist of two genus tat is *Oscillatoria*, *Lyngbia*.

According to Bakus (1973) sea cucumber commonly use organic materials and detritus in its substrate. Lawrence (1987) in Sukmawati (2012) said that food of sea cucumber commonly consist of organic nutrients from sand and various biota available in sand like Diatom, Protozoa, Polichaeta, Filament Algae, Copepoda, Foraminifera, Radiolaria, sand particle along with crumbling shellfish and Mollusk Shells. Beside it sea cucumber also feeding on plankton, organic matter on shellfish, little Crustacea and Polychaeta (Macne *et al*, 1958 in Bakus, 1973). Furthermore Bakus (1973), Nesa and Rahman (1987) in Sukmiwati (2012) said that sea cucumber in addition of had deposit feeder characteristic, also had poliphpagia characteristic which feed on all things at the bottom of waters like detritus, sand particles, crumbling shellfish, benthic diatomic, green algae, blue algae filamentous which dead or alive on the surface of shellfish, red algae, coppeda and gastropoda.

Diatom class as the biggest group in the hull of sea cucumber which keep at float net cage was founded as much as 113 species which include in 35 genus. This genus is more if compare with the research of Padang *et al* (2014b) with just 25 genus and 79 species in sea cucumber which collected from nature and Padang *et all* (2015) which amount of 23 genus and 53 species in the hull of sea cucumber which keep at penculture. Distribution of diatom species in the hull of sea cucumber which keep at float net cage can be seen at next table (Table 2).

Genus from Diatom class most found in the hull of sea cucumber which keep are 23 species for *Navicula* and 17 species for *Nitzschia*. Research of Padang *et al* (2014a) hit upon *Navicula* genus for 15 species and *Nitzschia* genus for 11 species in the hull of sea cucumber which collected at nature. Furthermore research of Sukmiwati (2012) get most amount of individual food in side come from Chrysophyta that is *Cymbella* genus, with amount 130 (Sepempeng) and 149 individual (Pengadah). The highest percentage amount of food volume from Chrysophyta are 13,6% (*Cymbella*) in sea cucumber *S.nogtivagus* and 13,6% In sea cucumber *S.vastus*.

From table above can be seen treatment with chicken manure get more amount of diatom than sago palm waste and mixture of both in the hull of sea cucumber. This matter indicate that chicken manure is better in stimulate diatom growth as food for sea cucumber. As said as research of Padang *et al* (2016) which keep sea cucumber at penculture with addition of chicken manure resulting in growth progress which high enough as big as 0,14% and life passing as big as 92%, because sea cucumber

using benthic diatom as its food. Another research of Padang *et al* (2014a) result in using benthic diatom by sea cucumber by 56% and Padang *et al* (2016) by 83%.

**Table 2.** Amount of genus and species of Diatom in the hull of Sea cucumber

No	Genus	Number of Species
1	<i>Achnanthes</i>	4
2	<i>Amphora</i>	5
3	<i>Amphiprora</i>	1
4	<i>Asteromphalus</i>	1
5	<i>Bacteriastrium</i>	1
6	<i>Biddulphia</i>	2
7	<i>Chaetoceros</i>	5
8	<i>Campylodiscus</i>	3
9	<i>Cocconeis</i>	4
10	<i>Coscinodiscus</i>	1
11	<i>Cymatopleura</i>	2
12	<i>Diatomella</i>	1
13	<i>Diploneis</i>	4
14	<i>Epithemia</i>	4
15	<i>Eunotia</i>	1
16	<i>Fragilaria</i>	3
17	<i>Grammatophora</i>	1
18	<i>Gyrosigma</i>	1
19	<i>Hemiaulus</i>	3
20	<i>Hemidiscus</i>	1
21	<i>Licmophora</i>	1
22	<i>Melosira</i>	6
23	<i>Mastogloia</i>	1
24	<i>Navicula</i>	23
25	<i>Nitzschia</i>	17
26	<i>Pleurosigma</i>	3
27	<i>Rhizosolenia</i>	3
28	<i>Stauroneis</i>	1
29	<i>Striatella</i>	2
30	<i>Surirella</i>	1
31	<i>Thalassiosira</i>	3
32	<i>Thalassiothrix</i>	1
33	<i>Thalassionema</i>	1
34	<i>Triceratium</i>	1
35	<i>Van Heurckia rhomboides</i>	1
<b>Total</b>		<b>113</b>

(source: Primary data, 2016)

**Table 3.** Amount of Species Distribute in Sea Cucumber for Each Treatment

No	Genus	Number of Species		
		Sago Palm Waste	Chicken Manure	Sago Palm Waste + Chicken
1	<i>Achnanthes</i>	3	3	3
2	<i>Amphora</i>	3	4	5
3	<i>Amphiprora</i>	1	1	1
4	<i>Asteromphalus</i>	0	1	0
5	<i>Bacteriastrium</i>	0	1	1
6	<i>Biddulphia</i>	1	0	1
7	<i>Chaetoceros</i>	1	5	2
8	<i>Campylodiscus</i>	2	2	1
9	<i>Cocconeis</i>	1	2	3
10	<i>Coscinodiscus</i>	1	1	1
11	<i>Cymatopleura</i>	1	2	1
12	<i>Diatomella</i>	1	0	0
13	<i>Diploneis</i>	3	4	4
14	<i>Epithemia</i>	2	3	2
15	<i>Eunotia</i>	1	0	0
16	<i>Fragilaria</i>	2	1	2
17	<i>Grammatophora</i>	0	1	1
18	<i>Gyrosigma</i>	1	1	1
19	<i>Hemiaulus</i>	1	2	2
20	<i>Hemidiscus</i>	0	1	0
21	<i>Licmophora</i>	1	1	1
22	<i>Melosira</i>	3	5	5
23	<i>Mastogloia</i>	1	1	1
24	<i>Navicula</i>	15	14	16
25	<i>Nitzschia</i>	7	13	9
26	<i>Pleurosigma</i>	2	3	2
27	<i>Rhizosolenia</i>	2	2	1
28	<i>Stauroneis</i>	0	0	1
29	<i>Striatella</i>	1	1	2
30	<i>Surirella</i>	1	1	0
31	<i>Thalassiosira</i>	2	1	2
32	<i>Thalassiothrix</i>	1	1	1
33	<i>Thalassionema</i>	1	1	1
34	<i>Triceratium</i>	0	1	0
35	<i>Van Heurckia rhomboides</i>	1	1	1
<b>Total</b>		<b>63</b>	<b>81</b>	<b>74</b>

Beside fitoplankton turn out to be zooplankton also discover in the hull of sea cucumber. Zooplankton as first consumer, which found consist of holoplankton group (true zooplankton/lifetime as plankton) inter-alia Copepoda, Rotifera, Foraminifera, Ciliata and Cladocera along with meroplankton group (half of its lifetime as plankton) that is larva organism benthos and nekton. Especially for benthos larva organism which do settlement activity before become juvenile. Beside that Polychaeta, Paramecium and lamun leaves also founded.

#### 4. Conclusion

Based on the result of the research, can be concluded that:

1. Food composition in sea cucumber which kept at float net cages with three treatment turn out to be dominated by diatom class fitoplankton or Bacillariophyceae
2. Diatom which found consist of 113 species which falling within 35 genus

## 5. Proposition

Be provided that there is further research about application of sea cucumber side of in direct kept at nature with sago palm waste and chicken manure treatment.

## Preference

- [1]. Bakus, G.J. 1973. The Biology and Ecology of Tropical Holothurian. In O.A. Jones and R. Endean (eds) *Geology and Biology of Coral Reefs I*: 325-367
- [2]. Effendie, M.I. 2002. *Fisheries Biology (Revised Edition)*. Publisher Yayasan Pustaka Nusantara Yogyakarta. 163 p.
- [3]. Fachrul, M.F. 2007. *Bio-ecological sampling method*. Publisher Bumi Perkasa Jakarta. 199 p.
- [4]. Hadisuwito, S. 2007. *Practical Tips to Make Liquid Compost Fertilizer*. PT. AgroMedia Pustaka. Jakarta.
- [5]. Latupono, H., S. Kepepesina and Sulakhudin. 2014. Changes in some Soil Chemical Properties Due to Sago Sago Giving as Amelioran in Tanah Masam. In: *Proceedings of the National Seminar on Strengthening Higher Education Research-Based Development (SNPP-RPT) I 2014, Volume I / 2014, ISSN: 9-772407-059004*, p. 194-200.
- [6]. Lingga, P. 1991. *Livestock Fertilizer Soil Fertilizer*. Jakarta: Spreading Self-Helpers.
- [7]. Newel, G.E and R.C. Newel. 1977. *Marine Plankton a Partical Guide*. Fifth Editon. Hutchinson Education. 244 pp.
- [8]. Padang, A. E. Lukman and M.Sangadji. 2014a. Utilization of Diatom Bentik As Food Of Sea Cucumber In The Cultivation Of Sea Cucumber. *Competitive Grant Research Report Funded DP2M DIKTI Fiscal Year 2014*
- [9]. Padang, A. E. Lukman and M.Sangadji. 2014b. Food Composition in Hulls Inside: *Jurnal AGRIKAN ISSN: 1979 6072. Faculty of Teacher Training and Education University of Muhammadiyah, Volume 7 No 2 October 2014, Hal: 26-30*
- [10]. Padang, A. E. Lukman and M.Sangadji. 2015. Utilization of Diatom Bentik As Food Of Sea Cucumber In The Cultivation Of Sea Cucumber. *Final Report of Competitive Grant Research (Second Year) Funded DP2M DIKTI Fiscal Year 2015*
- [11]. Padang, A. E. Lukman, M.Sangadji and R. Subiyanto. 2016. Maintenance of Sea Cucumber (*Holothuria scabra*) in Cage Deep In: *AGRIKAN ISSN: 1979 6072. Faculty of Teacher Training and Education University of Muhammadiyah Volume 9 Issue 2 October 2016, Page: 11-18*
- [12]. Serang, A.M., S. P. T. Rahantoknam., P. Tomatala. 2014. The Influence of Solid Sold To Growth And The Crossing Of The Chickens Of The Sea Cucumber *Holothuria Scabra* In: *Proceeding of National Seminar on Strengthening Research-Based Research of Higher Education (SNPP-RPT) I 2014, Volume I / 2014, ISSN: 9-772407-059004, Hal: 277-282*
- [13]. Stevenson, E.J. 1982. *Humus Chemistry Genesis, Composition, Reactions*. John Wiley and Sons, New York. 443 p.
- [14]. Sukmiwati, M. 2012. Natural Food Composition Different Types of Sea Cucumber from Natuna Waters of Riau Islands. *Fisheries and Marine Journal 17.1 (2012): 75-87*
- [15]. Tomas, C.R. 1997. *Identifying Marine Phytoplankton*. Academic Press Harcourt Brace & Company. 857 pp.
- [16]. Yamaji, E. E. 1966. *The Ilustration of Marine Plankton of Japan Hoikusha, Osaka, Japan, Third edition*. 536 pp.
- [17]. Yulianti. 2009. *Composition Type of Sea Cucumber Food (Holothuria) On Liang Beach Tanjung Metiela Beach Kecamatan Salahutu, Central Maluku District*. Thesis Faculty of Fisheries and Marine Sciences Darussalam University of Ambon (not published)
- [18]. Van Heurck, H. 1962. *Wheldon & Wesley, LTD and Verlag J. Crame*

# Criminal Prosecution for Audio Visual Copyright Infringement in Coastal Areas

Aries Kurniawan<sup>1)</sup>

<sup>1)</sup> Faculty of Business and Economic, University of Muhammadiyah Gresik, Gresik, Indonesia

E-mail: ariesaja@umg.ac.id

**Abstract.** Implementation of Intellectual Property Laws in South East Asia is different between parties. The research purpose to know Prosecution of Criminal Offenders for Copyright Infringement in VCD and DVD Field in Indonesia, Singapore and Malaysia. The research used qualitative method with primary and secondary data intake. The result of the research, prosecution of criminal offenders for copyright infringement in Indonesia is different between Singapore and Malaysia. Although same in ordinary offense principle, implementation property laws in Indonesia covers broadcast, showing off, circulate, or sell creation or copyright infringement product to the public. In Malaysia, illustration of copyright infringement is wider. It is content sales, leasehold, propose to sell or rent, have for other than oneself, distribute, showing off, import to Malaysia or produce pirated video compact disk or digital video disk. In Singapore, copyright infringement in VCD and DVD means sales, leasehold, offer, distribute and showing off pirated goods. The result of the research showed implementation intellectual property laws in Indonesia far for expectations with the result that not give deterrent effect for perpetrator. This is due two things specifically substantial from criminal sanctions and civil sanctions.

**Keywords:** *copyright, intellectual property, laws, infringement and prosecution.*

## 1. Introduction

Relation Intellectual Property Rights (IPRs) between humans and other countries cannot be denied. IPRs are given and inherent in industrial community or the other community to be leads to it. Existence always follows community development dynamic. So as with Indonesia people did not want intersect and involved with IPRs problem.

IPRs divided in two categories that is Copyright and Industry Property Rights. While Industry Property Right covers patent, trademark, industry design, integrated circuit layout design, trade secret, and varieties of plants (Setijarto, Nugroho Amien, 1998 : 5).

In a formal juridical manner, Indonesia introduced with copyright problem in 1912, at the time of promulgation Auteurs (Wet van September 23, 1912, Staatsblad 1912 No 600) which applicable September 23, 1912 (Imam Triyono, 1976n: 65 and Disc Eddy Damian, 2002 : 138).

Furthermore, consequently from Indonesia participation as WTO (World Trade Organization) member, Indonesia has to adjust all IPRs laws and regulation with TRIP's standard (Trade Related Aspects of Intellectual Property Rights) since 1997 and renew in 2000 and 2001. Its result from international convention in IPRs field and appropriate with intellectual property law, industry design, integrated circuit layout design, trade secrets, patent and trademark.

The problem of IPRs will reach various aspects like as technology, social, culture, and the others any aspects. However, the important aspect if connected with protection effort for intellectual creation is law aspect. The law to be expected could handle any problem, which connected with IPRs. The law should give intellectual creation protection, with the result that could afford creativity people and covered IPRs.

Technology aspect is dominant factor in development and IPRs protection. Information technology growth caused the world became narrow, easily and speedy information spread around the

world. In this condition, IPRs became important. It caused IPRs monopoly right constituted which can protect investment and it could divert.

The formal institution that managed IPRs in Indonesia is General Directorate of Intellectual Property Rights, which has been belloved Ministry of Justice Law and Human Rights. Especial to managed IPRs information has formed Directorate Information and Technology has been belloved General Directorate. This is showing that IPRs recognition in Indonesia get serious concern.

Application for registration is expected to increase because people could easy access Integral IPRs information system. Whereas with integral law development (included IPRs law) criminal offenders for copyright infringement can be reduced. Synergy, IPRs information system and integral law enforcement, in the end bring Indonesia nation life more civilized, which appreciate other people creation. Otherwise, active community support is the key to success in whole IPRs development.

Based on Law of Republic Indonesia Number 28, 2014 about Copyright, Copyright is the exclusive right of the creator that arise automatically based on the principle of declarative after an invention is embodied in a tangible form without prejudice to the restrictions in accordance with the provisions of the legislation.

Government has been set up about copyrights; however still found copyrights violations in community especially in Audio Visual Copyright in the from of Video Compacts Disk (VCD) and Digital Versatile Discs (DVD) field.

Based on information collected by researchers from Riau Island Regional Police and Batam-Rempang-Galang (Barelang) Sector Police, Police was conduct raids seller of pirated VCD and DVD.

In the end 2006 and early 2007 Barelang Sector Police had confiscated 8.707 chip pirated VCD and DVD in 12 (twelve) Batam region. Hereinafter, 15 (fifteen) people had been specified suspect.

In the end January 2007, Riau Island Regional Police success uncovers VCD reduplication case in Bunga Raya 28 Street Baloi Region Batam Island. In this uncover, the police hold in custody hundreds pirated VCD in various versions from porn VCD until music and film VCD.

Furthermore, the police commandeered multiplier machine that have 7-10 capacity product in one way. It produces minimal 150 VCD. The police had arrested Aheng, and one assistant encountered in location.

Pirated VCD and DVD case not only Indonesia monopoly especially in Batam, Singapore and Malaysia had encountered the same thing. In March 1, 2007, Malaysia Police arrested Singapore citizens aged 60 years old when recording Ghost Rider movie in Johor Bahru – Malaysia. For this action, this man was charged violate 41 (1) (g) section copy right law 1987 with RM 40,000 maximum fine or 10 years maximum jailed or both of them.

From various cases, problems still arise than should be solved so that this problem does not recur. An obstacle encountered is law enforcement in Indonesia still weak. This needs assessment in order to the problem of pirated can be solved. For that, we need a comparative study application of law with other countries as such Singapore and Malaysia.

## **2. Methods**

This research on Criminal Prosecution for Audio Visual Copyright Infringement in Coastal Areas is a study with normative and empirical combination approach. Normative law research explain stipulation in legislation that valid in the country, wich connected with the case. And then analyzed with compare between prosecuted ideal value with reality in community.

Beside that the research is use empirical combination approach that compare law decision and the rule in Law of Republic Indonesia Number 28, 2014 about Copyright and to know the factor that head off law about copyright action.

Primary data and secondary data that intake from the research in the field are collected, selected, classified, and identification to be analysed in order to get truth conclusion appropriate with the problem that we discussed. As for method, that we used to analyse this data is qualitative method. It is method of analysis that collecting, investigating data according quality, and the true, and then connected with theory from literature with the result that the answer from the problem submitted.

### 3. Result and Discussion

#### 3.1. Copyright Law Enforcement Not Optimal

Batam city is an area that consist archipelago that have broad 415 Km<sup>2</sup> (41.500 ha) or same with 67 percent Singapore broad authority. It have 1,2 million population that neighbour with Singapore strait in the north, Senayang region in the south, North Bintan in the east and the west with Karimun region and Moro. Directly adjacent with Malaysia and Singapore neighbour country. In this condition, Batam became paradise to entry illegal product including pirated VCD and DVD.

Even though outstanding pirated VCD and DVD that revealed by Police not absolute came from the two country. Pirated VCD and DVD local factories also arise from Batam.

Batam region that look like scorpion shaped have 12 (twelve) region, that is Batam Kota, Batu Aji, Batu Ampar, Belakang Padang, Bengkong, Bulang, Galang, Lubuk Baja, Nongsa, Sagulung, Sei / Sungai Beduk, and Sekupang

Based on data collected by researcher, violations in the VCD and DVD fields were in the Batam Kota, Lubuk Baja, Batu Aji and Nongsa region.

#### 3.2. Cases of Copyright Infringement

##### 1) Case in Indonesia

Arrest Yap Hau, pirated VCD case suspect who was arrested by Barelang Police Department from his house at Taman Nagoya Indah Block A, Sunday (13/5/2006) at 06.00 am. Previous police have secured 23.131-pirated VCD evidence from Yap Hau thirteen stores.

##### 2) Case in Malaysia

Three directors, include a person who is datuk title, Wednesday (18/04/06) indicted by Seksyen court in charged had 1.480 pirated Siti Nurhaliza Production (M) Sdn Bhd VCD. Datuk Soh Chun (52) with his brother Soh Choon Meng (46) and Sie Mee Er (44) confess not guilty from this charged.

They charged had pirated VCD entitled, "Siti Nurhaliza in Concert Royal Albert Hall, London disc 1", "Siti Nurhaliza in Concert Royal Albert Hall, London disc 2" and "Siti Nurhaliza in Concert Royal Albert Hall disc 3".

They in charged perpetrate a crime in Empayar Canggih Sdn Bhd building on IKS Mukim Batu Fasa 1 Industry district, at 1.30 pm on January 17th, 2006.

They in charged contravene Seksyen 41 (1) (d) copyright law 1987 and punished contravene Seksyen 41 (1) copyright law 1987 and sentenced to infringe c 2003-A 1195. For the offense, they fined minimum RM 2.000 each piece and maximum RM.20.000 if proved guilty.

Besides pirated VCD evidence, police hold in custody multiplier machine, but they confess not guilty for charges three units of multipliers calls "stamper" that used make pirated VCD. They were charged at date, time and same place for it crimes.

##### 3) Case in Singapore

Highway Video Pte Ltd and it director's, Teng Yock Poh and Teng Kem Hong had charged violate the Copyright Act (cap 63) in 32 section and Trade Marks Act 1998 :

Infringement by importation for sale or hire

32. The copyright in a literary, dramatic, musical or artistic work is infringed by a person who, without the licence of the owner of the copyright, imports an article into Singapore for the purpose of

- (a) Selling, letting for hire, or by way of trade offering or exposing for sale or hire, the article;
- (b) Distributing the article —
  - (i) For the purpose of trade; or
  - (ii) For any other purpose to an extent that will affect prejudicially the owner of the copyright; or
- (c) By way of trade exhibiting the article in public, where he knows, or ought reasonably to know, that the making of the article was carried out without the consent of the owner of the copyright. [Aust. 1968, s. 37].

So Teng Yock Poh and Teng Kem Hong charged selling and trade offering 40 (forty) cinematographic results entitled "The Duke of Mount Deer", whose copyright is owned Television Broadcast Limited (TVB), the public company that registered in Hongkong. This violation exists in Copyright Act (cap 63), in 32 section.

The defendant was also charged with violating “Television Broadcast Limited” brands right that registered in No 152/83 in class 9, which cover 40 Video Compact Discs (VCD) (section 49 (b) of Trade Marks Act Chapter 332, 1998.

### ***3.3. The Judge’s Decision in The Case of Copyright Infringement***

#### ***1) Case of Copyright Infringement in Indonesia***

Yap Hau who was charged with pirated VCDs as many as 23,131 pieces of pirated VCDs from thirteen stores were sentenced to five months with ten months probation.

Public relations of the Batam District Court, Ahmad Bondan said penalty applies if the person commits a criminal offense on probation. If the defendant made a mistake, whatever it was, like hitting a person or a similar type, then the punishment penalty for the month of confinement would apply to him.

On the contrary, if the defendant did not commit any unlawful act in the probationary period, then the five-month sentence of imprisonment will not apply to him. Other than that, Yap Hau was not charged as a pirated VCDs producer, but a seller.

Bondan explained that the indictment submitted in the trial was adjusted with the official report of the examination from the police. It was no mention of evidence in the form of production machinery.

Besides the evidence, a public prosecutor also present four witness, including producers Naga Suara Sakti Company, two assistant VCDs store belonging Yap Hau and one police who took part in the raid. From here revealed the reporting party objection with Yap Hau act than traded pirated VCDs Keris Patih band, which they are the producers. Other testimony mentions, pirated VCDs in Yap Hau store has, was purchased from from Zoom 2000 belonging fugitive Aseng, not produced by one self.

#### ***2) Case of Copyright Infringement in Malaysia***

For infringement has 1,480 pieces of pirated vcd belonging to the company Siti Norhaliza Production (M) Sdn Bhd, Datuk Soh Chun Seng (52) and his brother Soh Choon Meng (46) and Siew Mee Er (44), a minimum fined RM2,000 every pieces if proven guilty.

Besides pirated VCDs evidence, police secured multiplier machine, but they did not plead guilty against accusations of having three units of multipliers of stampers that used make pirated VCDs. The mistake was indicted on the same date, time and place.

For the second mistake, they violate seksyen 41 (1) (g) and seksyen 41 (1) (ii) copyright law 1987 with threat of punishment minimum fined RM4,000 every pieces and maximum fined RM40,000 every pieces.

#### ***3) Case of Copyright Infringement in Singapore***

Teng Yock Poh and Teng Kem Hong which seller and trader 40 (forty) cinematographic result entitled “The Duke of Mount Deer, that copyright belonging Television Broadcast Limited (TVB) be avowed breaking the Copyright (amendment) Bill on February 19th, 1998 and imposed a fine of each person \$20,000.

### ***3.4. Context Setting Copyright Act in Singapore, Malaysia and Indonesia***

**About the perpetrators of copyright infringement**, regulations in Singapore most detailed set if compared with Indonesia or Malaysia.

**About live recordings performance are copyright infringement**. There are most detailed in Malaysian copyright laws compared to the rules in Singapore and Indonesia.

**About the authorities' authority**. Among the three legislation, Malaysia copyright act No 332, 1987 explain in detail actions that are permitted by the police to investigate alleged copyright infringement cases. Details on the authority of the authority in Indonesian regulations, following the previous regulation on criminal procedural law.

**Arrangement about Copyright Council**. Arrangement in Malaysia and Indonesia are more detail in the respective laws. While in Indonesia, this detailed arrangement through government regulations.

## **4. Conclusions**

Although copyright laws are subject to change and revision several times and lastly in 2002, implementation in the field is still far from expectations, so it has not provided a deterrent effect for the perpetrators of crime. This is caused by two things namely the substance of criminal or civil sanctions of copyright regulations and low knowledge of the authority about copyright.

Substantially, criminal and civil penalties, the copyright law state the longest penalty for criminal sanctions and at most for civil sanctions. Although substantially these sanctions are the same as copyright laws in Singapore and Malaysia, but the authorities of both countries are more proactive and coordinative in cracking down on copyright infringement. The proof, from the result of a heavier copyright infringement judgment when compared with the judgment of courts in Indonesia, especially in Batam. The lack of knowledge and lack of coordination of the authority in Indonesia not to be optimal in the role of civilian government investigator who assisted the police in investigating VCDs and pirated DVDs.

Although the same adhering to the usual offense, but the contextual violations in the field of copyright in Indonesia include broadcasting, displaying, distributing, or selling to the public a creation or product of infringement of copyright or related rights. In Malaysia a broader breakdown of offenses which includes sales, leases, offers for sale or lease, owns in addition to own interest, distribution, display, importing to Malaysia or making a copy of pirated VCDs or DVDs. While in Singapore, the definition of piracy in the field of VCDs and DVDs is selling, renting, offering, distributing and displaying pirated goods.

## References

- [1]. Damian, Eddy, *Hukum Hak Cipta*, Bandung, Indonesia : Alumni, 2003.
- [2]. Usman, Rachmadi, *Hukum Hak atas Kekayaan Intelektual, Perlindungan dan Dimensi Hukumnya di Indonesia*, Bandung, Indonesia : Alumni, 2003.
- [3]. Setijarto, Nugroho Amien, “Undang-undang dan Informasi Umum Perlindungan HaKI,” *Lembaga Penelitian Universitas Gadjah Mada.*, Yogyakarta, 1998.
- [4]. Law of The Republic of Indonesia, Number 28, 2014 About Copyright
- [5]. Copyright Act of Malaysia, Act 332, 1987 About Copyright
- [6]. Copyright Act of Singapore, Chapter 63, 2006 About Copyright
- [7]. (2007) Batam Pos News Paper website. [Online]. Available: <http://www.harianbatampos.com>
- [8]. (2007) Johor Government website. [Online]. Available: <http://www.johor.dt.gov.my>
- [9]. (2007) Singapore Managing Intellectual Property website. [Online]. Available: <http://www.managingip.com/Article/1256277/Video-piracy-stamped-out.html>

# Study On Halfbeak Fish *Hemirhamphus* sp. Smoking Through Sanitation And Hygiene Approach In Sambiki Baru Village, East Morotai District, North Maluccas Province

Asy'ari<sup>1\*</sup>, Nender Puni<sup>1</sup>

<sup>1</sup> Program Study of fishery product technology,  
Faculty of Fisheries and Marine Sciences Pacific University of Morotai, Indonesia  
\*Email: asyari.ronga@gmail.com

**Abstract.** Fish Smoking is a way of processing to keep the fish durability when it comes to the consumers. The utilization of sea food is still done through traditional process. Modern processing needs some requirements that are difficult to meet by small and medium scaled fishery businessmen. The problem of traditional processing is sanitation and hygienic. Based on this reason, a study on was done on smoking process of halfbeak fish *Hemirhamphus* sp. in Sambiki Baru village, east Morotai district by using sanitation and hygienic approaches. Results showed that the acceptance of raw materials was not landed in the appropriate place of fish rather than on the coast near the smoking house. Halfbeak fish *Hemirhamphus* sp. as raw material were not put in the cool box with ice to maintain the fish quality. The process of carrying raw materials was still opened to air so that it was potential to contamination. The landed catch is first washed in sea water. The process of clipping and binding of the raw materials up to the curing process was done in open space at the sandy and dusty floor and many insects, such as flies, that inhibits the sanitation and the hygiene of the raw materials. Results exhibited that the workers did not use footwear, gloves and head cover. There were also workers who work while smoking. This study concluded that halfbeak fish smoking in Sambiki Baru village did not meet the standard of sanitation and hygiene.

**Keyword:** *Halfbeak fish, smoking, sanitation, hygiene, Morotai.*

## 1. Introduction

Morotai Island Regency consists of 5 districts and 88 villages. One of the villages in Eastern Morotai has fishing fisheries and fisheries products potentials, Sambiki Baru. This village is a coastal area with long coastline and possesses relatively abundant fish resources potency. One of the pelagic fish resources in Sambiki Baru village is halfbeak fish (*Hemirhamphus* sp.) locally called Ngawaro fish.

This fish group is one of marine commodities needed to be developed. The potential of *Hemirhamphus* sp. is high enough and distributed in Morotai waters. In optimizing the utilization of this fish potential, the development of *Hemirhamphus* sp. processing industry. Since the demand for *Hemirhamphus* sp. tends to continuously rise, the fish population has sufficiently promising market for people's economy in Sambiki Baru.

Halfbeak fish *Hemirhamphus* sp. is one of the fishes containing high water content so that they will easily be decomposed after fishing. Thus, *Hemirhamphus* sp. needs to be well handled that it can be safely consumed by human. One of the preserving technique is smoking. Fish smoking can make the fish be durable and allow to distribute from production center to the consumer. However, fish smoking practiced in Sambiki still belongs to traditional technique. This traditional fish is supported by the availability of fish resources in the production center, the high demand in the consumer level, simple technology, as well as the high number of traditional house hold processing industries.

Never the less, sanitary and hygienic aspects in traditional fish processing still requires attention and improvement in order to meet the quality standard and food safety for the consumers, so that the processing improvement can consider the use of correct processing technique, the principle of good sanitation and hygiene, and standardization from raw materials, additives, processing, to the end product that the product can meet the standard quality and is safe to be consumed.

Sanitation and hygiene in halfbeak fish *Hemirhampus* sp. smoking in Sambiki Baru are major aspects, covering environment and working facilities in order to yield good quality, attractive, healthy products for consumers. It means that the hygiene of human body is very important and needs to be considered, so that the processing of halfbeak *Hemirhampus* sp. is not contaminated with bacteria. Therefore, processing place and workers are necessary to be considered.

Halfbeak fish *Hemirhampus* sp. are usually caught to make smoked fish product due to high enough selling price and to make this processed product be of interest. Halfbeak fish group is potential to be continuously developed based upon consumer's interest for the product. This study aims to know the smoking process of *Hemirhampus* sp. based on sanitary and hygienic aspects in Sambiki Baru village, Eastern Morotai district. This study is expected to be able to provide solution for smoking product development, particularly *Hemirhampus* sp. due to its economic value, business executors, government institutions or private sectors that are active in small or large-scaled smoking businesses and become basic knowledge of educational world concerning *Hemirhampus* sp. smoking through sanitary and hygienic approach

## 2. Method and Research Procedure

This study was conducted for one month, July to August 2017 in the smoking place of halfbeak fish *Hemirhampus* sp. in Sambiki Baru village, East Morotai district, Morotai Island regency, North Maluccas Province.

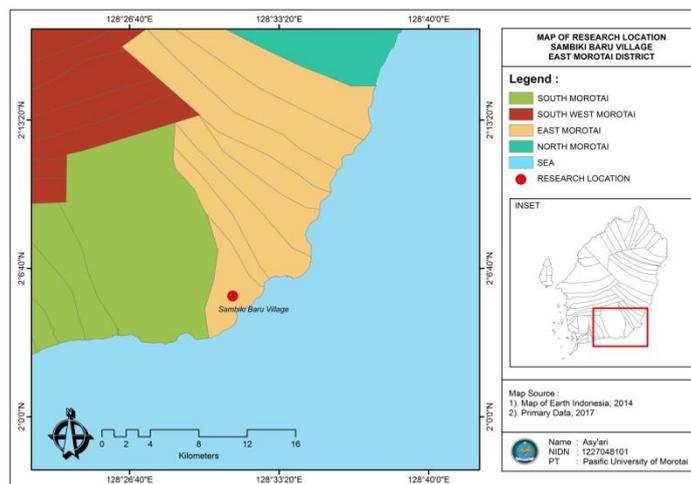


Figure 1. Map of study site

Table 1. Equipment and materials

No	Equipment and materials	Benefit
1	Questioner	Interviews
2	Writing equipment	Data recording
3	Digital camera	Photography
4	Smoking furnace	Smoking place
5	Coconut wood	Firewood
6	Scoop net	Fish bag
7	Bamboo	Clipping material
8	<i>Hemirhampus</i> sp.	Raw material

This study employed a survey method covering direct observation, involvement in *Hemirhampus* sp. smoking activities in Sambiki Baru village, interviews concerning smoking process, and documentation to obtain accurate and reliable data. The data were qualitative descriptive. The observational objects were acceptance of raw materials, clipping and fastening, air-drying, smoking, packing, sanitation, and hygiene.

### 3. Results and Discussion

#### 3.1. Preparation phase of smoking components

Bamboo-fish clipping was prepared a day before smoking. Bamboo was made with required size, then webbed in such a way to lay the fish at the place. Firewood used was coconut wood. The use of coconut wood because it is believed to be able to produce good heat for long time in smoking process. The fish smoking place had been cleaned before the fish were placed at the smoking shelf. Halfbeak fish *Hemirhamphus* sp. were caught around the waters of Sambiki Baru village and directly landed for smoking process. The catches were not put in the cool media.

#### 3.2. Halfbeak fish *Hemirhamphus* sp. smoking process in Sambiki Baru

Smoking process of *Hemirhamphus* sp. in Sambiki Baru is presented in Table 2. Smoked *Hemirhamphus* sp. production starts from the collection of *Hemirhamphus* sp. as raw material landed on the shore of the village near the smoking house and put in the scoop net locally called salapa.

**Table 2.** *Hemirhamphus* sp. smoking process.

No	Smoking phase	Procedure
1.	Fish collection on the beach	Landed fish were put in the scoop net
2.	Fish washing	The fish were washed in seawater
3.	Transportation	The fish were brought by workers
4.	Sorting and clipping	The fish were separated with size and clipped in the bamboo web.
5.	Air-drying	
6.	Hot smoking and cool	The fish were air-dried and placed on the smoking shelf.
7.	smoking	Smoking were done in hot smoking, then cool smoking
	Packing	The fish were left on the second shelf while waiting the buyers. Packing was done by piling them and put in the bag.

The fish were caught in the surrounding waters of Sambiki Baru village. Since the distance was near from the smoking place, the fishermen did not place the fish in the cool-box during fishing operation. The fish were firstly washed in seawater and brought to the smoking place. The fish were taken from the boat using hand and put in the bag. During fish transport from the shore to the smoking house did not also use ice at all because it was only about 20 M to the smoking house.

To maintain the freshness of the fish, the fish handling skill is needed. Bad fish handling could make the fish rot fast. Similarly, fish handling without cooling media, such as using ice cube, makes the fish get contact with sunlight and can accelerate decomposition. Factors considered in fish handling on board are temperature, time, and hygiene in working environment. On shore handling, such as temperature change during fish unloading, auction, packing during transportation to distribution centers or processing unit highly affects the fish freshness.



**Figure 2.** Fish transportation and supplying phase

Figure 2 indicates that low attention on sanitation and hygiene, and raw material handling, such as no cooling media, direct contact with surrounding environment or processing labors (sanitation and

hygiene), is potential to cross contamination. The fish brought to the smoking house were placed on the tarp. The labors then separated the fish with size. They did not wear gloves, sandals, or head cover at the fish sorting and did wash their hands before sorting. Mean fish size obtained ranged from 20-30 cm length. One scoop net of halfbeak fish will obtain 10 packs of fish, 100 clips of fish ready to be smoked, and a clip of fish holds 23 individuals of fish.

In fish clipping phase, the bamboo clips were prepared a day before smoking process. The bamboo clip locally called “*galafea*” was left in the smoking place and it was usually not washed before use. Bamboo was cut in 57 cm long and the clip width was 20 cm long. The use of bamboo-materialized clip aims to do the smoking process easily and safely. In this process, the fish should be quickly clipped to reduce decomposition rate from room temperature, physical damage from transportation and microorganisms. The fish clipping process is shown in Figure 3.



**Figure 3.** Fish clipping and fastening process

The fish were placed in the same size after sorting. They were tidily set following the length of bamboo, and clipped that they are not removed from the bamboo. In fish clipping phase, sanitation and hygiene were not considered, as shown in Figure 3, in which fish clipping was done on the ground, and the workers did not wear glove and sandal. Thus, the clipping phase has not met the standard sanitation and hygiene.

Field observation indicated that the smoking equipment and the smoking place for *Hemirhamphus* sp. processing in Sambiki Baru was categorized as close smoking facility with wooden frame, in which the first shelf was made of wood and the second shelf was made of bamboo. This smoking facility did not have special wall, such as concrete wall, but it was only protected in the wooden house to protect it from weather disturbance, such as rain.

Halfbeak fish *Hemirhamphus* sp. smoking in Sambiki Baru employed hot smoking and cool smoking methods. The distance of firewood to raw materials (fish) was 1 M for the first (lower) shelf and 1.70 M for the second (upper shelf). The former was used for cooking process, while the latter was used for drying process. According to Murniati and Sunarman (2000), the use of low temperature can maintain the product freshness during the process and prevent decomposition as well.

Based on the organoleptic aspects, smoked *Hemirhamphus* sp product had the following characteristics: dry, crispy texture, golden-colored appearance, typical smoke aroma, and typical taste. Moreover, product packing was carried out not in the box but using plastic line as bamboo frame fastener. Number of *Hemirhamphus* sp. packs were prepared following the numbers ordered by consumers in the form of bond. A bond of smoked *Hemirhamphus* sp. holds 10 clips each of which contains 23 individuals or 230 individuals per bond.



**Figure 4.** Smoking of *Hemirhamphus* sp.

### **3.3. Sanitation and hygiene implementation in *Hemirhamphus* sp. smoking place.**

Fish smoking processing in Sambiki Baru village, based on field observation, has not met standard sanitation and hygiene required yet, from raw material acceptance, no ice cube usage as preservatives to maintain the fish quality, uncovered fish transport potential to contamination, fish clipping process up to smoking phase, were still conducted in an open room with sandy and dusty floor, and presence of many flies could also disturb sanitation and hygiene of the raw materials.

Table 3 demonstrates that the security of water and ice cube directly contacted with raw materials of fish has not been well managed. The fish catches were washed in seawater around the coast to ensure that the raw materials were clean during the smoking process. The water used to clean the workers and the equipment was taken from water well near the smoking place. The fish were not also placed in the ice-containing box during on-board, fish landing up to fish fastening process.

According to Jaena (2009), the smoked *Hemirhamphus* sp. product treated with seawater wash has higher total plate count (TPC) than that washed in freshwater. It could result from that seawater used for fish cleaning may be contaminated and the fish handling from fishing to smoking is not hygienic. Besides, there is no water content difference between the smoked *Hemirhamphus* sp. washed with seawater and that washed with freshwater. According to Moeljanto (1992), unhygienic handling, processing, and storing techniques of raw materials or processed products could contaminate the raw materials or the processed products with microbes from surrounding environment.

The location used for the fish smoking process from landing phase was still not hygienic. The scoop net was also washed in seawater, and the fish received were only laid on the tarp, in which the tarp part directly contacted with fish was not clean and sanitized. The bamboo web used as fish clippers at placement phase was only cleaned with cloth and brush to remove sand or soil from the bamboo. The workers did not wear head cover and glove and were not in clean condition. Water used for hand wash was taken from the water well, and the toilet was near the smoking house. The smoking place did not also have specific media for hand wash and relied merely upon the well water. Other supporting cleaning aids, such as towel and soap, were not available as well.

**Table 3.** Sanitation and hygiene implementation in fish smoking place.

No	Parameter	Tingkat penerapan
1.	Security of water and ice cube used in smoking process (direct contact with fish)	Water for fish washing uses seawater and well water used for the workers is not well managed. Fish are not placed in the cooled box on the fishing boat up to landed.
2.	Sanitation of smoking place in direct contact with fish	The fish smoking place starts from fish landing in unclean condition, since the surface directly contacted with fish is not clean and sanitized.
3.	Prevention	The floor directly contacted with fish is also not clean due to using only the tent tarp.
4.	Hand washing, sanitizer, and toilet	The workers do not wear head cover, gloves, and are not allowed to wear any ornament.
5.	Storage	The water used for hand washing is well water. Toilet is too close to the smoking place in the house. No washing tank, no towel, and no soap for hand washing. No specific standard storage place. The fish are left in the smoking place before selling.

Heruwati (2002) stated that traditional fish processing is usually categorized as poor technique. Traditional smoking process is obtained hereditarily from the family members or local community's habit in fish smoking process so that its management is not well considered. Beside poor sanitation and hygiene in the smoking place, the fish-raw materials had very low quality and its food safety was poor. The preservation principle in smoking process relied upon salting and drying. Both processes help reduce the water content to kill bacteria and other microorganisms and also help increase the amount of smoked particles adhered on the fish body.

Poor hygiene practice, such as the use of unclean equipment, unwashed hand, dirty nail, long uncared raw materials, could highly expose the raw materials to pathogen contamination. Dirty environmental conditions could also cause pathogenic microbial contamination brought by dirty air particles. Other important factor affecting bacterial contamination into the smoked fish is hygienic practice of the producer (Satiyaningsih, 2001). Environmental condition, such as waste disposal around the smoking place could contribute to microbial contamination, because waste is very good medium for the development of flies, insects, rats, and could yield unpleasant smell and disturb esthetics. Contamination occurs from strong interaction between producers and fish-raw materials, so that individual hygiene of the workers, particularly hands, should be paid attention (Satiyaningsih, 2001). However, traditional fish processing still has promising prospects because people still rely on fisheries product to meet their nutrient requirements. Traditional processing development also needs skill construction through research, dissemination, and facility and infrastructural improvements. Sanitation and hygiene requirements of fisheries products are established through the Decree of Marine Affairs and Fisheries Minister Numbered 52A/KEPMEN-KP/2013 concerning Quality Standard and Safety requirements of fisheries products in production, processing, and distribution. This requirement should be followed by all fisheries business executors, individual or company, in their business activities.

Fresh fish required for the raw materials of fish processing must meet the National Standard of Indonesia (SNI 2725.3:2009: handling and processing), in which the fresh fish must be weeded, removed the gill and intestine, fished from uncontaminated waters, and organoleptically tested. Water used should follow SNI 2721.2:2009 fulfilling drinking water quality, such as clear, unsmelled, untasted, free of pathogenic bacteria, pH 1-14, and free of chemicals. Ice cube used follows SNI 01-4872.1-2006, in which the raw material should come from drinking water standard, well handled, and kept in clean place. Equipment follows SNI 2725.3:2009 concerning smoked fish handling and processing, in which all equipment used should have fine and flat surface, not peeled, not rusty, not source of microorganism contamination, not broken, and easily cleansed. All equipment must be in clean

condition before, during, and after used. Wood utilization should meet the requirements of SNI 2725.3:2009, not hazardous or potential as carcinogenic in fish.

#### 4. Conclusion

Halfbeak fish *Hemirhamphus* sp. included raw material acceptance, clipping, fastening, air-drying, smoking, and packing. The smoking method applied hot smoking with the distance of firewood to the raw materials of 1 M for 5 hours smoking and and cool smoking with the distance of firewood to the raw materials of 1.70 M. The smoking process used closed smoking equipment made of wood. However, the fish smoking processing in Sambiki Baru has not followed the standard of sanitation and hygiene. Therefore, *Hemirhamphus* sp. processing in this village should consider the sanitary and hygienic aspects. Government's attention in relation with training on sanitation and hygiene for this fish processing activities is also needed. In addition, research on organoleptic and proximate testings for halfbeak *Hemirhamphus* sp.

#### References

- [1]. National Standardization Board of Indonesia. 2000. SNI 01-4435-2000. The use of salt. Handling and processing. Jakarta. [in Indonesian]
- [2]. National Standardization Board of Indonesia. 2009. SNI 2725.2.2009. Smoked fish-Part 1: Specification. Jakarta. [in Indonesian]
- [3]. National Standardization Board of Indonesia. 2009. SNI 2725.2.2009. Smoked fish-part 2: Raw material requirements. Jakarta. [in Indonesian]
- [4]. National Standardization Board of Indonesia. 2009. SNI 2725.3.2009. Smoked fish-part 3: Handling and processing. Jakarta. [in Indonesian]
- [5]. Heruwati, S.E, 2002, Traditional fish processing: Prospects and opportunity development. Jurnal Litbang Pertanian. Jakarta. [in Indonesian]
- [6]. Jeane L. Damonglala. 2009. Water content and total bacteria in smoked halfbeak fish *Hemirhamphus* sp. under different washing method of raw materials. Jurnal Ilmiah Sains Vol. 9 No. 2. [in Indonesian]
- [7]. Moeljanto. 1992. Fisheries preservation and processing. Jakarta: Penebar Swadaya. [in Indonesian]
- [8]. Munandar A, Nurjanah, Nurimala M. 2009. Quality decline of Nile tilapia *Oreochromis niloticus* in low storing temperature under different killing and weeding methods. Jurnal Teknologi Pengolahan Hasil Perikanan Indonesia Vol XII No. 2. [in Indonesian]
- [9]. Murniati, AS dan Sunarman. 2000. Cooling, freezing, and preservation of fish. Kanisius. Yogyakarta. [in Indonesian]
- [10]. Satiyaningsih, Endang, Effect of various salt concentrations on the durability and the number of bacteria in boiled fish, FKM UNDIP, Semarang. [in Indonesian]

# Food Safety and its Regulation on School Snacks for Society's Health in Cirebon

Ayih Sutarih<sup>1</sup>, Endang Sutrisno<sup>2</sup> & Dewi Rahayu<sup>3</sup>

<sup>1</sup> Lecturer of Law Departement and Magister of Law Program University of Swadaya Gunung Jati Cirebon West Java., Indonesia  
E-mail: sutarihayih973@gmail.com

<sup>2</sup> Lecturer of Law Departement and Magister of Law Program University of Swadaya Gunung Jati Cirebon West Java, Indonesia  
E-mail: endangsutrisno94@gmail.com

<sup>3</sup> Student of Magister of Law Program University of Swadaya Gunung Jati Cirebon West Java, Indonesia  
E-mail: dedewrahayu@gmail.com

**Abstract.** Food safety is the right of each person, with no exception of students who are in growth, and their body has vulnerable immunity to diseases. One of the causes of those diseases is consuming pattern of buying snacks recklessly and become students' habit, and the serving of the snacks make it easy for food having a contact with microba as one of the causes of various diseases. Besides that, school snacks as products dominated by home industry, are assumed to have risk for health, this is caused by unhealthy food condition, the use of unclean tools for producing food, unhealthy producer, food contminated by bacteria, to the use of raw material and additives, and other dangerous substances that affect the quality and safety of the food that should be avoided to be consumed. That social reality becomes the attention in the study that is meant to review and study the implementation of regulation policy of school snacks safety in Cirebon. The approach method used in this study is normative juridical---empirical, it means that law as Applied Law Research, which is legal study about law/regulation implementation vertically and horizontally related to food safety regulation, and In Action, law is in every legal event occured in society. Legal tool about food safety management as the base of policy making and to prevent school snacks unsafety substantially is enough, but in Cirebon technical regulation in the form of regional regulation on school snacks management has not been made yet, and on its application level, there is obstacle such as legal awareness and legal obidience of society to legal norm implementation.

**Keynote: Food Safety; Legal Norms; Cirebon**

## 1. Introduction

In principle, food safety is a condition of food fulfilment for state to individual, whether its number or quality, safe, vary, nutritious, spread equally, and affordable and not against the religion, beliefs, and society culture to live healthy, active, and productive simultaneously. Food safety is a right of each person, with no exception of students in growth. One of the food resources known and liked by students is snacks. Snacks in school area can be from school's canteen or vendors outside the school. School snacks, wherever they are from, must be safe to be consumed. Specifically, food safety management in school canteen should be done directly by community in school area such as teachers, students' parents, and students [1].

Regulation on food safety covers: food sanitation, food additives, genetic recreation, food package, quality insurance and laboratory check and contaminated food. Food safety is needed to prevent food poisoning; one of the food sources that caused poisoning is snacks. Article 5 of Government Regulation Number 28 Year 2004 (PP No.28/2004) on Food safety, quality and nutrition states that the danger of food contamination covers: biological contamination, chemical

contamination, and physical contamination. The requirements of food safety consist of: food sanitation standard and food raw material standard. Next, in PP No.28/2004 it gives the authority to Food and Drugs Association (FDA) to do monitoring to the safety, quality and nutrition of food distributed to society.

One of food priority that become the special concern of FDA is school snacks that included into Society Healthy Life Movement (SHLM) issued by Ministry of Health, is a systematic and planned action done together by all nation's components with awareness, willingness and ability to do healthy life to improve the quality of life. This movement is started from family, because family is the smallest part of society in forming personality. And also the habit of consuming school snacks, the habit started from family by making healthy eating and balanced nutrition as a habit. And also SHLM such as Clean and Healthy Life Style (CHLS) and healthy food supply and acceleration of nutrition improvement [2].

Food and drinks cleanliness is very important, because it is related to human's body condition, especially food and drinks consumed by children, because they have vulnerable immunity to diseases. But most of school age children have habit to buy snacks recklessly that the food is sold on the street or near drainage and placed in open space so it is easy to be contaminated by micro bacterium, as one of the causes of many diseases known as food borne disease. Some aspects that handle snacks management that very affect food quality and safety as mentioned in Indonesian Ministry of Health Decree Number 942/Menkes/SK/VII/2003 (KepMenKes RI No942/Menkes/SK/VII/2003) on Hygiene Requirements Principle of Snacks Sanitation (HRPSS) covers: food toucher, tools, water, food material, food additives, seller facility and service. That is why the meaning of food safety is very important for consumer and producer interests, which its development has determined consumer awareness to do healthy life style, by demanding producer the duty to serve and produce food healthily and safely. And even every person has responsibility in doing this food chain activity from: production process, storage, delivery and distribution, must follow the requirements/standard of food sanitation and food raw material standard as mentioned in the existing regulation (Article 2 Point 1 of PP No. 28/2004), so it is safe to be consumed.

In contrast, food contamination also has role that determined the existence of food borne disease or food poisoning, which might be as a result of micro bacterium that contaminated food during production process, start from maintenance, harvesting or slaughtering, cleaning or washing, food preparation or production, serving and storage. Materials or organism consisting of poisonous chemical substance such as food additives, drugs, metal, and pesticide, existed in food can make food poisoning or contagious diseases. Until now, there is producer who used chemical substances that is dangerous for health in producing food, of course it will create the risk of food contamination (poisoning) as the result of micro organism activity.

This micro organism poisoning can be differentiated into food intoxication and food infection. Food intoxication is poisoning that occurred because food is contaminated by toxin in the food. Food infection is occurred because food is contaminated by makprotozoa parasite or bacteria. Food poisoning can also caused by chemical substance. All chemical substances are poisonous and will have different effects, depend on the type and amount of chemical substances that entered our body. Chemical substances often known as food additives such as preservatives, coloring, coagulating and flavoring might become poison for our body, if they are consumed in large amount. The results are from headache, digestive problem to cancer [3].

The circulation of chemical substance in society is often occurred, especially in developing country such as Indonesia, this cannot be denied. The condition of poverty, lack of human resources, lack of knowledge and understanding of the danger of consuming chemical substance become the factors that support the use of dangerous food additives in snacks. This problem occurred in Cirebon society as the study area in this research. In the study area there is a lot of non food grade chemical substance and non food additives that added into food. Food circulated in society contained dangerous additives and preservatives such as formalin, borax, and dangerous food coloring. The use of formalin

is not for food, but as non food antiseptic, germicide and preservatives. Borax functions not only as preservatives but also as food coagulant.

The reality of Cirebon that is developing into developed city affects many things in society. The dynamic of social-economic life grows faster, but this development, in the other side, also affects how society thinks, more pragmatically in seeking benefits. Economic pressure as the result of poverty and lack of awareness to the danger of consuming snacks contained chemical substance has created problem in society, even though legal norm has been formulated to give protection. As formulated in Law Number 36 Year 2009 (UU No.36 / 2009) on Health, that food and drinks used for society must be based on standard and/or health requirement and those that endanger health is prohibited to be circulated, withdrawn from circulation, circulation permit is withdrawn and confiscated to be destroyed (Article 111).

Society as consumer needs safe products for body health and soul safety, and in general for family and household prosperity. That is why we need legal norms that guarantee the safe requirements of each consumer to consume completed by right, honest and responsible information. Consumer protection seen materially and formally is very important, considering the improvement of knowledge and technology as the supporting motor for producer productivity and efficiency of goods and service produced in order to achieve both things, at the end directly or not, the consumer is the one who feels the effect [4], because generally consumer does not know what is a product made of, how is the production process and what market strategy is used. There are many consumers who do not realize their rights.

The awareness of right is parallel to awareness of law. The higher the society awareness of right is, the higher the respect of themselves and others. Consumer education should be done through mass media and nongovernmental organization activity. Consumer interest in consumer protection is in soul, health, and consumer family interest. In the perspective of law enforcement, legal sanction for the violation is weak, only administrative sanction.

Weak sanctions caused the circulation of unhygienic school snacks, unfulfilled food sanitation standard and food raw material standard, and also dangerous food additives so the food is not safe to be consumed. That condition can create basic question how is the implementation of Cirebon government policy of school snacks safety management to protect students health in elementary schools in Cirebon. The aim of this study is to study how is the implementation of regional government policy to give food safety because Cirebon government has not been able yet to make regulation to manage school snacks problem in Cirebon.

## **2. Research Methods**

This research is legal research using normative juridical-empirical approach. It means in this research law is as Applied Law Research, which is law research on normative law implementation used and is the basic study, that legal norm related to written law, those are Law No.36 / 2009 on Health, Law No.18 / 2012 on Food, Law No.8 / 1999 on Consumer Protection; Government regulation no. 28/2004 on Safety. Quality and Nutrition of Food, Minister of Health Decree No 942 / 2003 on Requirement Principle of School Snacks Hygiene Sanitation, Minister of Health Decree No. 33 Year 2012 on Food Additives, and Regulation of Indonesian FDA Chief No.36/2013 on Maximum Limit of Food Preservatives Usage. In action, on every law action occurred in society, as the material to be studied so we get legal basic used to manage school snacks safety. Focus of normative juridical-empirical research is the implementation of normative law In Concreto on certain event and the result achieved is suitable with the fact. Normative-empirical law research consists of 3 (three) approaches: Non Judicial Case Study, this is legal case approach without conflict, without court interference, Judicial Case Study is case study approach because of the conflict resolved through court decision, and the third, the situation has not occurred or finished yet [5].

### 3. Theoretical Foundation

In Consumer Protection Law, it is mentioned that one of consumer rights is the right of correct, clear and honest information on condition and guarantee of goods and/or services. Consumer right is often ignored, consumer do not get honest information from business person on the product they sold.

The right of children's health is part of human rights that must be guaranteed, protected, and fulfilled by parents, society, and government. Article 28 of 1945 Constitution of Indonesia regulates that every child has the right of life, development and growth continuance.

Regulation in food safety area is enough; the problem is on its implementation through monitoring and law enforcement that is inconsistent and the weak sanction. The reality faced by law is waiting social change process into crystallization level and certain wealth to create benefit, norms and new legal institution. This reality caused perception in society that law is always in process and work slowly to follow the action, but if that social change happened fast and create problem in society, the one that directly affected is the law [6].

Regulation on consumer right has been regulated in Article 4 of Consumer Protection Law, consumer has the right to get law protection if the right of consumer is violated, the rights that are stated in Consumer Protection Law, consumer gets effective law protection in order to save the implementation of consumer protection regulation and guarantee the social justice. To implement those regulations society participation is needed in general and parents in particular to monitor school snacks.

Food safety problem becomes strategic issue these days. In Article 5 point 5 of Law No.18 / 2012 on Food, food safety is a condition and effort needed to prevent food from biological, chemical contamination and other disturbing, losing and dangerous substance to human health and are not against the religion, beliefs, and culture of society so it is safe to be consumed.

Food regulation stated in regulations which are: Law No. 36 / 2009 on Health, Law No 18 / 2012, Law No. 8 /1999 on Consumer Protection, Government Regulation No 28 / 2004 on Food Safety, Quality and Nutrition, Indonesian Minister of Health Decree No. 942 / 2003 on Requirement Principle of Snacks Hygiene Sanitation, Indonesian Minister of Health Decree No. 33 / 2012 on Food Additives. Indonesian Minister of Health Decree No. 942/MENKES/SK/VII/2003 on Requirement Principle of Snacks Hygiene Sanitation states that snacks as food and drinks produced by food producer in selling place and or served as fast food to be sold for public besides served in catering, restaurant, and hotel.

National action of snacks since 2011, with focusing on target of elementary school community. The next stage is the development of food safety in secondary school. The development program in secondary school focuses on school community empowerment concept. Strategy of food safety awareness improvement in school community is done by strengthening management system of school snacks safety. Besides the role of headmaster, teachers, school community and canteen attendant, students role as agent of change of food safety is the strategic role [7].

Agent of change of food safety can be interpreted as the person who affects target of change to make the right decision in preventing biological, chemical contamination and other substance that disturbs, loses, and danger for health and are not against the religion, beliefs, and society culture so it is safe to be consumed. The role of agent of change of food safety in food safety management in school is :

1. As the example of school community motor (especially for fellow school mate to accustomed food safety);
2. As the connector of students and school to hold food safety program;
3. Coordinating with school food safety team to formulate and give creative ideas related to food safety campaign.

Policy sated by government is suitable with the purpose. Public policy has the characteristics [8]:

- a. Public policy is an action that tends to the aim rather than random and coincidental behavior and attitude. Public policy in modern political system is a planned action;

- b. Policy consists of related and patterned actions that direct to certain purpose done by government officials and are not individual decision. Policy does not cover the decision to make law in certain area, but it is followed by decisions related to the implementation and application force;
- c. Policy relates to what is government done in certain area;
- d. Public policy might be in positive form, might be in negative form, the possibility covers government official decisions not to take do any actions in problems which government interference is needed.

#### **4. Research Findings**

Cirebon government policy of health development in school snacks safety is the implementation of Law No. 18 / 2012 in article 50 that government and/or regional government is obligated to guide those who distributed food. The guidance aim is to make every party able to implement good distribution. Government and/or regional government do the promotion to increase the use of local food product. Government and/or regional government do the promotion abroad to increase food product marketing.

One of the targets of food safety is increasing society participation in health action by doing clean and healthy behavior in every aspect, and increasing society protection of inconsumable food/contains dangerous substance. The policy in supporting that target is by [9].

1. Improving society awareness on clean and healthy behavior in every aspect;
2. Improving society independent in creating healthy environment;
3. Improving the monitoring and guidance of fast food circulation;
4. Clean environment development program.

Cirebon government support in monitoring home industry food is done by examining food sample of the product, because most of school snacks consumed are the product of home industry.

National regulation of school snacks is regulated in Law No. 18 / 2012 on Food, Government Regulation No 28 / 2004 on Food Safety, Quality and Nutrition, the research findings indicate Cirebon government has not made technical regulation in the form of regulation on school snacks.

Regional regulation on school snacks is important to be formulated because students of elementary school mostly buy snacks in school. Snacks bought and consumed are snacks outside the school fence. Snacks circulated outside the school fence potentially creates unwanted things such as snacks containing dangerous substances whether they are dangerous chemical substances or contaminated by dangerous bacteria. The findings result of this research is there are many snacks contain bacteria such as bacteria found in ice rocks, can be dangerous for health.

Legal foundation to do guidance of school snacks is enough, start from institutional aspect to the implementation. But it is better if the legal foundation is protected to the regional area because the one that has many roles on health in regional area is the policy from the regional officials themselves.

Research findings of food serving element, many sellers used plastic food package in serving snacks for students, while the type of plastic for food are various Polyethylene Tereftalat (Pet), High Density Polyethylene (Hope), Polyvinyl Chloride (Pvc), Low Density Polyethylene, (Lope), Polypropylene (Pp), Polystyrene (Ps). Food serving using plastic also must be considered. Plastic package of Polyethylene (PE) and Polypropylene (PP) is known unharmed. In general, Polyethylene plastic (PE) is clear, flexible or not such as mineral water package (glass and bottle). The dangerous plastic is Polystyrene (PS) and Polyvinyl Chloride (PVC). Polystyrene (PS) in the form of Styrofoam (electronic device wrapping) is used as fast-food wrapping. Even catering used it as box replacement.

There are sellers who used staerofoam as food container. The use of staerofoam for food is well known issue in society not to use staerofoam as food container moreover if the food is hot, but in fact they use staerofoam.

The condition of elementary school as the object of the research allowed food seller to sell the food in school area, but most schools do not have authentic regulation on school snacks. It caused the sellers sell food in school are not suitable with healthy canteen program such as hygiene and healthy canteen requirement.

Research findings indicate most canteen owned by public schools has bad hygiene sanitation, canteen condition is not enough if it is compared to number of students, 30 to 40 students per class. Canteen has lack light, most canteens in elementary school is situated in the corner that make the light in canteen is not enough.

Most canteens in public elementary school do not have good sink, and do not concern about canteen cleanliness. Besides that, the food sold is not placed in show case to avoid dust or fly. Germ or bacterial contamination can be occurred freely. Sellers usually sold their food on the table with plastic or stainless steel tray without cover or put them on newspaper.

If regional regulation on school snacks is made, canteen standard sanitation is also fixed and legal regulations that manage healthy canteen requirement are stated in some regulation, which are:

- a. Indonesian Minister of Health Decree Number 236/Menkes/PER/IV/1997 on Health Requirement of Snacks;
- b. Indonesian Minister of Health Decree Number 942/Menkes/SK/VII/2003 on Requirement Principle of Snacks Hygiene Sanitation;
- c. Indonesian Minister of Health Number 1096/Menkes/ PER/VI/2011 on Catering Hygiene Sanitation;
- d. Minister of Health Decree Number 1429/ Menkes/ SK/ XII/ 2005 on Principle of School Environment Health Practice;
- e. Principle toward Healthy Canteen in School 2011 edition of General Directorate of Basic Education, Educational Ministry;
- f. Minister of Health Decree Number 1098/Menkes/SK/ VII/2003 on Restaurant Hygiene Sanitation Properness.

## 5. Conclusion

Cirebon government has not made technical regulation in the form of Regional Regulation on school snacks. That regulation is important to make because there are many snacks contain dangerous food additives such as rhodamin, formalin, borax that can cause poisoning, diarrhea and cancer on students. Food package that is not suitable with food package regulation and from school canteen hygiene is not enough. That social reality needs legal norm that can be used to manage and prevent possibility that endanger students health.

## 6. Suggestion

1. Cirebon government should be faster in handling circulation of school snacks contained dangerous substance and contaminated, so that regional regulation that specifically mange school snacks need to be made;
2. Cirebon government must made identity card for seller, so if the sellers moved, they still have identity the same as seller identity to make Health Department Cirebon and Food and Drugs Association easy in monitoring and giving guidance more intensively..

## References

- [1] Badan POM RI Direktorat SPKP Deputi III, *Keamanan Pangan di Kantin Sekolah*. Jakarta: Badan POM RI, 2012.
- [2] H. S. P. Manalu dan A. Suudi, "Kajian Implementasi Pembinaan Pangan Jajanan Anak Sekolah (PJAS) untuk Meningkatkan Keamanan Pangan: Peran Dinas Pendidikan dan Dinas Kesehatan Kota," *Media Penelit. dan Pengemb. Kesehat.*, vol. 26, no. 4, hal. 249–256, 2017.
- [3] Y. Nurheti, "Awat Bahaya Di Balik Lezatnya Makanan," *CV Andi Offset, Yogyakarta*, 2007.
- [4] C. T. S. Kristiyanti, *Hukum Perlindungan Konsumen*. Jakarta: Sinar Grafika, 2014.
- [5] D. . Sonata, "Metode Penelitian Hukum Normatif Dan Empiris : Karakteristik Khas Dari Metode Meneliti Hukum," *Fiat Yust. J. Ilmu Huk.*, vol. 8, no. 1, hal. 15–35, 2014.
- [6] Endang Sutrisno, *Bunga Rampai Hukum dan Globalisasi*. Yogyakarta: Penerbit Genta Press, 2009.
- [7] Y. K. Latifa, "Pengembangan Kemanan Pangan Sekolah Tingkat Menengah Di Kota Batu Jawa

- Timur,” *Majalah Keamanan Pangan*, hal. 26, 2016.
- [8] R. Anggraeni, “Evaluasi Kebijakan Publik (Evaluasi Terhadap Proses Pengadaan Anjungan Mandiri Kepegawaian Berdasarkan Perpres No. 54 Tahun 2010 di Badan Kepegawaian Daerah Kota Malang),” *J. Adm. Publik*, vol. 1, no. 1, hal. 119–127, 2013.
- [9] D. Kesehatan, *Renstra Dinas Kesehatan Kota Cirebon Tahun 2013-2018*. Kota Cirebon: Dinas Kesehatan Kota Cirebon, 2013.

# Evaluation Policy On Quality Assurance Systems at Faculty of Teacher Training and Education Mulawarman University Samarinda

Azainil<sup>1)</sup>, Usfandi Haryaka<sup>1)</sup>, Ramadiani<sup>2)</sup>

<sup>1)</sup>Management Education, Faculty of Teacher Training and Education, Mulawarman University, East Kalimantan, Indonesia

<sup>2)</sup>Computer Science, Faculty of Computer Science and Information Technology, Mulawarman University, East Kalimantan, Indonesia

Email: azainil@fkip.unml.ac.id, usfandiharyaka@ymail.com, ilkom.ramadiani@gmail.com

**Abstract.** This study aims to evaluate the substance: context, input, process, and product of the implementation of the policy of the Higher Education Quality Assurance System (SPM Dikti) in the Faculty of Teacher Training and Education Mulawarman University (FKIP UNMUL) in an effort to improve the quality of FKIP UNMUL in the national policy of education Indonesia. The method used in this research is qualitative research method, data collection technique is triangulation. The data analysis is inductive studying related to the document of quality assurance system policy in FKIP Unmul, substance analysis, implementation and result of SPM policy Dikti in FKIP UNMUL. The evaluation research model used is the Context, Input, Process and Product (CIPP) model developed by Stufflebeam. The result of the research shows that SPM Dikti in FKIP UNMUL is seen from three system that is PD Dikti, SPMI and SPME as a whole is running well in accordance with the standard set, but there are 5 programs that still show the data of lecturers and students in PD Dikti still not inputs, there are 2 average courses of study duration of students above the standard. The recommendations of this research are: (1) FKIP Unmul should regularly conduct internal quality audit in accreditation, (2) need attention concerning comparison of number of students and lecturers according to standard, (3) increase the funding budget for faculty improvement by empowering the Faculty's Quality Assurance Units (GJMF) and Quality Assurance Unit Study Program (UJMP) to conduct continuous monitoring.

**Keyword :** *Policy, Quality Assurance Systems*

## 1. Introduction

### 1.1. Background

Universities in Indonesia, including Mulawarman University in general and faculty in particular face no small challenges. The biggest challenge faced is the wave of economic globalization, information and communication and rapid technological developments.

This condition requires universities, especially faculties and study programs to make fundamental managerial changes. Then, there is a change, pressure, awareness, and customer demand about the quality of graduates of the study program that requires university managers to make changes in policy, especially commitment to the implementation of quality colleges and relevant to customer desires and competitiveness with existing universities both regional, national and international.

Contextually, universities as part of the structure and education system place a strategic position in terms of its potential as a producer of quality human resources. In the process, the creation of quality human beings requires a requirement that is not light. One of the requirements is the creation of students' mastery of the basic capabilities of the standard, ie content objective, methodological objective, and life skill objectives.

The failure of learners in mastering one, some or all of the basic skills has implications on the stigma of the low quality of higher education in terms of all aspects, ranging from elements outside the education system to elements within the college ie rectorate, faculty to the study program

Reality and problems that crystallize are what and how the policy of quality assurance system that already exists and does not exist and should exist compared with ideal conditions to eliminate the bad stigma. Three issues that crystallize in this research are quality, college and policy of quality assurance system. To answer the above challenges, it is necessary to conduct an assessment of how the quality assurance system in FKIP Mulawarman University

### **1.2. Research focus**

This research is evaluative, with the focus of research in the implementation of Policy of Quality Assurance System of Higher Education (SPM Dikti) in FKIP Unmul. Components to be evaluated are focused on the Academic field consisting of: (1) Component Context that includes the background needs, initial conditions are urgent to implement the quality assurance system, (2) Input components that include quality improvement policy planning (3) Components processes that include the implementation of quality assurance system policies and (4) Components of the results of the implementation of quality assurance system policy in FKIP Unmul.

### **1.3. Formulation of the problem**

The problems in this research are (1) How is the background of the urgent need of FKIP Unmul to apply SPM Dikti ?, (2) How is SPM policy planning Dikti in FKIP Unmul ?, (3) How is the implementation of SPM policy Dikti in FKIP Unmul? and (4) How are the results of the implementation of SPM Dikti Policy in FKIP Unmul?

### **1.4. Research purposes**

This study aims to evaluate the substance: context, input, process, and the result of the implementation of SMP Dikti policy in FKIP Unmul

### **1.5. Usefulness Research**

The results of this study are expected to be used to: (1) provide information on SPM Dikti policy in FKIP Unmul to academic and stakeholders savings, (2) give input to Faculty Leaders in order to improve SPM Dikti implementation in FKIP Unmul, (3) for the Faculty Leaders who will apply SPM-PT. and (4) As a tool for evaluating the implementation of policies and decision-making processes in the development of qualified faculty in FKIP Unmul and other faculties so that the acceleration of achieving competing human resources in the international world can be realized.

## **2. Research Methods**

### **2.1. Research Design and Methods**

This research is a policy evaluation research, with qualitative research method. This research is related to (1) policy document related to MSS in FKIP Unmul, (2) analysis of the substance, implementation and result of a policy of SPM Dikti in Unmul. The evaluation model used in this research is the context, Input, process and product (CIPP) model developed by Stufflebeam [9]. This evaluation model consists of four components namely context components, Input components, process components and product components

### **2.2. Data analysis technique**

Data analysis used in this research is descriptive analysis, that is by using and interpreting data from each indicator component of context, input, process and product evaluated. The data of the research are analyzed descriptively by presenting the result of the descriptive statistic.

### **2.3. Data Validity Check**

To check the validity of the data in order to test the level of trust can be transferred, reliable and comparable, then use triangulation techniques. Triangulation is a data checking technique that takes something from another beyond the data for checking purposes or as a benchmark against that data.

According to Patton [5], there are four kinds of triangulation techniques: (1) data triangulation, (2) triangulation of researchers, (3) methodological triangulation and (4) theoretical triangulation. According to Denzin [2], the most widely used triangulation technique is to examine data through other sources, using data from a data source in a study through such triangulation, comparing and

checking the confidence level of information obtained through time and tools different in qualitative methods.

Data collection is done by referring to the regulations relating to SPM DIKTI, observation and interview of the object under study, after that the researchers categorize the data relating to the problem under study. In this data collection, coding, sorting and organizing data are also performed. The data have been prepared and then analyzed to determine the compatibility with the formulation of the early theory, whether the data has met the criteria of theory or not. The final conclusion is obtained when the researcher has obtained the fulfilment of the theory that has been formulated.

### **3. Research Results**

#### ***3.1. Evaluation of the Policy in Context Components***

The policy of Quality Assurance System of Higher Education in FKIP UNMUL refers to National Policy of Quality Assurance System of Higher Education (SPM Dikti). SPM Dikti is a quality assurance system of higher education through 3 sub-systems, each of which is also a system, namely: (1) National Higher Education Database (PDPT). Systemic activity of collecting, processing, and storing of data and information about the implementation of higher education in all universities by DGE, to oversee the implementation of higher education by the Government. (2) Internal Quality Assurance System (SPMI), the systemic activity of university quality guarantee of higher education by universities (internally driven), to supervise the continuing improvement of higher),

Systemic activity of program and/or program feasibility assessment by BAN-PT or independent institution outside Government-recognized universities, to oversee the implementation of higher education for and on behalf of the community, as a form of public accountability.

Mulawarman University is required to carry out the mandate of the law so that the SPM Dikti Policy at Mulawarman University must be implemented. Likewise in the Faculty of Teacher Training and Education (FKIP) which is the largest faculty in Unmul consisting of 15 undergraduate courses, 5 Master's programs and 1 doctoral program should be required to carry out the mandate of the law.

To carry out the mandate, FKIP UNMUL established a working unit that handles the SPM DIKTI in the faculty of the Faculty Quality Assurance Unit (GJMF). The GJMF is responsible for coordinating, implementing, monitoring and evaluating quality assurance improvement activities at the faculty level.

##### ***3.1.1 Vision and Mission of FKIP UNMUL***

Vision FKIP Unmul is a Faculty that provides excellent service, develops scientific and innovative research, produces professional education, character and gained international recognition in 2024. The mission of FKIP UNMUL is: (1) Conducting research-based professional education and producing innovative educational products which contribute to improving the quality and welfare of communities at local, regional and international levels. (2) Developing innovative research and applied research with a focus on innovation and learning development to increase the quantity and quality of national and international scientific publications and Intellectual Property Rights (HAKI). (3) Conducting cooperation in the field of education, research and community service at the regional, national and international levels. (4) Organizing student activities to foster student self-reliance, enhancing creativity and entrepreneurial spirit and talent acumen. (5) Strengthening institutional capacity in order to provide excellent service and cooperation to produce independent, superior and character educators.

The objectives of development and strategy of achieving the vision, mission and objectives of FKIP Unmul and its milestones include 3 (three) stages as follows: (1) Strengthening the internal management of FKIP Universitas Mulawaran (2016 - 2019). lecturers, number of researchers and national and international scientific publications and enhancement of national competitiveness (2018-2022). (3) Improvement of institutional quality to gain international recognition and international competitiveness (2019-2024).

### **3.1.2. Strategic Plan (Renstra) FKIP UNMUL**

FKIP Mulawarman University has a Renstra of 2016-2020 containing 6 Chapter consisting of Chapter I. Introduction includes (a) Background, (b) Values and (c) Legal Basis. Chapter II. The objective conditions of FKIP Unmul 2013-2015 include (a) Objective Conditions of FKIP Unmul 2013-2015, (b) Internal and External Analysis (c) Strategic Issues in FKIP Unmul Unmul 2016-2020 Development. Chapter III. Vision, Mission and Objectives, Strategic Objectives, and Performance Indicators include (a) Vision and Mission, (b) Goals, (c) Key Performance Indicators. Chapter IV. Strategy and Direction of Development Policy include the Direction of Development Policy. Chapter V. Program and Activity Development Policies, and Chapter VI. The Program Implementation Framework includes (a) Planning and Budgeting Mechanisms, (b) Coordination, Governance of CTR, and Internal Control, (c) Monitoring and Evaluation, and (d) Integrated Information Systems and Technology

### **3.2. Evaluation of Policy in Input Components**

Evaluation of input component policy related to the planning of SPM DIKTI policy implementation in FKIP UNMUL. This evaluation begins with a curriculum undertaken at FKIP UNMUL, whether using KKNI-based curriculum or not.

#### **3.2.1. Curriculum**

FKIP Unmul always pays attention to quality aspects of graduates. The expected graduates are qualified and able to meet the needs of education stakeholders. Therefore FKIP unmul always review the feasibility of the curriculum from time to time. The policy-based curriculum policy at FKIP is policy-oriented at Mulawarman University, as set out in the Decree of the Minister of Education National Republic of Indonesia Number 091 / O / 2004 on the Unmul Statute, further described in the FKIP Unmul Strategic Plan (Renstra) in each period (2016-2020) and is currently being adjusted again with KKNI. Implementation of the policy is further regulated by the Rector Regulation No. 05 of 2015 on the Implementation of Education Mulawarman University especially Article 25, 26, 27, 28 and 29. Development of the curriculum is also based on the vision and mission of the dean of FKIP as stipulated in Renstra FKIP Unmul 2016- 2020, In 2016 FKIP Unmul facilitates curriculum development throughout the study program. Faculty facilitate by providing development funding, providing curriculum expert team, assisting workshop activities in designing curriculum according to science and technology development, increasingly complex job market needs, benchmarking and stakeholders as well as through assessment of KKNI-based curriculum.

The elements developed in the preparation of KKNI-based curriculum in FKIP unmul are: (1) A set of plans and arrangements regarding the content and study materials and lessons as well as its delivery and assessment which are used as guidelines for the implementation of teaching and learning activities to achieve the competence of graduates of the study program 2) The elements of competence consist of: (a) general competence; (b) special competence; (c) competence which is the founder of the college (3) The main characteristic of the main competencies as the differentiator between the study program with each other. The forms of academic end activities that must be taken by every S1 student include Field Practice Program (PPL), Real Work Lecture (KKN) and preparation of Thesis.

Later in its development Mulawarman University has begun to change the paradigm of the Teacher Centered Learning (TCL) method to student-centred learning (SCL) and the development of SAP Active Learning.

#### **3.2.2. Financing**

UNMUL has implemented a single account and orderly submit financial reports. UNMUL's financial management has implemented a one-stop system for revenue and expenditure. Based on Law no. 17 of 2000 on State Finances, receipts and expenditures are centred on Rector's account. Outside receipts always enter the Rector's account first before being distributed to the faculty and related units.

The source of FKIP of Mulawarman University comes from Funding Source from Student and Government (Central and Regional). For the period 2015 - 2017 can be Rp. 106.105.411.000, - and receipts from central and regional are Rp. 80,742,833,790, - with an average number of students per year of 6,234 people, then the operational fund per student FKIP Unmul per year is Rp. 9,490,450, -

the use of funds for the last 3 years from year to year has decreased, ie from 2015 amounting to Rp. 24,640,150,000, - in 2016 of Rp. 23,716,261,877, - and in the year 2017 of Rp. 17,462,819,539, - this is because Unmul's revenue as a whole has also decreased, thus affecting the allocation of funds in every faculty in Unmul.

### 3.2.3. Facilities and infrastructure

Facility and Infrastructure at FKIP Mulawarman University consist of Physical Facilities utilized in the implementation of Tri Dharma include Physical Building, Park, Environmental Infrastructure, and land area. The facilities have been drafted by Master Plan for its use, so it is expected to promote the educational process climate appropriately. Facility and infrastructure at FKIP Mulawarman University are still inadequate when compared with the number of students, the number of educators and education.

### 3.2.4. Educators and Education Personnel

FKIP UNMUL requires human resources consisting of educators (lecturers) and Teachers consists of: (a) administrative personnel, (b) technicians, (c) laboratory personnel, and (d) librarians. The needs of lecturers and education personnel are managed by the system of planning, recruitment, selection and dismissal, orientation and placement of employees, career development, rewards, sanctions, and remuneration of employees.

Teachers (lecturers) at FKIP Mulawarman University specified according to work unit and gender of April 2017 condition can be seen in Table 1.

**Table 1.** Qualification of Teachers Undergraduate Program FKIP Unmul Based on the Level of Education in 2017

No.	Work Unit/Studi Program	Lecturer Total				Total
		S2	%	S3	%	
1	Biology Education	7	46,67	8	53,33	15
2	Chemistry Education	12	75,00	4	25,00	16
3	Physical education	6	46,15	7	53,85	13
4	Mathematics education	13	72,22	5	27,78	18
5	Geography Education	5	83,33	1	16,67	6
6	Economic Education	11	84,62	2	15,38	13
7	PPKN	5	41,67	7	58,33	12
8	History Education	5	83,33	1	16,67	6
9	BK	6	75,00	2	25,00	8
10	PGSD	14	73,68	5	26,32	19
11	PAUD	7	77,78	2	22,22	9
12	PLS	8	88,89	1	11,11	9
13	physical education	11	91,67	1	8,33	12
14	English language education	15	57,69	11	42,31	26
15	Indonesia language Education	9	75,00	3	25,00	12
<b>TOTAL</b>		<b>135</b>	<b>69,59</b>	<b>59</b>	<b>30,41</b>	<b>194</b>

Table 1. shows that the number of lecturers of FKIP Mulawarman University in April 2017 was 194 people. Based on the qualification of education level, the qualification of lecturer of Prodi Penjaskes needs to get priority because lecturers are still educated S2 (91,67%) and S3 (8,33%) only one person, and most of the lecturers are still young.

Based on PD Dikti which is accessed in October 2017 Number of Permanent Lecturers of FKIP Unmul based on Study Program showed there are 5 study programs that the number of lecturers less than 6 people, that is study program: History Education (empty), PG PAUD (4 persons), PLS (empty), S2 Education Indonesian (empty), and S3 Science Education Management (5 people). While

the number of students who have not been in the input (empty) there are 8 Prodi namely Pend. History, PGSD, PLS, S2 Biology Teacher, S2 English Education, S2 Chemistry Education, S2 Indonesian Education and Doctoral Education Management. It is necessary to note for the legality of the diploma of the student for the lecturer and lecturer less than six for the discharge of accreditation value such as PAUD and PLS.

an addition to the educators (permanent lecturers), FKIP UNMUL also has a contract lecturer (non-permanent lecturer / Non-PNS) amounting to 47 people.

Teaching Staff at FKIP Unmul is divided into two, namely civil servants and civil servants with contract status. The recruitment personnel of the civil servant status are held centrally by Unmul while the contracting staff is conducted by FKIP Unmul through Vice Dean II, by applying for the first job to be filled and the competence expected to occupy the job.

Data of education personnel either with civil servant status or non-civil servants in FKIP UNMUL serving students of Study Program, and educational background can be seen in Table 2:

**Table 2.** Number Of Educational Staff FKIP UNMUL Year 2017.

No.	Type of Education Personnel	Number of Education Personnel with Last education								Total
		S3	S2	S1	D4	D3	D2	D1	SMA/SMK	
1	Librarian	0	0	1	0	1	0	0	-	2
2	Laboran	/								
	Technician	/								
	Analyst	/	0	0	8	0	0	0	3	11
	Operator	/								
	Programmer									
3	Administration	0	4	47	0	2	0	0	19	72
4	Security officer	0	1	1	0	0	0	0	4	6
5	Janitor	0	0	0	0	0	0	0	12	12
Total		0	5	57	0	3	0	0	38	103

### 3.2.5. College student

#### 3.2.5.1. Admissions Process

The process of enrollment of new students at Mulawarman University is carried out through the system: Penjarangan Bibit Unggul Daerah (now through Invitation), National Selection of State University Entrance, and Independent Path Selection, Cooperation Program, and Special Program set by Rector UNMUL. Prospective students interested in enrolling in education at UNMUL must meet the requirements contained in Regulation Akemiki Mulawarman University Year 2016.

In the academic year, 2017/2018 Number of Students FKIP UNMUL can be seen from Table 3

#### 3.2.6. Academic Calendar

Academic calendars include commencement of the school year, effective lecture schedules, exam schedules, holidays, and other academic activities. Mulawarman University only uses a beginning of the academic year for each academic year, ie in the first semester beginning in September. One school year is divided into two semesters, the semester of gas which runs from September to January, and even semesters which run from February to June. In the month that includes the even and odd semester is used for effective lecture schedules, exam schedules, and other academic activities such as yudisium, graduation, and Dies Natalis. While the time outside is used for street vendors, KKN, or semester holidays and national holidays. This academic calendar is issued no later than 3 (three) months prior to the commencement of the beginning of the academic year for the purposes of the academic community.

**Table 3.** FKIP Student Unmul Semester Odd State Academic Year 2017/2018

No.	Study program	Student						Total
		Registration			No Registration			
		M	F	Subtotal	L	P	Subtotal	
1	Biology Education	67	311	378	20	47	67	445
2	Chemistry Education	71	283	354	9	42	51	405
3	Physical education	71	230	301	19	29	48	349
4	Mathematics education	185	477	662	77	66	143	805
5	Geography Education	83	117	200	11	15	26	226
6	Economic Education	159	365	524	37	58	95	619
7	PPKN	173	266	439	45	31	76	515
8	History Education	69	84	153	20	17	37	190
9	BK	112	383	495	31	39	70	565
10	PGSD	148	767	915	39	82	121	1.036
11	PAUD	4	380	384	7	280	287	671
<b>Total</b>		<b>1142</b>	<b>3663</b>	<b>4805</b>	<b>315</b>	<b>706</b>	<b>1021</b>	<b>5826</b>

### 3.3. Evaluation of Policies on Process Components

#### 3.3.1. Curriculum

To carry out the faculty's vision and mission, FKIP Unmul always takes into account the quality aspect of the graduates. The expected graduates are qualified and able to meet the needs of education stakeholders. Therefore FKIP unmul always review the feasibility of the curriculum from time to time. The curriculum development policy at FKIP is policy oriented at Mulawarman University. as stated in the Unmul Statute, hereinafter described in Unmul Strategic Plan (Renstra) and is currently being adjusted again with KKNI. Development of the curriculum is also based on the vision and mission of the dean of FKIP as stipulated in Renstra FKIP Unmul. In 2016 FKIP Unmul facilitates curriculum development throughout the study program by providing development funding, providing curriculum expert team, assisting workshop activities in designing curriculum in accordance with the development of science and technology, increasing labour market needs, benchmarking and stakeholders and through the reviewing of the KKNI-based curriculum.

#### 3.3.2. Learning.

FKIP Unmul conducts monitoring and evaluation in a systematic and continuous manner and the results are used to improve the learning process. Evaluation monitoring is carried out starting from the level of study program is the implementation of teaching and learning process conducted by lecturers. The faculty provides the form used as the evaluation process. monitoring and evaluation is done once every semester, ie at the end of odd and even semesters

The monitoring and evaluation process is carried out by a faculty quality assurance group which is an extension of the Institute for Educational Quality and Quality Assurance (LP3M) at the university level. To fulfil the function GJMF has the task: a. Establish quality assurance tools and guidance, both academic and non-academic programs. b. to coordinate the implementation of quality assurance activities within the University. c. Analyzing the achievement of quality assurance results from each element or unit of the University's organs. The quality guarantee group established the standard operating procedure (SOP) of this System can be accessed online at [www.sia.unmul.ac.id](http://www.sia.unmul.ac.id)

#### 3.3.4. Assessment Standards

Assessment of education conducted to measure the ability and competence of students in receiving, understanding, and reasoning materials provided in accordance with the prescribed curriculum, and to determine changes in attitudes and skills of students, as well as to determine the success of presentation of study materials by faculty and successful implementation of the program

education. Assessment of education is done by providing an assessment of the academic ability of students in a course, practicum, PPL, KKN, and Thesis.

### 3.4. Evaluation of Policy on Output Components

#### 3.4.1. Graduate competence standard

The competency standards of graduates are guidelines for the assessment of students' graduation including competence for all courses or group of subjects covering attitudes, knowledge and skills, with the aim of preparing students to become members of a society of noble character, possessing knowledge, skills, independence and attitude to discover, develop and apply science, technology, and art, which is beneficial to humanity.

To achieve the competence of graduates, Mulawarman University establishes the Graduate Competency Standards as follows: (1) Students who passed in undergraduate, master and doctoral programs are only students who have fulfilled the requirements of graduation. (2) The graduation statement shall be set forth in the form of the Dean's Decree for diploma and undergraduate programs and/or Director's Decree for master's and doctoral programs. (3) The graduation criteria for diploma, undergraduate, master and doctoral programs are detailed in Table 4. (4) Determination of graduation minimum at study level is based on Grade Point Average obtained by students with minimum standard 2.00 for diploma and undergraduate program 2.75 for master's program, and 3.25 for doctoral program, and (5) A graduation degree with praise is only given if the students pass within the time limit  $\leq 4 + 1$  semester for undergraduate program,  $\leq 2 + 1$  semester for master program, and  $\leq 3 + 1$  semester for the doctoral program, no C grade and never repeat the course exams to achieve graduation and or improvement.

**Table 4.** The predicate of Program Graduation

No	Grade-point average	Predicate
<i>Vocational / Bachelor</i>		
1	3,51 - 4,00	With compliments
2	3,01 - 3,50	Very satisfactory
3	2,76 - 3,00	Satisfactory
4	2,00 - 2,75	Enough
<i>Profession / Specialist / Master / Doctorate</i>		
1	3,76 - 4,00	With compliments
2	3,51 - 3,75	Very satisfactory
3	3,00 - 3,50	Satisfactory

#### 3.4.2. Student achievement

The achievement of FKIP graduates from Mulawarmana University in the last 3 years in detail based on Study Program is like table 5.

**Table 5.** Number of graduates of FKIP Unmul Based on Study Program Year 2015 – 2017

No.	Study program	The average period of study (year, month)			Average GPA of graduates		
		2015	2016	2017	2015	2016	2017
1	Mathematics education	5,4	5,3	5,0	3.17	3.11	3.24
2	Physical education	4,5	4,6	4,5	3.21	3.28	3.31
3	Chemistry Education	4,7	4,7	4,6	3.30	3.28	3.31
4	Biology Education	4,2	4,5	4,6	3.32	3.36	3.36
5	Economic Education	4,9	4,7	4,8	3.29	3.32	3.30
6	English language education	5,1	4,7	4,9	3.26	3.31	3.27
7	Regional and Indonesian Language and Literature	4,6	4,6	4,7	3.26	3.26	3.26

No.	Study program	The average period of study (year, month)			Average GPA of graduates		
		2015	2016	2017	2015	2016	2017
8	Education Pancasila and civic education	4,5	4,8	4,7	3.21	3.32	3.31
9	Education Jaskesrek	4,4	4,6	4,8	3.33	3.32	3.34
10	PGSD	4,6	4,4	4,1	3.44	3.45	3.43
11	PG-PAUD	4,6	4,5	4,3	3.43	3.35	3.37
12	Guidance and counseling	4,7	4,6	4,6	3.27	3.36	3.36
13	Non-formal education	4,7	5,6	5,2	3.26	3.28	3.42
	Average S1 Program in FKIP	<b>4.7</b>	<b>4.7</b>	<b>4.68</b>	<b>3.28</b>	<b>3.31</b>	<b>3.33</b>
14	S2 Education Management			2,5			3.40
15	S2 Biology Education			2,6			3.72
16	S2 Education Bahasa Indonesia			2,7			3,85
17	S2 English Education			3,2			3,49
18	S2 Chemistry Education			2,5			3,78
	The average S2 study program			<b>2,7</b>			<b>3,60</b>
19	S3 Education Management			3,9			3,65
	The average S3 program			<b>3,9</b>			<b>3,65</b>

Table 5. shows that undergraduate study programs with an average duration of more than 5 years of study are Mathematics Education courses, and Masters study courses over 3 years are Master English Education courses.

### 3.5. Discussion

The national policy on quality assurance synergizes the Evaluation of Self-Evaluated Study Program (EPSBED), Higher Education Accreditation (among others by BAN PT), and Quality Assurance, and is named Quality Assurance System of Higher Education, abbreviated SPM DIKTI

#### 3.5.1. Evaluation in Context Components

SPM Dikti is a system of guaranteeing the quality of higher education through three sub-systems, each of which is also a system, namely: (1) Database of Higher Education (PDPT), (2) Internal Quality Assurance System (SPMI) and (3) Guarantee System External Quality (SPME).

The need of SPM DIKTI policy at FKIP Mulawarman University of Samarinda as the biggest faculty at Mulawarman University was felt once starting in 2004 since where the vision of Mulawarman University became an international standard university that was able to play a role in national development through education, research and community service based on forest environment tropical moist.

By going to international standard university inevitably Mulawarman University must apply SPM DIKTI so that every college graduate is expected to be able to compete in the world of work with other university graduates, especially universities forward nationally and internationally.

FKIP Unmul Since 2011 already has an organization that handles quality assurance system named Faculty Quality Guarantee Group (GJMF).

All the existing courses at FKIP Mulawarman University have started to run SPM DIKTI, this can be seen from some study program has conducted a workshop on quality assurance, both in the form of SPMI and SPME. In 2017 all study programs at FKIP UNMUL already have the Head of Quality Assurance Unit of Study Program (UJMP).

### **3.5.2. Evaluation of Input Components**

Based on the results of investigations on several aspects of curriculum, financing, infrastructure, educators and education staff, students, academic calendar and minimum service standards.

The result of an interview with Vice Dean I academic explains that all curriculum in study program has been referring to KKNI-based curriculum and application of active learning SAP either through lecturers training on KKNI-based Curriculum through PNPB fund or APBN through LPTK Revitalization Grant and through Pekerti and AA training.

Financing management at Mulawarman University refers to the regulation of the Minister of Finance, specifically for financing in 2016 referring to Minister of Finance Regulation No. 33 / PMK.02 / 2016 on Standard Input Costs of the Fiscal Year 2017.

Budget expenditure at FKIP Mulawarman University based on the proposals from each Work Unit/faculty in the year prior to that stated in the Annual Working Plan (RKT) and Annual Budget Plan (RAB) then forwarded to the director general of the budget to be approved. So simple language if the work unit/faculty does not propose, then they do not get it.

Facility and infrastructure in FKIP Unmul are not sufficient, for example, lecture room, laboratory room and lecture room still felt some study program, while infrastructure has begun adequate like LCD already installed in all classrooms.

The number of lecturers of FKIP UNMUL in April 2017 was 194 people, Magisterial Education (S2) amounted to 135 people (69.59%) and Doctorate (S3) amounted to 59 people (30.41%). This is when AIPT BAN to be considered the good value of human resources in the Faculty ranging 71 - 80% S2 and 36 - 65% S3, or (15-20% Professor)

### **3.5.3. Evaluation of Process Components**

Curriculum aspect at Mulawarman University starting in 2016 has been referring to KKNI-based curriculum and has applied Student Centered Learning (SCL) approach and application of active learning SAP. The curriculum at FKIP Mulawarman University the curriculum is pervaded thoroughly for 4 years, but every year is always reviewed based on the development of science and technology, for example, the ICT-based curriculum.

The process of teaching and learning at the University refers to the Process Standards in the SPM UNMUL which includes: planning of learning process, implementation of learning, assessment of learning outcomes and supervision of learning process.

Learning process planning standard is realized with syllabus availability, SAP is composed by lecturers or lecturers who take care of the course and endorsed by the faculty leadership. While the standard process of learning implementation is realized with the effectiveness of the learning process including the use of lecture space, an academic load of lecturers, the ratio of textbooks to students and the ratio of lecturers and students.

Lecturers have lessons to teach one semester at least 2 - 8 credits according to academic regulations, each subject number of face-to-face minimal 14 times and maximum 16 times. the maximum ratio of lecturers to the number of students at the faculty level is 1:28.

Starting academic year 2011/2012 Mulawarman University has applied KRS and KHS online, so the standard process of assessment has been referring to the Academic Regulations 2016 Book, where a week after UAS value must be entered in the portal SIA UNMUL, so the implementation of KRS submission is in accordance with Academic Calendar according to the applicable academic year.

### **3.5.4. Evaluation of Product Components**

Evaluation in product component is done to measure the success of achievement of policy/program objectives made by FKIP UNMUL in the application of SPM DIKTI include student satisfaction, student achievement of GPA and length of student study in applying SPM DIKTI consisting of accreditation result of BAN-PT to study program at FKIP UNMUL.

Student satisfaction in education, can be seen from IPK based on graduation competency standard consists of: With praise (cumlaude), very satisfying, satisfying and enough, good vocational program, scholar, profession, master and doctor.

Based on the result of research until August 2017, it is found that the average GPA of students who graduated for Bachelor program, the average GPA = 3.37, S2 = 3.60, and S3 = 3.65 So that when viewed from the predicate of graduation either S1, S2 and S3 has a very satisfactory predicate.

Study duration for undergraduate program average 4 years 6 months (4.5 years), average S2 duration of study 2 years 7 months (2.58 years) and average S3 3 years 9 months (3.75 years).

The implementation of Quality Assurance System Policy at FKIP Mulawarman University has been running, but its implementation to the study program has not been running well, because there are still many obstacles, especially the commitment of the faculty leader and the activeness of the Head of Quality Assurance Unit of Study Program (UJMP) and the Quality Assurance Team of Faculty (GJMF) Faculty.

The accreditation result of BAN PT based on Accreditation of Study Program in 2017 has issued accreditation for Chemistry Education S1 Program (accredited B), Study of Geography Education (accredited B) and Chemistry Education S2 Program (accredited C), and still waiting for accreditation result again for 6 study programs namely S2 Management Education Studies Program, Undergraduate Study Program S1, Study Program PLS S1, Prodi Pendidikan Indonesia S1, S2 Biology Teacher Training Program and Prodi PGSD S1.

FKIP Mulawarman University already has 1 National Assessor of BAN PT and 10 Internal Quality Auditor that can be used to assist in the preparation of accreditation form of the study program in FKIP UNMUL.

## **4. Conclusions and Recommendations**

### **4.1. Conclusion**

Based on the results of the study and discussion and considering the limitations of the policy evaluation it can be concluded as follows:

#### **4.1.1. Evaluation of the Policy in Context Components**

The background of the urgent need to implement the Higher Education Quality Assurance System (SPM-Dikti) in FKIP Mulawarman University through three sub-systems, each of which is also a system, namely: (a) National Higher Education Database (PDPT); (formerly EPSBED); (b) Internal Quality Assurance System (SPMI), and (c) External Quality Assurance System (SPME), has been running well.

Prime Service Standards are the technical specifications on the service benchmarks provided by FKIP UNMUL to the community have not been fully audited and evaluated.

The work program of Faculty Quality Assurance Group (GJMF) in preparing SPM-Dikti implementation in the faculty can support to socialize the culture of quality to the academic savitas, so academic savitas have a commitment to improving the quality of FKIP UNMUL.

Vision, Mission and Objectives FKIP UNMUL has been understood and then describes it in making the basic framework and curriculum structure to improve the competence of graduates in the world of work after the students plunge in spaciousness.

The Strategic Plan of FKIP UNMUL in 2016-2020 is prepared by trying to optimize all the potential possessed by the faculty. All aspects of the faculty's activities are analyzed and included in the preparation of the next 4-year strategic plan and need to be supported by the commitment of the executors.

#### **4.1.2. Evaluation of Policy in Input Components**

FKIP Unmul curriculum refers to the regulation on the curriculum at the university level. FKIP Unmul always takes into account the quality aspects of its graduates, constantly reviewing the feasibility of the curriculum over time. Curriculum development policy at policy-oriented FKIP at Mulawarman University which refers to Decree of Minister of National Education Republic of Indonesia Number 091 / O / 2004 about Statute Unmul, hereinafter described in FKIP Unmul Strategic Plan and currently being adjusted again with KKNi which is regulated by Rector Regulation No.05 Year 2015 on the Implementation of Education Mulawarman University. In 2016 FKIP Unmul facilitates curriculum development throughout the study program by providing development funding,

providing curriculum experts, assisting workshop activities in designing curriculum in accordance with the development of science and technology, increasing labour market needs, benchmarking and stakeholders and through the reviewing of the KKNI-based curriculum.

#### **4.1.3. Evaluation of Policies in Process Components**

Policy related to curriculum development of study program is also reflected in Renstra FKIP Unmul Year 2016-2020 which proclaimed the implementation of Workshop of KKNI Based Curriculum Development started in 2016.

The learning planning process standard is realized with the syllabus available for each course, and the Teaching Events Unit (SAP) that can be accessed by every student. Implementation of the assessment in FKIP UNMUL refers to the national standard of SNPT.

#### **4.1.4. Evaluation of Policy in Component Output**

To see the satisfaction of students in education, based on graduation competency standard which is seen from IPK predicate of graduation of the study program, specified in SPM UNMUL, that is with cum laude, very satisfy, satisfy and enough, good vocation program, bachelor degree, master and doctor.

Average GPA of students who graduated until August 2017 for Bachelor program, average GPA = 3.37, S2 = 3.60, and S3 = 3.65 So that when viewed from the predicate of graduation both S1, S2 and S3 has a very satisfactory predicate.

For the duration of study of S1 program average 4 years 6 months (4.5 years), S2 average 2 years 7 months (2.58 years) and S3 average 3 years 9 months (3.75 years).

Until the end of 2017, every study program at FKIP Unmul already has an organization that handles the quality assurance system at the level of study program which is named the Quality Assurance Unit of Study Program (UJMP).

The accreditation result of BAN PT based on Accreditation of Study Program in 2017 has issued accreditation for Chemistry Education S1 Program (accredited B), Study of Geography Education (accredited B) and Chemistry Education S2 Program (accredited C), and still waiting for accreditation result again for 6 study programs namely S2 Management Education Studies Program, Undergraduate Study Program S1, Study Program PLS S1, Prodi Pendidikan Indonesia S1, S2 Biology Teacher Training Program and Prodi PGSD S1.

FKIP Mulawarman University already has 1 National Assessor of BAN PT and 10 Internal Quality Auditor that can be used to assist in preparing accreditation program of the study program in FKIP UNMUL.

## **4.2. Recommendation**

The existence of FKIP Mulawarman University in East Kalimantan province to become a faculty that gained International recognition, need to apply for the implementation of SPM-Dikti run well, and the implementation of SPMI can achieve its objectives it should be recommended as follows: (1) FKIP Unmul should conduct a quality audit (3) increase the budget for the improvement of faculty quality by empowering the Faculty Quality Assurance Unit (GJMF) and the Quality Assurance Unit of the Study Program (UJMP) to conduct a comparative study on the number of students and the number of lecturers. continuous monitoring.

## **References**

- [1] Azainil, A., Apriliani, N. U., & Suandie, S. (2018). Policy Evaluation Total Quality Management (TQM) School Applying International Organization for Standardization (ISO) in the City of Samarinda. *Journal Of Educational Review and Research*, 1(1), 25–37.
- [2] Denzin, Norman K. 2000. *Handbook of Qualitative Research*. London: Sage Publication. Inc.
- [3] Goedegebuure, et. al., 1993. *Higher Education Policy: An International and Comparative Perspective*. Oxford: Pergamon Press
- [4] Kotler, P. 2005. *Marketing Management*. New Jersey: Printice Hall Inc.

- [5] Patton, 1990 *Qualitative Evaluation and Research Method*. London; Sage Publication Ins.
- [6] Ramadiani, Atan, R., Selamat, M. H., Abdullah, R., Pa, N. C., & Azainil. (2017). User difficulties in an e-learning system. In *Proceeding - 2016 2nd International Conference on Science in Information Technology, ICSITech 2016: Information Science for Green Society and Environment*. <https://doi.org/10.1109/ICSITech.2016>.
- [7] Ramadiani, Azainil, Haryaka, U., Agus, F., & Kridalaksana, A. H. (2017). User Satisfaction Model for e-Learning Using Smartphone. *Procedia Computer Science*. <https://doi.org/10.1016/j.procs.2017.10.070>
- [8] Shattock, M., 2004. *Managing Successful Universities*. New York: Open University Press. McGraw.
- [9] Stufflebeam, D.L. and Shinkfield, A. J. 1986. *Systematic Evaluation, a Self-International Guide to Theory and Practice*, Michigan: Kluwer-Nijhoff Publishing.
- [10] O' Donell, Cyril H.K. and Weihrich, H. 1992. *Management Eighth Edition*. New York: McGraw-Hill Book Company.
- [11] Wayne, P. 1995. *Public Policy*. Edwar Elgar: Massachusett.

# A Sustainable Development of The Law Business Friendly Environment

Cindawati<sup>1</sup>

<sup>1</sup>Faculty of the law in University Palembang. South Sumatera, Indonesia

<sup>1</sup>Email : cindawati\_s@yahoo.com

**Abstract.** The purpose of the research: to analysis and explain the Development of the law business friendly environment. The method of the research with normative juridical method. The result of the research : Consumption and production to be continue the purpose “carry out the more and more good with more little,” to increase of prosperity profit to clear from activity economy with substract to used nature resources, damage and pollution in long cycle the entire life, to relate with Balance between Human and Nature or nature resources all at once to increase quality in life. A sustainable development of the law business friendly environment is the effort to close everything proverty of the form, the resist injustice and resolve of the change climate, in the Implementation to help achieve the development of plan in totality, substract the cost of economy, environment and social in the future, support the compete of economy.

**Keywords:** *A sustainable, of the law business, friendly environment*

## 1. Introduction

The basis of balance that dig to understand, certain and application in the relationship of business, especially to result a manuscript of Contract Business International. Speaking about Basis of Balance, certain limite in the relationship with Contract Business. An agreement be in balance return, should be surrender to fair from the rightness one same other. The obligations one of the party presence on the obligations other party. The character of balance return<sup>28</sup> the one an agreementt is concept importance to understand expediency of the change. An agreement of enjoyment and load of responsible (*iusten en lasten*) must to share same of the average.

An agreement Sale-Buy, buyer the obligatory to pay cost of sale as medium to get goods. Then, so that obligations seller is surrender goods, which is cost buy. Basic of the rightness for obligations one of the party can be found in the obligations one of the party, on the contrary to burden by party opponent. One upon time the party to relate with existence desire to character of balance return the mutual relate to achieve the purpose together, length to load and content the agreement is not prohibit by constitutions and rule have strength to bind, that contract of business will be holder on the basis to balance the trick has ensure or promise that agreement of business will be fair to both the party.

The element of basis to balance, The characters and in the Relationship with Business of International. The hope objective, requisite of Balance<sup>29</sup> as purpose through loyalty of social, existence in material to achieve in soul to Balance. In the agreement, the importance individual and society will be coincide to guarantor by law objective. The agreement from the corner substantive or aim and purpose it appear contradiction with decency and orderliness of public to must invalid for the law (*nietig*), and the similar of principle things will apply pleased with the agreement with the contrary to the constitutions, to clear loyalty of social is not concrete through the agreement so. The basis of balance to base the effort to achieve the situation of balance as a result to the appear an expropriation wealth is valid. Relate to the contents or mean the agreement, to increase to hope the party on the achievement which entrusted to him to imposed the expansion of the content of coverage or intent and the purpose. The high to hope, the more led to the expansion in prinsipil from the scope and the

---

<sup>28</sup> Mariam Darus Badruzaman, *Aneka Hukum Bisnis*, Alumni, Bandung, 1994, hlm 42.

<sup>29</sup> Herlien Budiono, *Asas Keseimbangan Bagi Hukum Perjanjian Indonesia*, Bandung: Citra Aditya Bakti, 2006, hlm 348.

quality of the obligation to the fastens himself in the agreement. The details of determinate of the contents or coverage of the agreement to occur with the way referring to the obligation to notice, research, and delivery to information that is with so that purpose will of the formed to occur in harmony with intent and the aim of the parties. From the base to think of the party know if the hope in the future to character objective or exactly to contains sacrifice of the party opponent to result , so that hope in the future is not pointed on the balance. The achievement in situation to balance the implication, in the contexts to hope in the future objective, the efforts to restrain aggrieved one of the party in the agreement.

The achievement to promise on both sides<sup>30</sup>, the suppose of equality, then if there imbalance, attention will be given through equality to relate the way how to agreement the formed, and not at the end of the achievements to offered in both sides

The Basis of Balance<sup>31</sup> in the Law of Contract Business or Trade of International.

In the contract business is the instrument to importance to realization of the change in the form distribution goods and service. Ratio (basic of thingking) contract to refer on the purpose to occur mutation wealth in fair (*gerechtvaardigde*) and the show to result of the law to occur profit of the party in fair (the agreement in the principle enrichment in legal). The basis of balance in language everyday to mean it word is balance (*even wicht*) the indicate on the meaning is "*A division of the load both side in the situation of equal*". A second consideration into in the realm of philosophy law trying to find answers about the idea of power bind. The basis of balance in base efforts to achieve in situation balance as result of it appear an expropriation wealth is valid. While, the Principle of the Fundamental Business International Law Contract: the basic of principle the freedom contract., the basic of principle *Pacta Sunt Servanda* (with plan good), the basic of principle The Settlement of Dispute through Arbitration, basic of principle the Freedom of Communication (Navigation), this freedom very essential for the implementation of trade international, and Base of Balance The Business International in the Law Contract.<sup>32</sup>

The harmonization with Base of Balance for the Law Contract in Trade (Business) International. The base of (harmony) is the achieve to balance between importance self and importance to relate from party opponent. Because in the contract business is the instrument to importance to realization of the change in the form division goods and service. Ratio (basic of thingking) contract to refer on the purpose to occur mutation wealth in fair (*gerechtvaardigde*) and the show to result of the law to occur profit of the party in fair (the agreement in the principle enrichment in legal).

The harmonization, according to **Hannu Honka** is homogenize the rules or principles of substantive from Law Contract.<sup>33</sup> According to **Grace Xavier**, to explain of reality of the Law Contract each in the country it self of Contract. While, Inggris has not Law Contract in especially.<sup>34</sup> The harmonization of the law, is efforts to find homogenize or the point of meet of the principles that is fundamental from a variety of the System of Law there is (will be harmonization). As a way to the harmonization can be done, as follows: the rule of constitutions national in field Contract, using standard contract, to apply of the Law Habit International (*International Customs*), the principles of the Law International (*International Legal Principles*), the verdict of Justice or Arbitration, harmmonization according to escorts of the law and doctrine of the law.

Can be done to the harmonization by The Institute or International Organization to character of the public, like PBB with the completeness, like UNCTAD (*The United Nations Conference on International Trade of Law*), UNCITRAL (*The United Commission on International Trade Law*), or through of the institutes regional for example, Uni Eropa. The role can be done by variety International Organization is with some things about certain of Contract. With product to agreement or

---

<sup>30</sup> *Ibid*

<sup>31</sup> Herlien Budiono, *Asas Keseimbangan Bagi Hukum Perjanjian.....*Of Cit, hlm 348.

<sup>32</sup> Tineke Louise Tuegeh Londong, *Asas Ketertiban Umum dan Konvensi New York 1958*, PT Citra Aditya Bakti, Bandung, 1998. hlm 25.

<sup>33</sup> Hannu Honka, *Harmonization of Contract Law Through International Trade A Nordic Perspective*, Tulane European and Civil Law Forum, 1996, p 31.

<sup>34</sup> Grace Xavier, "*Global Harmonisation of Contract Laws*", 20 (1) Const. L.J., 2004, p 3.

International Agreement or whatever the name, is way the most to attack and way most recommendation.

According to **Hannu Honka**, *Convention constitute one example of the legislative method of harmonization, another type legislation. Of course. The competence for such legislation is also based on a convention (the EC Treaty) but the legislation nevertheless differs from conventions. Factual cooperation at the preparatory stages among states will result in legislative harmonization. Finally, model laws of the previously mentioned type will also to a certain extent improve harmonization even if the result of such models is highly uncertain*".

The result of the work institutes of International and Regional. The efforts is PBB through the completeness, UNCITRAL<sup>35</sup> (*The United Commission on International Trade Law*) 1966, take over the task homogenize of the Law Trade International, has been issued of *The United Nations Convention on Contracts for the International Sale of Goods (CISG, 1980)* or convention about Law to obtain in Trade International. The purpose is create an unification or at least harmonization of the law in field in Law Contract. ICC has been codification of clause standard contract, and Eropa has success to issued *the Principles of European Contract Law (PECL)*. One the fact can not avoid is the existence variety of the System of Law in world it adult. The system of the law particular is *Common Law*, System of the Law Mixture, etc. That is Sytem of the Law most in practice in the wolrd is *Civil Law* and *Common Law*. The countries to practice of System of the law it is full (*pure*) and mixture (*mixed form*). Indonesia as country to follow of Sytem Mixed<sup>36</sup>, that is *Civil Law*, *Common Law*, The Islam Law and Custom Law (*local customary law*). System of the law in the world has similar rules main:

- a. Acknowledge *Freedom of Contract (Party Autonomy)*;
- b. Acknowledge of principle *Pacta Sunt Servanda*;
- c. Acknowledge of principle *Good Faith* in contract;
- d. Acknowledge of *Power Bind* from Practice Habit; and
- e. Acknowledge of *Overmacht* or *impossibility of performance*.

The principle *Freedom of Contract (Party Autonomy)*<sup>37</sup>, *Pacta Sunt Servanda*, *Good Faith* in the contract is principle important in Law Contract International<sup>38</sup>. The principle of practice Habit to opinion bind to avowed in variety of System Law in the world. In the scope of law large, Article 9 (2) Konvensi CISG *The (United Nations Convention on Contracts for the International Sale of Goods)* acknowledge distinct power bind this habit: *The parties are considered, unless otherwise agreed, to have impliedly made applicable to their contract or its formation a usage of which the parties known and which in international trade is widely known to, and regularly observed by, parties to contract of the type involved in the particular trade concerned*.

Recognition of the principle of the fifth that is *overmacht* or situation force has become principle recognize by System Law in generally. To all thinking and creation juridical from transaction and activities business to try realization. The balance for the parties to feel fair and proper. The Basis of Balance in the Relationship with Basis and Aspect Related of Basis Balance as Basus of Ethical<sup>39</sup>.

The basis of balance in language everyday to mean it word is balance (*even wicht*) the indicate on the meaning is "*A division of the load both side in the situation of equal*". A second consideration into in the realm of philosophy law trying to find answers about the idea of power bind.

This means that word "balance" on the side, to limited by the will of which is raised by consideration or situation profitable, and other side by conviction (will ability for) manifest result or cause to desire, in limited both side to reached balance can meaning positive.<sup>40</sup> In or through a promise, someone in psychic (*psyche*) put him in a situation with the belief that "as cause from condition to profitable" in logical will be efforts to cause right desire. Of course the desire and conviction should experienced as something that is worth or logical. This means that promise between party just will reputed bind all the

<sup>35</sup> UNCITRAL (*The United Commission on International Trade Law*) 1966

<sup>36</sup> Indonesia menganut sistem Campuran

<sup>37</sup> Yunwei Fu, *Freedom of Contract in The EU and China*. Journal of International Commercial Law and Technology, Vol.8, No.4 (2013), p. 274

<sup>38</sup> PHAM Duy Nghia, *From Marx TO market: The Debates on The Economic System in Vietsnam's Revised Constitution*, Asian Journal of Comparative law, 11 (2016), p.268

<sup>39</sup> Herlien Budiono, *Asas Keseimbangan Bagi Hukum*..... Of Cit, hlm 304.

<sup>40</sup> *Ibid*, hlm 305.

on as the balance the relationship between individual interest and public interest or the existence of a balance between the interest of both sides as each of the hope it.

The Basis of Balance as Basis of Juridical. The basis of law has function fold, that is as fundament from Law positive and as tool critical test of the system of positive law . The illustration from function fold the basis of law to given **Bruggink**<sup>41</sup> with regard to the protection of the personal living environment (*de persoonlijke levenssfeer*) to respect very high in the system of the law positive (Belanda). The benchmarks of the basis of law is maintained as ideals to be realized. Because of, according to Bruggink, basis of law even if it has realized can be functioned as a test tool critical to the System of Positive Law, that is if to occur that personal living environment it appear not or lack gets to protection. The basis of law “not only beneficial to solve new problems and open new fields, but also need required as interpret and put on the rules that can never fully covers all the issues that may arise, when facing a difficult case, will be back on basis. But in the facing to application the rule in generally, the basis will play a role, even if just to reaffirm the meaning of associated or given in such a rule. With regard to the application of rules to particular cases, then to it may have found a benckmark based on the explanation and description of the rule. A criterion should be found moving from the meaning of the fact, can be tested for its relevance for contract law, so that every time from the basis balance of the underlying agreement<sup>42</sup> between the party can be raised attachment juridical decent or fair. The basis of balance, besides must have certain characteristics, should be also consistently focused on the truth of logical and adequately is concrete. Based on the consideration it development idea that Basis of Balance can be understand as basis decent or fair, and next to accept as attachment juridical in the Law Contract. Means and Purpose with The Link Point Basis Balance. In the agreement the parties to explain desire they in the form promise. Fact that people to close of Contract based on a purpose or specific intent, Fact to show the existence intertwine with indication the emergence of the agreement, to form by parties, attachment or strength to bind and fulfillment of the agreement. Through of agreement, means and purpose the parties can to achieve. The purpose from agreement to close of the parties and become basic for strength to bind in juridical. Besides of the strength to bind juridical, there is also attachment or power in perspective psychological (feel bind) and sociological consider of society to bind. Through of agreement can to eforts of the change with regard division and exchange a goods economical although service such as a “Mutation of voluntary”, there is also mutation or displacement not voluntary, such as robbing, robbery. To achievement of purpose agreement the basic of desire has explain that is the form of promises between parties to related. In the Contract Business is the instrument to importance realized of the change in the form division goods and service. Ratio (basic of thingking) contract to refer on the purpose to occur mutation wealth in fair (*gerechtvaardigde*) and the show to result of the law to occur profit of the party in fair (the agreement in the principle enrichment in legal). The contract embodied in the intent and purpose of “creating situation” which better for both parties. So that exchange as enrichment to fair, can be viewed as *exchange*, that a achievement must balance with contraprestation. An exchange in reciprocity is a key concept for the creation of justice the above. The contract has three basic purposes, as follow : *First purpose*, from contract is impose a promise and protect the expectation of reasonalbe emerging from it. *Second purposes*, from the contract is restrain enrichment (eforts enrich itself) that is done is not fair or not true. *Third purposes*, is for restrain kinds of harm (*to prevent certain kinds of harm*). Besides of three purposes to describe above, according to Herlien Budiono, added purpose essential that is derived from the basis of (harmony), that is *fourth purposes* from contract is to achieve of Balance between important itself and important to relate from the party opponent.<sup>43</sup> *The Promise as Link Point*. In the agreement, to explain desire obvious, offer and acceptance is considered as an element constitutive of the binding force of contractual. The offer andd request to contain a promise. However, the existence of a promise of reciprocal not necessarily to form agreement. A new agreement is formed if there is an encounter or a conformity between appointments aimed one against the other. That is true, that promise to expression of the will stated, the promise given include the will and the authority to realize the promise. The important of attitude in

---

<sup>41</sup> Bruggink, J.J.H., *Refleksi Tentang Hukum*, Cet. Kedua, Alih Bahasa: B. Arief Sidharta, Citra Aditya Bakti, Bandung, 1999, hlm 23

<sup>42</sup> Pasal 1320 KUHPerdata

<sup>43</sup> *Ibid*, hlm 310.

the form promise, that itself implies the power of bind, in the means to contain itself. Promise is potential factor, link point real desire or duly referred to the parties in draft to assert relationship certain law (Bound on the word and deed, and the ability to make it happen). An Achievement of Balance.

Promise of individual and obligations *to prevent certain kinds of harm*, the implies that agreement is one of the “process’ which began from an appointment to deal (free) from the parties and the end with achievement of the purpose, that is the agreement to achieve in spirit or soul of Balance. *The Hope of Objective*, The requisite of balance as purpose through propriety of social, existence of imaterill reached in the soul balance. In the agreement, importance of individual and society will be together to security by law objective. The agreement from corner of substantive or meand and purpose it appear to determine with morality or orderliness of public to cancel of the law (*nietig*). And the principle, it similar will apply pleased with the agreement to determine with constitution. To clear of propriety social were intangible through the agreement so. The purpose of the research: analysis and describe of the development in constitution business to knowledge environment. For to write exciting to research with formulation of the problems:

**Formulation of the Problems:**

1. Are the sustainable development?
2. What is a sustainable development in the law business friendly environment?

**3. Method of the Research:** *using the juridical normative method*

**The Purpose of the Research:** a analysis and describe a sustainable development in the law business environment.

**4. Discussions**

A sustainable development<sup>44</sup> is the development that comply needs of the present without sacrificed the ability of future generations to comply their own needs. It contents within it two concepts:

1. The concept “needs”, especially the main needs the poor in the world, the main priority must to given; and
2. The idea of limitations applied by the country of technology and social organization in the ability of the environment to comply needs of the present and future.<sup>45</sup>

A sustainable development with Basis of Balance to base in the efforts to achieve a situation of balance as result it must to appear transfer wealth in valid. With regard to the content or intent of the agreement to increase to the hope of the parties for the achievement of which entrusted to him to impose the expansion of the scope of the content or the intent and purpose. The higher the hope, the more it boils down to the expansion in principle of the scope and quality of the obligations of the parties to bind themselves in the agreement. Details of the provision the content or scope of the agreement to occurs by way of the balance between human and nature. The balance to indicate of the meaning a “*situation of the division of the load on either side area in a balanced*”.

On 1 January 2016, 17 A Sustainable Development Goals (SDGs)<sup>46</sup> adopted the world leaders in September 2015 a summit historic. Fifteen years to in front of with new Goals universal to obtain to all countries will be mobilization The Efforts to end everything of the form proverty, fight injustice and resolve climate change, while ensure that no one is left behind.<sup>47</sup>

The Balance between Human and nature with exploit of the welfare and benefit of existing on the earth, so as not abandoned. Consumption and production a sustainable is about promote resources and energy efficiency, a sustainable of infrastructure, and supply access through basic of service, green works and proper and living of quality better for the all. The implementation to help for the achieve of plan in totality, lack of economy the cost, environment and social in future, strengthen economic competitiveness and reduce poverty. The balance between human with human, in consumption and production a sustainable of the purpose: “do more and better with less”, to increase

<sup>44</sup> <https://id.m.wikipedia.org/wiki/pemb>

<sup>45</sup> [www.un-document.net/ocf-02htm](http://www.un-document.net/ocf-02htm)

<sup>46</sup> [www.sustainabledevelopment.un.org](http://www.sustainabledevelopment.un.org), diakses 22 desember 2017

<sup>47</sup> <http://www.unicwash.org/>

of prosperity to clear profit from activities economy with lack using resources, damage and pollution along the whole life cycle, while improving the quality of life. It involve a variety of stakeholders, to include business, consumer, made of the police, researcher, scientist, retailer, media, and institute of the cooperation development.

#### 4.1. Consumer

Requires approach systematical and cooperation between the perpetrator opeartes in the supply chain, from producer to consumer the end. This **involve of consumer** through raising education and coaching to consumer a sustainable with information, standard and label engage in public procurement sustainable.<sup>48</sup>

A sustainable of Consumer and production important because the implementation of framework 10 years from the program of consumer and production a sustainable. All country to develop consideration the development and ability from the development countries.

1. On 2020, to achieve **management friendly environment**<sup>49</sup> from chemicals and all wastes along has their life cycle, in appropriate with the international framework that has been agreed, in significance to lack freedom their to air, water and land for the minimization the impact bad through healthy of human and environment.
2. On 2030, to achieve management a sustainable and efficiency the using nature resources<sup>50</sup>. On 2030, divide the two per capita global leftovers food in the level of retail and consumer and reduce the loss of food together with the production and supply chain, include losses in the harvest. In substantive reduce waste through prevention, recycling and the use of the back. An encourage major companies and transnational, for the adopted practices a sustainable and for the integration information a sustainable in cycle their report. The promote of practice of the public procurement sustainable, appropriate with the policy and priority national. Make sure that people everywhere have the information relevant and awareness for sustainable development with a lifestyle that in harmony with nature. The support of countries *to strengthen the capacity science and technology* for the move to direct pattern more sustainable consumption and production. Development and apply the tools to monitor the impact sustainable development to tourism sustained that created the work and promote the local culture and products. Rationalizes subsidies fossil fuels that are not efficient prompted consumption of extravagant by removing distorsi market, appropriate with situation national, include with restructuring of tax and arrange out their subsidies dangerous, if there is for reflect ipact their environment, with fully pay attention to the special needs and conditions developing countries and minimize the impact of negative that might on the development of them in ways that protects the poor and communities affected the impact.

On 12 July 2016 The agreement international to aim ward off illegal fishing<sup>51</sup> “marks the begining of a new era,; but the fast actions to need for the certain that implementation to effective, Food and Agriculture Organization (FAO). A corn to save for the consumption livestock, the cost food of global to rise on June; prospect harvest wheat to strong- agency PBB, Hunger and endurance of food, News, a substainable consumption and production.

---

<sup>48</sup> <https://suistanabledevelopment.un.org/topics/suistananbleconsumtionandprod>

<sup>49</sup> Pengelolaan ramah lingkungan dari bahan kimia dan semua limbah sepanjang siklus hidup mereka, sesuai dengan kerangka kerja internasional yang telah disepakati, secara signifikan mengurangi pembebasan mereka ke udara, air dan tanah untuk meminimalkan dampak buruk terhadap kesehatan manusia dan lingkungan

<sup>50</sup> UNDP support to implementation of the 2030 agenda sustainable development UNDP support to implementation of the 2030 agenda sustainable development <http://www.unicwash.org/>

<sup>50</sup> <https://suistanabledevelopment.un.org/topics/suistananbleconsumtionandprod>

<sup>50</sup> UNDP support to implementation of the 2030 agenda sustainable development UNDP , diakses tanggal 20 oktober 2017

<sup>51</sup> Penangkapan ikan ilegal adalah penangkapan ikan yang dilakukan dengan melanggar hukum yang telah ditetapkan di perairan suatu Negara.

#### 4.2. A Sustainable of Consumption and Production.

Every years, it is estimated one-third of all the food is the equivalent of 1,3 miliar ton to end decompose in place rubbish from consumer and retailer, or damage because transportation and harvest of practice to bad.

1. If people around the world turn to the ball energy-saving lamps the world would save US \$ 120 miliar every years.
2. To be the population of the global to reached 9,6 miliar on 2050, the equivalent of nearly three planet can be asked to provide natural resources needed to maintain a lifestyle today.
3. Water, less from 3 percent from fresh water in the world (drink), which 2,5 standard percent in Antartika, North Pole and glacier. Humanity because it must depend on 0,5 percent for all needed ecosystem and freshwater human. Human soil water more fast from nature can be recycle and purify water in river and lake. More for 1 miliar people still don't have access to clean water. The use of water excessive contributing about to global stress water. Free water from nature but infrastructure to needed for the convey that is expensive.
4. An energy, although progress of technology has been promote to profit efficiency of energy, the use energy in countries of OECD will be continue grow 35 percent again on 2020. Th use commercial energy and housing is region to more development quick both the use energy of the global energy after transportation. On 2002 motorcycle vehicle of the stock in countries of OECD is 550 million of vehicle (75 percent from private car). The rise of 32 per ownership of vehicle to hope on 2020. At the same time, kilometer of motorcycle vehicle the projected risen by 40 percent and air travel global projected to three times in the same period. Household to consumption by 29 percent energy of global and result to contribution 21 percent for the issue CO2 to result. Fifth for the consumption energy final in the world on 2013 is for the energy renewable.
5. Food, while the impact environment a big for food to occur on step production (agriculture, preparation of food), household influence impact through choosen diet and habit. It results, influence environment through consumption energy to relationship with food and waste. 1,3 miliar ton foods wasted every years while almost 1 miliad person go malnutrition and other 1 miliar hungry. An excessive of food detrimental to our health and environment. 2 miliar person in the world over weight or obesity. The land of degradation, land fertility declines, the use water is not sustainable, overfishing and degradation sea environment all the substract ability nature resources for the supply of food. In field food to donation about 30 percent from the total issue A Greenhouse Gas.
6. The climate change<sup>52</sup> is not a myth. All the country from PBB has acknowledge the implications dangerous it posed for not only the environment but also to the construction of human and peace and security. The need to resolve of the cause of this phenomenon and reduce the impact has become more urged considering the declaration newest by Panel Antar of government about Climate Change (IPCC). (IPCC) to clarify that temperature of global to determine for the add more of purpose 2 degree Celcius will be possible us to avoid the impact of the most dangerous of climate change. The new eforts for the society international for war on this development to catch in adoption from Agreement Paris on 12 December 2015 with A Climate Change PBB in Paris. In the countries of agreement to commitment for actions ambitious to curb the temperature is a global not exceeding 2 degree Celcius on the sign it last period.

According to Goal n.12 of the 2030 Agenda for Sustainable Development aims to ensure sustainable consumption and production patterns<sup>53</sup>

For the Sustainable Development to aim for the pattern ensure of consumption and sustainable productio.<sup>54</sup>

---

<sup>52</sup> Perubahan iklim secara harfiah adalah iklim yang berubah akibat suhu rata-rata meningkat. Peningkatan emisi ruma kaca, tersebut di atmosfer, khususnya CO<sub>2</sub>, telah memerangkap suhu panas diatmosfer bumi. [www.kaskus.co.id](http://www.kaskus.co.id) diakses tanggal 22 desember 2017

<sup>53</sup> [sustainableconsumptionandproduction.htm](#), diakses 22 november 2017

<sup>54</sup> *Ibid*

1. Paragraph 28 from 2030 the Agenda reads: The country to commitment for 2020, environment friendly reached management of chemicals and all of the whole waste life cycle the, appropriate with framework international to agreed, and in significance to reduce the liberation of them into the air, water and land for minimization of impact bad about human healthy and environment.
2. Fundamental change in a way that people produce and consume goods and services. Government, international organization, in field of business and individual should be given contribution for the pattern change of consumption and production has not sustainable, include through mobilization, for all resources, the financial help and technical to strengthen developing countries, technology and innovative capacity for the move to more sustainable consumption and production. We encourage the implementation of 10 years to Program on the Consumption and Sustainable Production. All countries, with countries develop consider the development and ability of developing countries.

Oslo Simposium on 1994, sustainable and consumption production (SCP) is about “the use of the services and production related, which respond to basic need and bring a better quality of life and minimize the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to harm the needs of the next generation. The concept of consumption and sustainable production then recognized in the Plan of Implementation Johannesburg, to adoption on 2002 of KTT in the World About Sustainable Development (WSSD). On that occasion, the consumption and the production of sustained identified as one of three overarching to aim, and the requirements important for sustainable development, together with : the eradication of proverty and natural resources management in order to encourage economic and social development. It is recognized that fundamental changes to the way society in produce and consume is very necessary, to achieve of sustainable development of global. Johannesburg Plan of Implementation also call all countries for the pattern promote of consumption and sustainable production<sup>55</sup>, with develop countries and with all countries gets benefit from process, with consideration of principles by Rio, include, between of the public principle but responsible different as to arrange in Principle 7 Declaration Rio about Environment and Development.

Next, The Plan reffered to in the Letter Chapter 3 Change of pattern sustainable of consumption and production for government, international organization to relevant, in field private and all big group for role play active in change pattern of consumption and production better sustainable and more special, through paragraph 15, for “encourage and promote the development of the framework 10 years program (10YFP) in support initiative regional and national for accelerate the shift about sustainable consumption and production to promote social and economic development within the carrying capacity of the ecosystem”. The framework 10- years program (10YFP) in pattern consumption and production sustainable adoption in Rio + 20 Conference, through paragraph 226. UNEP has been asked to serve as the secretariat of the 10YFP and the development and management a Trust Fund to support implementation SCP in countries develop and country with economic in transition.

## 5. Conclusions

1. A sustainable development is development fulfill the needs of the present without victimize the ability of future generations to fulfill their own needs. It contains within it two concepts: Concept ‘need’, especially main needs the poor in the world, the main of priority shoud be given; and idea limitations applied by country of technology and social organization in the ability of the environment to fulfill the current and future needs.
2. A sustainable development in the law business friendly environment is **management friendly environment** from chemicals and all wastes along their life cycle, appropriate with framework international has been agreed, in significant reduce their release to air, water and land for

---

<sup>55</sup> Konsumsi dan produksi berkelanjutan bertujuan "melakukan lebih banyak dan lebih baik dengan lebih sedikit," meningkatkan kesejahteraan keuntungan bersih dari aktivitas ekonomi dengan mengurangi penggunaan sumber daya, kerusakan dan pencemaran di sepanjang seluruh siklus hidup, yang berkaitan dengan Keseimbangan antara Manusia dan alam atau sumber daya alam sekaligus meningkatkan kualitas hidup

minimization impact bad about human healthy and environment. With the efforts to end all forms of poverty, fight injustice and resolve climate change, in the implementation to help achieve of plan development in totality, deduct the cost economics, environment and social in future, strengthen economic competitiveness and reduce poverty. Consumption and sustainable production to aim “do more and better with more little”, to increase of prosperity profit clean and economic activities with deduct the use resources, damage and pollution along the whole life cycle to relate with Balance between Human and nature or resources while improving the quality of life.

## 6. The Result of Research:

A sustainable development in law business friendly environment is the efforts to end in everything forms poverty, fight injustice and resolve climate change. It is recognized that fundamental changes to the way society produces and consumes is very necessary, to achieve development sustainable of global. The implementation to help for achieve plan development in totality, deduct the cost economic, environment and social in future, strengthen economic competitiveness and reduce poverty. Consumption and sustainable production to aim “do more and better with more little”, to increase of prosperity profit clean and economic activities with deduct the use resources, damage and pollution along the whole life cycle to relate with Balance between Human and nature or resources while improving the quality of life.

## References

### Books

- [1]. Bruggink, J.J.H., *Refleksi Tentang Hukum*, Cet. Kedua, Alih Bahasa: B. Arief Sidharta, Citra Aditya Bakti, Bandung, 1999
- [2]. Gerald Cooke, *Disputes Resolution in International Trading*, in Jonathan Reuvid (ed), *The Strategic Guide to International Trade*, Kogan Page, London, 1977.
- [3]. Grace Xavier, *Global Harmonisation of Contract Laws*, 20 (1) Const. LJ., 2004.
- [4]. Mariam Darus Badruzaman, *Aneka Hukum Bisnis*, Alumni, Bandung, 1994
- [5]. Hannu Honka, “*Harmonization of Contract Law Through International Trade A Nordic Perspective*” 1996 *Tulane European and Civil Law Forum*.
- [6]. Herlien Budiono, *Asas Keseimbangan bagi Hukum Perjanjian Indonesia Hukum Perjanjian berlandaskan Asas-asas Wigati Indonesia*, PT Citra Aditya Bakti, Bandung, 2006.
- [7]. PHAM Duy Nghia, *From Marx TO market: The Debates on The Economic System in Vietsnam’s Revised*
- [8]. *Constitution*, Asian Journal of Comparative law, 11 (2016)
- [9]. Tineke Louise Tuegeh Londong, *Asas Ketertiban Umum dan Konvensi New York 1958*, PT Citra Aditya Bakti, Bandung, 1998.
- [10]. Yunwei Fu, *Freedom of Contract in The EU and China*. Journal of International Commercial Law and Tecnology, Vol.8, No.4 (2013),

### The Regulation of Constitution and Convention International

- [1]. Kitab Undang-Undang Hukum Perdata.
- [2]. Kitab Undang-Undang Hukum Dagang.
- [3]. Keputusan Presiden No. 38 Tahun 1981 Indonesia telah meratifikasi New York Convention Tahun 1958 tentang Konvensi New York.
- [4]. Uniform Customs Practice for Documentary Credit (UCP 500).
- [5]. Uniform Customs Practice for Documentary Credit (UCP 600) Revision 2007, ICC Publication 600.
- [6]. United Nation Convention on Contract for the International Sale of Goods/ CISG (Konvensi tentang Jual Beli Internasional Tahun 1980).
- [7]. UNIDROIT (The United Nations Commission on International Trade Law).
- [8]. UNCITRAL (United Nations Commission on Trade Law) Arbitration Rules.

### Internet

- [1]. [www.un-document.net/ocf-02htm](http://www.un-document.net/ocf-02htm), diakses tanggal 18 november 2017
- [2]. <http://www.unicwash.org/>, diakses tanggal 10 november 2017

- [3]. <https://sustainabledevelopment.un.org/topics/sustainableconsumptionandprod>, diakses tanggal 22 desember 2017
- [4]. [www.kaskus.co.id](http://www.kaskus.co.id) diakses tanggal 22 desember 2017
- [5]. [https://id.m.wikipedia.org>wiki>pemb](https://id.m.wikipedia.org/wiki/pemb)
- [6]. [www.un-document.net/ocf-02htm](http://www.un-document.net/ocf-02htm)
- [7]. [www.sustainabledevelopment.un.org](http://www.sustainabledevelopment.un.org), diakses 22 desember 2017
- [8]. [sustainableconsumptionandproduction.htm](http://sustainableconsumptionandproduction.htm), diakses 22 november 2017

# Analysis of E-Marketing Strategy on Event Organizer (EO) Activity to Increase Motorcycle Sales Revenue in Mataram City

Didin Hadi Saputra<sup>1</sup>, J Akhmad<sup>2</sup>

<sup>1</sup> Public Administration Department, University Nahdlatul Wathan Mataram, 83125, Indonesia

<sup>2</sup> Economic Education, Faculty of Teacher Training, University Nahdlatul Wathan Mataram, 83125, Indonesia

**Abstract.** Through internet marketing, internet existence is a new world for marketing activities, where now ads can be placed in various new media in it be it websites, video ads and others. E-marketing is part of e-commerce which is a trading system through internet. As a business communication tool, the most often done by the providers or sellers of business services is event organizer activity. Event organizers are the most effective medium by promotional service providers to showcase the products they will sell to audiences. With event organizer activities, product sellers will certainly compete to market their best products to customers. This study aims to provide an overview of the importance and strategic of marketing activities conducted through event organizer activities. Marketing strategy used to increase sales volume for each type of vehicle that is e-marketing strategy, data used in this research is qualitative data and quantitative data. Sources of data used in this study are primary data and secondary data. The method used in this research is qualitative method, where the data obtained based on marketing system on an internet website can be interpreted with the form of data or documentation through marketing system through social media.

**Keywords:** *e-marketing, event organizer, increase in sales*

## 1. Preliminary

From time to time, marketing techniques are constantly changing, we can see from several developments in Indonesia, from the traditional to the sophisticated. Through internet marketing, internet existence is a new world for marketing activities, where now ads can be placed in various new media in it be it websites, video ads and others. E-marketing is part of e-commerce which is a trading system through the internet, where the internet will continue to provide up to date nature, then the company can provide product information services offered clearly and easily. This will have a good impact on the company's progress if the system works well. In addition e-marketing is also part of e-CRM where the relationship management with one of them through marketing activities. E-marketing is mostly done to improve the company's brand image because it makes the company always remembered by its customers (top of mind).

Technological developments, one of which the internet has changed the way interaction in marketing communication from face to face (conventional) to screen to face (internet marketing). This is due to the increase of internet users and users of social media accounts in Indonesia which has an impact on increasing online shopping interest (Nisaputra, 2013). According to Bloom & B oone (2006: h.51) the current use of the internet is not only for research purposes, but as a news source, playing gamesonline, socialization as well as business. As a business communication tool, the most often done by the providers or sellers of business services is event organizer activity :

No	Event Type	Place
1	Culture Parade	Dasan Agung Village
2	Festival of People's Games	Sangkareang Garden
3	Mataram Night Ride	Sangkareang Garden
4	Mataram Festival	Sangkareang Garden
5	Lombok Jazz Festival	Sangkareang Garden
6	Selection of Terune Dedare	Sangkareang Garden
7	Festival of Lebaran Topat	Sangkareang Garden
8	Mataram Art Show	Sangkareang Garden
9	Lombok-Sumbawa Great Sale	Sangkareang Garden
10	Cultural Show	Sangkareang Garden

From the above activities can be said that the event is a communication medium that aims to introduce a brand to the community. Information and messages that try to be delivered through the event by relying on the interaction between companies with audiences or consumers. As a means of business socialization, the event is a communication medium in conveying information and messages from a brand or company by interacting directly with consumers and the company's internal public. According Brouno Hasson (2008: 135) event is a communication medium to create connections between brands with customers like the old adage "do not know then no love".

In this study, the city of Mataram was chosen as the object of research, because it is based on the many activities of a national nature that has been going on in the city of Mataram. In addition, as an added value, the city of Mataram is also one of the business centers in Indonesia, as well as a developing city in terms of activities or events that are national or international (NewsWire, 2001). So it is interesting to see how the strategy applied by motorcycle dealers in the city of Mataram utilize e-marketing in event organizer activities as one of the mainstay communication or main communication in the activities of its product pemsaran. In addition, in this study only focuses on the implementation of motorcycle dealer e-marketing strategy on event organizer activities in the city of Mataram to increase product sales revenue.

Marketing through Event Organizer is in great demand because it has several benefits for its customers. In addition, purchases through Event Organizer that is interactive and immediate, ie the buyer can interact with the seller to find information and then place an order in place. This shows that currently some people are comfortable shopping e-marketing through activities organized by the Event Organizer because it can be accessed easily and not bothered. The approach and concept of this research is done in the form of case study as its method. The case study itself is an empirical investigation of a contemporary phenomenon, occurring in reality, especially when the boundary of the case lies between a phenomenon and a less obvious context (Yin, 2009: 4).

## 2. Literature Review

The rapid development of the internet greatly affects business changes. Many business activities are changing with the availability of the internet today. Significant business activity changes influenced by the internet one of them is marketing / marketing. Marketing is a social and managerial process whereby individuals and groups get what they want and need through the creation and exchange of products and values with others (Kotler & Armstrong, 2010). Ali Hasan (2010) defines e-marketing as an effort to communicate, promote, sell ideas, goods and services via the internet, in other words e-marketing is an effort to carry out internet-based marketing activities through event organizer.

Communication management became a major framework that became the instrument of this research. It is related to this research, that the researcher tries to find out communication management in organizing special event organized by an event organizer. The connection in this research, management of communication management that researchers try to explain is the process of management of communal resources conducted by Yamaha Motorcycle dealers in the City of

Mataram as the official agent organizer in implementing special events to achieve certain goals desired by a company.

Event organizer is an activity that specifically show the event organizing service. In this case, the event organizer is the planners / organizers who plan and organize a conference and event activities. Planners like the notion are the actual "planners" in practice while also performing functions like "organizer", and vice versa. So many people prefer to combine this terminology as a planner / organizer to refer to the task area and function of EO (event organizers), ie the party planning and organizing a conference or event. The International Association of Professional Conference Organizers (IAPCO) in Abdullah (2009: 79) defines EO / PCO (professional conference organizers) as "a company, specializing in congress management. The company acts as a consultant to the organizing committee, and executes decisions based on their experience and knowledge in organizing an event for years. "

References in this study are, Lovelock, Wirtz, and Mussry (2011: 16), explaining that event organizer is "economic activity offered by one party to another party. Often activities are conducted within a certain time (time-based) in the form of an activity (performances) that will bring the desired results to the recipient, object, or other assets that are the responsibility of the buyer in exchange of money, time, and effort. Service customers expect to get the value of an access to certain goods, labor, expertise, facilities and systems but customers will not usually get the property rights of the physical elements seen in the provision of such services.

Meyliana (2011), entitled "Analysis of E-Marketing Strategy And Its Implementation At The Rental Company", says that "customer is the key to the survival of a company". Companies must be able to manage old customers and attract new customers: marketing activities. Marketing is one component in the science of Customer Relationship Management. While Thousani et all (2015), entitled "The Effort of E-Business Development in International Product Marketing", explains that the process of developing e-business in product marketing internationally conducted by Akademi Bisnis Online Indonesia Surabaya, and to describe and analyze tactical strategy for success in e-business, the achievement of product / service marketing conducted by Indoesia online Business Academy in Surabaya. The type of research used is qualitative research by describing and analyzing the implementation of e-business development in product marketing internationally conducted by Akademi Bisnis Online Indonesia Surabaya.

### **3. Research methods**

This research focuses on e-marketing strategy in event organizer in this special event event using case study as its method. The case study itself is an empirical investigation of a contemporary phenomenon, occurring in reality, especially when the boundary of the case lies between a phenomenon and a less obvious context (Yin, 2009: 4). This research is conducted in the form of analyzing and designing e-marketing strategy based on stages of Judy Strauss (Strauss & Frost, 2009) ie situation analysis, e-marketing strategic planning, objectives, emarketing strategy, implementation plan, budget, and evaluation plan. While the location of research that is around the city of Mataram, West Nusa Tenggara Province (NTB). The model used by the researcher will apply the related theoretical ground as an instrument for this research. This is done to limit as well as determine the indicators that will guide the researcher when describing the analysis of communication management in marketing strategy in event event organizer by Yamaha Indonesia.

### **4. Discussion**

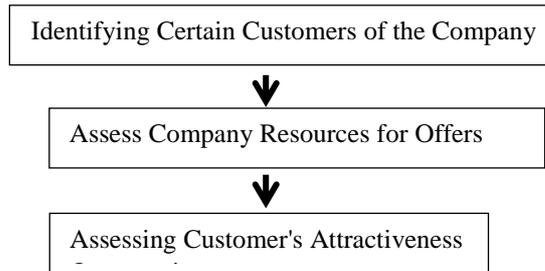
This research provides general information about the general description of motorcycle products in order to increase sales through event organizer activities. The context of online marketing, the Internet not only offers convenience, but also offers new media in marketing communication media. New media in today's marketing world is social media. In this study, researchers look at how social media, especially the Internet has an advantage when compared to other social media in terms of marketing online. This research is an empirical investigation of a contemporary phenomenon, occurring in reality, especially when the boundary of the case lies between a phenomenon and a less obvious context (Yin, 2009: 4).

At this stage, will be described the results of research that has been done by a team of researchers beginner lecturer (PDP) implementation year 2018. The first stage is the beginning of the

concept of research by analyzing the strengths, opportunities, weaknesses and threats to the company. In this section, the situation analysis used is the SWOT analysis. According Rangkuti (2004), SWOT analysis is a systematic identification of various factors to formulate the company's strategy. This analysis is suggested in the logic that can maximize strengths and opportunities, while simultaneously minimizing weaknesses and threats. The strategy decision-making process is always related to the development of mission, goals, strategies, and company policies.

**4.1. E-marketing Strategy**

In this stage there is a simple methodology that helps in evaluating and analyzing market opportunities, namely:



**Table 2.** matrix SWOT

<p><b>Strength</b></p> <ol style="list-style-type: none"> <li>1.Product products through EO activities</li> <li>2.Services to provide satisfaction for consumers</li> <li>3. Decision buyer</li> <li>4.Have cooperation relationship with many parties</li> </ol>	<p><b>Weakness</b></p> <ol style="list-style-type: none"> <li>1.The marketing process still relies on EO activities</li> <li>3.Not utilize information technology optimally</li> <li>4.The only marketing area of Mataram City coverage</li> </ol>
<p><b>Opportunity</b></p> <ol style="list-style-type: none"> <li>1.Increasing the number of mobile internet users</li> <li>2.Technology and networks that help companies in marketing efforts</li> <li>3.The existence of marketing trends through the internet</li> </ol>	<p><b>Threat</b></p> <ol style="list-style-type: none"> <li>1.The emergence of new models / potential products</li> </ol>

**4.2. Product Strategies**

In terms of products, Yamaha has a variety of products, such as Mio Soul GT, Mio GT, Fino, Xeon RC, Jupiter Z F1, Vega ZR, Jupiter MX, Byson, and Vixion, with a variety of product variants, of course Yamaha can compete with other manufacturers in determining strategies to increase sales. Event organizers usually provide features to make it easier to find products, provide information for each product, and provide product recommendations based on the event.

In terms of price, EO organizers usually apply a dynamic pricing strategy that is pricing based on service users, pricing through negotiation and price discounting. With pricing based on the service user, the company will charge a different service fee according to the shipping location. While pricing through negotiation, the customer (in this case Yamaha distributor), can negotiate the price with the company to get a favorable price agreement for both parties. In addition, pricing strategies with discounts are granted to new service users.

**4.3. Place Strategies**

In using EO services, Yamaha always puts and or displays its best products in every event, such as Mio Soul GT, Mio GT, Fino, Xeon RC, Jupiter Z F1, Vega ZR, Jupiter MX, Byson, and Vixion.

The whole product is a variant that has always been a mainstay distributor Yamaha event Every Event Organizer.Promotion (Communication) Strategies

The form of communication that is applied by the company through its activities, ie communication made with attractive product display, detail, with friendly price. In disseminating this communication, the company promotes to regular customers to visit every event organizer activity and refer to purchase. Fixed customers who have visited the activity may refer this product to friends, friends, and other relatives, the event providers sometimes provide special discounts for each customer who often comes to visit every other similar occasion. Provider (EO) provides services to communicate with fellow members or users and with Yamaha companies.

#### **4.4. Relationship Management Strategies**

The management relationship strategy consists of: (1) an increase in the number of subscribers, with the implementation of CRM, the company seeks to attract new customers by promoting discounts on newly joined subscribers and services to reference companies; (2) increased rentals, with CRM implementation, companies seek to increase rental rates by promoting through discounts, negotiation strategies where customers can negotiate prices with the company to get prices that match the budget and customer desires, and provide package recommendations so that customers can more easily determine the package as needed from the event to be held; (3) increasing the loyalty of existing customers, with the implementation of CRM, the company seeks to increase customer loyalty by providing interactive communication services to customers and promotions in the form of discounts for regular customers.

#### **4.5. Result**

In implementing e-marketing applications, a suitable planning strategy for the organization of EO activities includes, the results of situational analysis, the right strategy to apply is a prospective customer development strategy, that is marketing a product with a wider marketing area to attract new customers through the internet as a promotional medium , from the results of this study, the main target segments of EO organizers are individual customers or motorcycle distributors located in Mataram and surrounding areas. The strategy of differentiation and positioning done by the company is to place its products in various event locations related to marketing. As a manufacturer that provides motorcycle products in every event organizer equipped with ease to determine the negotiation schedule according to customer wishes, to increase sales both in terms of product, price, communication or promotion, and customer relationship among others expected in this research the creation of good emotional relationship between the users or stakeholders (Yamaha motorcycle customers) with the Yamaha dealers or distributors in each Yamaha dealer branch in several places in Mataram City, as well as the EO service providers used in this promotion.

#### **ACKNOWLEDGMENT**

We would like to thank the research fund of our young lecturer who was given by the Directorate of Research Research and Community Service of the Ministry of Research and Higher Education, and specially thank's to Mr. Junaidi Ahmad as my partner research from Education Departement, Faculty Teacher Training Science, Nahdlatul Wathan University of Mataram, West Nusa Tenggara.

#### **References**

- [1]. Budi, A., & Artiningsih, D. W. (2000). Customer Satisfaction and Impact on Customer Loyalty of South Kalimantan Bank Branch Tanjung Kalimantan Selatan Background Research Model Research Objectives Review Library.
- [2]. Daria, L. P., & Setyorini, R. (n.d.). Effect Of E-Marketing Mix Strategy To Buying Decision On Online Shop (Study On Zalora Consumer Co. Id In Bandung) The Influence Of E-Marketing Mix On The Decision To Buy In The Store Online (Study On Zalora .Co.Id Consumer In Bandung), (2010)
- [3]. Ethics, P., Against, B., And, K., Important, P., & Business, E. (2016). Volume X, Number 2, May 2016 ISSN 1978-1474 Main Journal Of Financial And Management Economy, X (152).
- [4]. Indonesia, N., & Tbk, P. (2014). No Title, 3(2), 165–171.

- [5]. Lestari, D. P. (2015). Online Marketing Strategy Analysis Online In Surabaya Boutique Through Instagram. *Commonline Department of Communications*, 4 (2), 412-424. Retrieved from <http://journal.unair.ac.id/analisis-strategi-internet-marketing-butik-online-di-surabaya-melalui-instagram-article-9378-media-137-category-8.html>
- [6]. Meyliana. (2010). *E-Marketing Strategy Analysis And Implementation. Analysis of E-Marketing Strategy and Implementation (Case Study: Retail Garment Company)*, 2010 (semnasIF), 120-131.
- [7]. Sunarti, Hifzhan Frima Thousani, A. F. (2015). E-Business Development Effort In Marketing Of Products In International (Study at Akademi Bisnis Online Indonesia Surabaya). *Journal of Business Administration*, Vol. 23 (1).
- [8]. Tobergte, D. R., & Curtis, S. (2013). The Influence of Electronic Marketing Terhadap Interests Tourists Go to Saronde Island. *Journal of Chemical Information and Modeling*, 53 (9), 1689-1699. <http://doi.org/10.1017/CBO9781107415324.004>
- [9]. Kotler, P., & Amstrong, G. (2004). *Principles of Marketing (10th ed.)*. Upper Saddle River, New Jersey: Pearson Education.
- [10]. Mohammed, R. A., et. al. (2003). *Internet marketing : building advantage in a networked economy (2nd ed.)*. New York: McGraw Hill.
- [11]. Rangkuti, F. (2004). *Analisis SWOT teknik membedah kasus bisnis*. Jakarta: Gramedia Pustaka Umum.
- [12]. Rayport, J. F., & Jaworski, B. J. (2003). *Introduction to e-commerce (2nd ed.)*. New York: McGraw-
- [13]. Hill.
- [14]. Reedy, J., Schullo, S., & Zimmerman, K. (2000). *Electronic marketing, integrating electronic resources into the marketing process*. United States of America: The Dryden Press, Harcourt College Publishers.
- [15]. Strauss, J., & Frost, R. (2009). *E-marketing (5th ed.)*. Upper Saddle, New Jersey: Prentice-Hall.

# Analysis of Vegetables Farming Hydroponics in PT. Kusuma Agrowisata

**Ekaria**

Department of Agribusiness, Faculty of Agricultural, University Muhammadiyah North Maluku. Jl. K.h Ahmad Dahlan Kampus UMMU  
Email : ekaria16@yahoo.com

**Abstract.** This study aims to determine the hydroponics method developed in PT Kusuma Agrowisata and analysis the farming of hydroponics vegetables in PT Kusuma Agrowisata. The analysis method used is farming analysis. This research is a survey research with qualitative descriptive approach.

The results showed that hydroponic vegetable farming in PT Kusuma Agrowisata using floating hydroponic method that includes the use of planting media, planting installation, nutrients and oxygen. The average production of hydroponic vegetables at PT Kusuma Agrowisata is 1485,2 kg/planting season. The hydroponic vegetable farming in PT Kusuma Agrowisata is very profitable and efficient. The technology used fits vegetable farming for urban areas with limited land.

**Keywords :** *Farming, Hydroponic, PT Kusuma Agrowisata*

## 1. Introduction

Culture cultivate with hydroponics system increasingly interested society in urban. This trend comes along with the increasing awareness of people in living a healthy lifestyle through the consumption of vegetables and fruits are hygienic.

Hydroponics is one of the alternatives that can be used to increase crop productivity, especially on narrow land. According to Nazaruddin (1998), with the advent of agricultural technology allows planting vegetables out of season. For that, used green house and generally done with hydroponics system, so the need for vegetables can be met and continuity can be more awake. Hydroponics is a term used to describe how to grow crops without using soil as a medium for cultivation (Lingga, 2002).

According to Suhardiyanto (2002), several advantages of hydroponics compared to planting in the soil media, among others, cleanliness more easily maintained, no heavy problems such as soil and weed treatment, the use of fertilizers and water is very efficient, plants can be cultivated continuously regardless of season, with high quality, higher crop productivity, easier to select and controlled plants and can be cultivated on narrow land, free from the use of inorganic pesticides. The use of inorganic pesticides can contaminate plant tissues that will also affect consumers.

With the many advantages of hydroponics technology as well as the community's need for vegetable commodities continues to increase, there is a business opportunity in the field of agriculture with a hydroponic system that has promising prospects. In its development not only for small scale but has been covering large scale or commercial, as already developed in PT. Kusuma Agrowisata and Puspa Agro.

PT. Kusuma Agrowisata is one of the companies in East Java engaged in tourism one of them by developing hydroponics vegetables and become producers and suppliers for the modern market. Types of vegetables cultivated namely kale, lettuce, pakcoi and kailan. In producing these vegetables, PT Kusuma Agrowisata applies Floating Hydroponic Method method which has several technical advantages, the efficiency of land use and control over ideal environmental conditions for plant growth can be created

In the development of hydroponic vegetable farming, in addition to increased productivity, increased profits from the business are also very important. Therefore, achievement of productivity gains that have been obtained need for further management in order to profit also increased maximally.

Formulation of the problem

1. To know hydroponic vegetable farming method developed at PT. Kusuma Agrowisata
2. Analyze the hydroponic vegetable farms developed at PT Kusuma Agrowisata

## 2. Research Method

### 2.1. Subject, Object and Place of Research

Site selection was done purposively with consideration that PT Kusuma Agrowisata is a company producing hydroponic vegetables and consistent in East Java.

### 2.2. Farming Analysis

To analyze the farming of hydroponic vegetables in PT Kusuma Agrowisata, will be analyzed descriptively quantitative related to cultivation technique, production factor, cost, income and efficiency of farming.

According Soekartawi (1995), to calculate the total cost of production can be calculated by the formula:

$$TC = FC + VC \quad (1)$$

Information :

TC = Total cost (Rp)

FC = Fixed Cost (Rp)

VC = variable cost (Rp)

To calculate the amount of farm income can be calculated by the formula :

$$TR = Y \cdot Py \quad (2)$$

Information :

TR = Total revenue (Rp)

Y = Production quantity

Py = Product selling price

The profit from the farm has been calculated using the formula (Soekartawai, 1995):

$$\pi = TR - TC = Y \cdot Py - (\sum Xi \cdot Pxi) - BTT \quad (3)$$

Where : TR = Y . Py

TC = (Xi . Pxi) – BTT

Information :

$\pi$  = Profit(Rp)

TR = Total Revenue (Rp)

TC = Total Cost (Rp)

Y = Production result (kg)

Py = Unit price of production (Rp)

Xi = Factor of production

Pxi = Factor price of production (Rp/satuan)

BTT = Fixed cost (Rp)

i = 1,2,3,4,5,n

To know the efficiency of hydroponic vegetable farming is used the analysis of Return Cost of Ratio (RCR) with the formula according to Hernanto (1991) :

$$RCR = \frac{TR}{TC} \quad (4)$$

Information :

RCR = Refund rate

TR = Total revenue (total revenue)

TC = Total cost of production (total cost)

Based on these values, the criteria for measurement are as follows:

- a. If  $RCR > 1$ , Farming benefits economically.
- b. If  $RCR = 1$ , then the farm is at break even point that is where the acceptance equals the total cost incurred.

- c. If  $RCR < 1$ , then farming is not economically advantageous, since the revenue is less than the total cost incurred.

### **3. Result And Discussion**

#### **3.1. Hydroponics method developed at PT. Kusuma Agrowisata**

PT. Kusuma Agrowisata in the development of hydroponics vegetable farming using floating raft method (Floating Hydroponics Method) because the planting medium used is easy to obtain and plant installation after harvest is easy to clean. So that pests of disease can be overcome and can increase the production of hydroponic vegetable farming.

Floating Hydroponics Method floating hydroponics (Floating Hydroponics Method) developed at PT. Kusuma Agrowisata is one of the planting methods that is done by putting the plant on the hole styrofoam that floats on the surface of the nutrient solution. The nutrient solution will be in a tub used as a medium, then the plant to be planted is placed on the medium. The basic principle of hydroponic cultivation of floating rafts is to place the floating plant just above the nutrient fluid. The advantages of this method is the plants will get water supplies and also nutrients on a regular basis, so it can facilitate the treatment.

The elements in the floating hydroponic method of Floating Hydroponics Method are:

##### **1. Media Planting**

Planting medium used is sponge and styrofoam. The air cavity in the sponge must be filled with water to allow the water-saturated sponge shown in the dark yellow sightings and the water-unsaturated sponge to become light yellow. Water-saturated sponges are a good condition for seeds to germinate. For the nursery requires a plastic tray and sponge that has saturated water and measuring 2.5 x 2.5 x 2.5 cm with the middle section slashed tangent. Then the sponge is lined up to fill the plastic tray. The seeds are placed in the center of a slashed sponge using a tweezers tool. Plastic tray that has been filled with seeds placed on a nursery rack and then darkened by way of closed black cloth to stimulate its growth. After 5-7 days the seedlings are ready to be moved to styrofoam holes with a specification of 80 cm length, 55 cm wide, 2 cm diameter hole and 7 x 8 cm spacing between holes. Before the plant is removed it should be adapted first by means of sunlight.

##### **2. Plant Installation**

Plant installation using a fiber tub measuring 26 x 0.6 m which is used as a place of nutritious water as well as to support styrofoam. In 1 greenhouse with an area of 30 x 3 m there are 4 fiber tubs arranged into 2 levels with the number of planting points as many as 7,144..

##### **3. Nutrition**

Nutrition used is a formulation made directly consists of macro and micro nutrients needed by plants. One greenhouse requires 20 liters of nutrients that have been mixed with 6,000 liters of water for 1 production.

##### **4. Oxygen**

Giving of oxygen is done by using a water pump lux semi-jet pump 100 watts with suction power of 11 m (max). In addition to the oxygen delivery the water pump is used to drain and push water. The selected water pump should match the installation model so that the nutrients can be well circulated. Power is 100 watts and run from 07:00 to 15:00, then at the next hour on the road 1 hour by using a timer.

##### **5. Treatment Plant**

Treatment is checking the nutrient content in the water reservoir, checking the water phas, cleaning the reservoir of water to avoid bacteria that can interfere with hydroponic vegetable plants and the selection of plants contaminated by the disease so as not to spread to other plants.

#### **3.2. Production Cost, Income and Efficiency of Hydroponics Vegetable Farming at PT. Kusuma Agrowisata**

Production cost is all costs incurred both cash and based on consideration. Production costs can be grouped over fixed costs and variable costs. Fixed costs are the costs of production whose quantities and types do not change in a single planting season even though the type of production produced is not the same. Variable cost is a cost that can change the size of one planting season.

Based on Table, Demonstrate that the biggest investment cost is making of greenhouse and plant installation. The investment cost for greenhouse and plant installation is Rp 100,000,000 / greenhouse with an area of 30 x 3 m so that the total area of overall 6 greenhouse units is 540 m<sup>2</sup> and greenhouse investment cost and plant installation is Rp 600.000.000. Depreciation charge of Rp 23,662,014. The greenhouse framework and plant installation are made of iron so that the investment cost is big enough.

**Table 1.** Investment Cost of Hydroponics Vegetable Farming at PT. Kusuma Agrowisata

No	Type of tool	Amount (Unit)	Unit price (Rp/Unit)	Total (Rp)
1	Greenhouse and plant installation	6	100.000.000	600.000.000
2	Water pump (250 watt)	6	500.000	3.000.000
3	Tray	102	5.000	51.000
4	Knife	4	5.000	20.000
5	Tweezers	4	5.000	20.000
6	TDS and AC	1	150.000	150.000
7	Ph meter	1	150.000	150.000
Total				603.391.000
Depreciation				23.662.014

In addition to the fixed costs incurred in hydroponic vegetable farming there are variable costs that include the purchase of production facilities and labor wages. Labor includes labor for cultivation, care, harvesting, and packaging.

Table 2 shows the total cost of Rp. 33,662,000, the profit received is Rp. 18.320.000 / planting season. Hydroponic vegetable farming is very efficient or profitable with RCR value of 1.33.

**Table 2.** Production Cost of Hydroponics Vegetable Farming at PT Kusuma Agrowisata / Seasons Plant

Description	Rp
Seed	155.000
Electricity	300.000
Water	1.200.000
Sponges	368.000
Nutrition	900.000
Packaging	922.000
Labor	6.000.000
Depreciation	23.662.000
Total Cost	33.662.000
Revenue	51.982.000
Profit	18.320.000
RCR	1,33

Table 3 shows the production of each growing season varies with the selling price of Rp. 35.000 / Kg. The average revenue obtained is Rp 51,982,000.

**Table 3.** Production and Sale Price of Hydroponics Vegetables at PT Kusuma Agrowisata

Planting Season	Production (Kg)	Riil	
		Selling Price (Rp/Kg)	Revenue (Rp)
I	1.464	35.000	51.240.000
II	1.471	35.000	51.485.000
III	1.475	35.000	51.625.000
IV	1.521	35.000	53.235.000
V	1.495	35.000	52.325.000
<b>Total</b>			<b>259.910.000</b>
<b>Average</b>			<b>51.982.000</b>

## 4. Conclusions And Recommendations

### 4.1. Conclusion

1. Hydroponics vegetable farming method at PT. Kusuma Agrowisata using floating raft method that includes srock planting media from Styrofoam, planting installation in the form of fiber tub as a place of nutrient solution, the nutrient used is the result of its own formulation and oxygen as air circulation.
2. Farming hydroponics vegetables at PT. Kusuma Agrowisata is very efficient and efficient with RCR 1.33.

### 4.2. Recommendation

1. There needs to be guidance and training of employees or workers on a regular basis so as to improve employee performance in the company.
2. There is a need for further research that analyzes risk assessment on specialization and diversification activities.

## Prefences

- [1]. Alviani, P. (2015). *Planting Hydroponics For Beginners*. Depok: Seed Publisher.
- [2]. Arikunto, S. (2007). *Management Research*. Jakarta: Rineka Cipta.
- [3]. Debertin, D.L. (1986). *Agricultural Production Economics*. Macmillan Publishing Company, New York..
- [4]. Ellis, F. (1998). *Peasant Economics: Farm Household and Agricultural Development*. Cambridge University Press, Cambridge.
- [5]. Henderson, JM. And Quandt, RE. (1980). *Microeconomics Theory. A Mathematical Approach*. Third Edition. McGraw Hill International Book Company, Tokyo.
- [6]. Hernanto, F. (1991). *Science Farming*, Penebar Swadaya, Jakarta
- [7]. Heyer, J. (1972). An Analysis of Peasant Farm Production. *American J. Agric. Econ.* (76): 1107-1113..
- [8]. Lingga P. (2005). *Hydroponics Planted Without Land*. Jakarta: Spreading Self-Helpers.
- [9]. Mas'ud, H. (2009). *Hydroponics Systems with Different Nutrition and Planting Media on Growth and Lettuce Results*. Agricultural Cultivation Program. Faculty of Agriculture. University of Tadulako. Hammer.
- [10]. Nazaruddin. (1998). *Cultivation and Arrangement of Lowland Vegetables*. Jakarta: Spreading Self-Helpers.
- [11]. Noor, J. (2011). *Research Methodology: Thesis, Thesis, Dissertation, and Scientific Work*. Jakarta: Kencana.
- [12]. Perwtasari, A. (2012). Influence of Plant and Nutrition Media on Growth and Produce of Pakchoi (*Brassica juncea* L.) with Hydroponics System. *Journal of Agrovigor*, Volume 5 No.1 March 2012.
- [13]. Resh. HM. Ph.D. (2004). *Hydroponic Food Production*. Sixth edition. New Jersey: New Concept Press.
- [14]. Roidah. (2014). Land Use Using Hydroponics System. *Jurnal Universitas Tulungagung Bonorowo*, Volume 1 No. 2.
- [15]. Soekartawi. (1995). *Analysis of Farming*, Rajawali Press, Jakarta.
- [16]. Sameto H. (2003). *Simple Hydroponics Air Conditioning*. Jakarta: Spreading Self-Helpers.
- [17]. Siregar, S. (2015). *Applied Statistics*. Jakarta: Prenadamedia Group
- [18]. Sudarmodjo. (2011). *Hydroponics*. Parung: Parung Farm
- [19]. Sutiyo, Y. (2004). *Hydroponics a la Yos*. Jakarta: Spreading Self-Helpers.
- [20]. Suhardiyanto. (2002). *Hydroponic Furnace*. Jakarta: Swadaya
- [21]. Shinta, A. (2011). *Agricultural Science*. Malang: UB Press.
- [22]. Suratiyah, K. (2009). *Agricultural Science*. The Swadaya spreader. Jakarta.
- [23]. Sugiyono. (2006). *Business Research Methods*. Salemba Four, Jakarta.

# Principles and Norms of the Laws of State Administration in the Making of Government Instruments

**Enny Agustina**

*Kader Bangsa University, Faculty of Law, Palembang, South Sumatra, Indonesia  
Email: ennyagustinadua@yahoo.com*

**Abstract.** The idea of a legal state was first put forward by Plato, when he wrote *Nomoi*, as a third written work made in his old age. While in the first two written, *Polytheia* and *Politicos*, no legal state has yet to appear. Plato points out in *Nomoi* that good implementation state was on good arrangements (law). Plato's ideas of a state of law was increased assertive, when it was supported by his student, Aristotle, a good state is a state governed by a constitution and rule of law (Ridwan HR, 2011: 2). The approach was used a statute approach and concept approach. The result of the research show that The regulations of laws had characteristics : It was general and comprehensive, thus the opposite of special and limited traits.and it was universal. It was created to face up come events that were not yet clear on their concrete form. Therefore, it was not formulated to overcome certain events only.

**Keywords:** *Norms, Princiles of Stste Administration, Making of Government Instruments*

## 1. Introduction

The idea of a legal state was first put forward by Plato, when he wrote *Nomoi*, as a third written work made in his old age. While in the first two written, *Polytheia* and *Politicos*, no legal state has yet to appear. Plato points out in *Nomoi* that good implementation state was on good arrangements (law). Plato's ideas of a state of law was increased assertive, when it was supported by his student, Aristotle, a good state is a state governed by a constitution and rule of law (Ridwan HR, 2011: 2).

The ideas of a legal state were still vague and sink for a very long time, then reappeared more explicitly in the nineteenth century, with the emergence of the *rechtsstaat* concept of Freidrich Julius Stahl, inspired by Immanuel Kant's thought. According to Stahl, elements of legal state (*rechtsstaat*) were as follows (Ridwan HR, 2011: 2):

1. Protection of human rights
2. Separation or shared of power to guarantee those rights
3. Governing under legislation, and
4. Administrative court in dispute.

In the Anglosaxon region, the concept of the rule of law state of A.V. Dicey, followed the elements (Ridwan HR, 2011: 2):

1. Supremacy of the rule of law (supremacy of the law); absence of absolute power (absence of the law);
2. The same position in the face of law (equality before the law). This argument applied, both to ordinary people and officials; and
3. Guarantees of human rights by law and court decisions.

In the development, the conception of the law state then undergoes a general improvement seen from the follow elements (Ridwan HR, 2011: 4-5):

1. The system of government state based on people's sovereignty.
2. That the government in perform the duties and obligations was on the laws or regulations.
3. A guarantee of human rights (citizens).
4. Shared of power within the state.
5. The supervision of judicial bodies (*rechterlijke controle*) which is free and independent, in the sense that the judicial institution was completely impartial and not under the influence of the executive.

6. The existence of a real role of community members or citizens to participate in oversee the actions and implementation of policies undertaken by the government.
7. The existence of an economic system that guarantee an equitable distribution of resources necessary for the prosperity of citizens.

Based on the provisions of Article 1 Section (3) of the Constitution 1945 of the Republic Indonesia, "Indonesia is a constitutional state" which embraces decentralization in the implementation of government, as implied in Article 18 Section (1) Constitution of the Republic Indonesia of 1945 "The Unitary State of the Republic Indonesia was divided into provincial, districts and municipalities had regional governments, which were regulated by law ". As a state of law, every administration of government affairs was on applicable law (*wetmatigheid van bestuur*). As a state of law, every execution of governmental affairs was on applicable law (*wetmatigheid van bestuur*). As a country that embraces decentralization means that government affairs consist of central government affairs and regional government affairs. This means that there is a central government device and there is a regional government device that was given autonomy of freedom and independence to manage the affairs of the regional household (Ridwan HR, 2011: 17).

Referred to the formulation of state objectives listed in the fourth alenia of the Preamble to the Constitution 1945, especially on the editorial of "promote the general welfare", some argue that Indonesia adheres to the welfare state, such as Azhary and Hamid S. Attamimi. According to Hamid S. Attamimi, said that the state of Indonesia was established since its intention to establish itself as a state on the law, as *rechtsstaat*. Even the *rechtsstaat* Indonesia was the *rechtsstaat* that promoted the general welfare, educate the life of the nation, and realize a social justice for all the people of Indonesia (Ridwan HR, 2011: 18).

According to Philipus M. Hadjon, the idea of *rechtsstaat* tends toward legal positivism which carried the consequence that the law was consciously established by the legislature. As a rule of law, the law was placed as the rule of the game in the exercise of statehood, government and society, while the objectives of the law itself included "... *opgelegd om de samenleving vreedzaam, rechtvaardig, en doelmatig te ordenen*" (laid down to organize a peaceful society, fair, and meaningful) (Ridwan HR, 2011: 21).

The execution of the duties of government and state in a law state has the rules of law written in the constitution or the rules collected in the constitutional law. However, for the implementation of technical issues, this constitutional law was not fully implemented effectively. That is, constitutional law required other laws of a technical nature. The law was the Law of State Administration. Since the state was a power organization (*machtenorganisatie*), ultimately the law of state administration was emerge as an instrument to oversee was used of governmental power.

Therefore, the existence of State Administrative Law arises because of the implementation of state power and government in a state law, which demands and required the implementation of state duties, government, and society on the law. According to Philipus M. Hadjon said, the size or indication of the rule of law was the functioning of administrative law, otherwise a state was not a legal state in reality when the administrative law did not work (Ridwan HR, 2011: 23).

### **1.1. Problems**

Based on the background that has described and more focused in discussed, so described the discussion properly, and then arranged several problems. The main issues were as follows:

1. What was the meaning of legislation, policies and decisions on the laws of state administration?
2. What were the principles and norms of state administrative law in the draft of legislation, policy regulations, and decisions?

### **1.2. Research Purposes**

1. To Known the meaning of legislation, policies and decisions on the laws of state administration.
2. To Known the principles and norms of state administrative law in the draft of legislation, policy regulations, and decisions

## 2. Research Methods

This Research was used library research normative legal research. (soekanto, 1990) The normative juridical method intended to explain various Principles and Norms of the Laws of State Administration in the Making of Government Instruments.

## 3. Result And Discussion

### 3.1. Definitions of Legislation-Invitations, Policies, and Decisions under the Law of State Administration

#### a. Legislation

Rule is a law in abstracto or general norms that was binded general (generally applicable) and the duty is regulated things that were general (Marbun and Mahfud MD, 2006: 94).

According to the Elucidation of Article 1 number 2 of Law number. 5 of 1986 on State Administrative Courts, the laws and regulations were all general bind rules issued by the People's Legislative Assembly with the government, both at the central and regional levels which were also binded in general. The formulation of such laws and regulations included material and formal insights (Marbun, 2011: 182).

Based on the formulation of the explanation of Article 1 point 2, Law number. 5 of 1986, it was concluded that the decision of of the body or state administrative officials which were general arrangements (*besluit van algemene strekking*) included legislation (*algemeen verbindende voorschriften*) (Hadjon, 1999: 151).

According to a German scholar, Paul Laband, the law was formil and hylc defined (*wet in formele zin and wet in materiaelele zin*). The law in the formal sense (*wet in formele zin*) were any rule (government decree) associated with the way of the occurrence or mode of formation. While in Indonesia, the meaning of the Law in a formal sense was every legal product made by the President together with the House of Representatives. While the law in the hylc sense was a stricted rule of law so that the rule of law has a binded nature.

According to Paul Laband bind nature of a rule of law was required two elements, the firm determination (*anordning*) and the rule or the content of the law itself (*rechtsstaat*). According to Buys in his book *De Grond wet, Toelichting en Kritiek* (1883), argued that the meaning of the law in the hylc sense was any government decision (overheid) whose contents bind directly to every resident (Marbun, 2011: 182). Regard to legislation, A. Hamid S. Attamimi written as follows (Attamimi, 1992: 3): "The term legislation (*wettelijkeregels*) was literally interpreted as regulated the law, both in the form of both own and lower laws which constitute attribution or delegation of legislation. On the basis of attribution and delegation of legislation authority then those classified as legislation in our country were laws and regulations were lower than such as government regulations, a presidential decree contained a regulation, a ministerial decree contained a regulation, a decision of the head of a non-departmental government agency contained the regulation, the decision of the director-general of the department in the form of a law contained the rules, the regional regulation 1, the decision of the regional governor provisions of regional regulation 1, regional level II, and the decision of regents / mayors of regional heads shall contain regulations implemented the provisions of regional regulation II. "

Legislation has follow characteristics (Ridwan HR, 2011: 130):

- 1) General and comprehensive, thus the opposite of specific and limited traits.
- 2) It was universal. It was created to face upcome events that were not yet clear on their concrete form. Therefore, it is not formulated to overcome certain events only.
- 3) It has the power to correct and improved itself. It was not unusual for a regulation included a clause that contains the possibility of a review.

According to Article 1 number 2 of Lumberw no. 10 Year 2004 Concerned the Establishment of Laws and Regulations, the meaning of legislation was a written regulation established by a state institution or authorized and publicly binded the authority. General binded legislation (*algemeen verbindend voorschrift*) was also referred to as the law in the hylc sense (*wet in materiaelele zin*), ieder rechtsvoorschrift van de overheid met algemeen strekking (all written laws of public binding government).

Based on the above legal norm qualifications, the legislation was general-abstract. The words were general-abstract characterized by the follow the elements (Ridwan HR, 2011: 131-132):

- 1) Tijd (een regel geldt niet slechts op een moment); Time (not only valid at a given time);
- 2) Plaats (een regel geldt niet slecht op een plaats); Place (not only applied to certain places);
- 3) Persoon (een regel geldt niet slechts voor bepaalde persoon); People (not only applied to certain people); and
- 4) Rechtsfeit (een regel geldt niet voor een enkel rechtsfeit, maar voor rechtsfeitendie herhaalbaar zijn, dat wil zeggen zich telkens voor kunnen doen). Legal facts (not just for certain laws, but for various legal facts that was repeated, in other words for repeated acts).

#### **b. Policy**

Wisdom or Freies Ermessen in German came from the word frei which means free, independent, unbound. The word freis means free man, while ermessen means to consider, judge, guess, judgment, judgment or decision. English called it discretion which means wisdom, discretion, caution, or discretionnaire (adjective), which means submitted to wisdom with freedom decided or choosed (Marbun, 2011: 186-187).

Stanley De Smith and Rodney Brazier, defined Ermanessen's discretion / freies as "... power to choose between alternative courses of action ...", while H.W.R. Wade, mentions a key principle of Ermessen's discretion / freies was "... the rule that the participation of non-membersin the deliberation or decision of a collective body may in validate its acts ..." (Smith and Rodney, 1986: 571 ) .Meanwhile, Amrah Muslimin, defined ermessen fries as "... the field moved as a wisdom or freedom of wisdom ..." (Muslimin, 1985: 73).

In contrast to Hans J. Wolf in his Verwaltungsrecht I, as quoted by Marcus Luqman states the Ermessen freies was not over-interpreted, as if the bodies or administrators of the state may act arbitrarily or without basis or on an unclear basis or with subjective-individual considerations. Therefore, according to Hans J. Wolf siad, they act on wisdom (Lukman, 1989: 145).

The Ermessen freies were seen from the framework of the administrative regime system in Germany, then the Ermessen freies were means of provided the space for state administration took actions that were not fully bound by law. While in the British state administration system, according to A.V. Dicey, as quoted by Bagir Manan, "... discretionary power contains the freedom of the crown or the apparatus for approval or arrangement by parliament. So discretionary came from the prerogative and not on the law ... "(Marbun, 2011: 188).

Sjachrab Wet, was given the definition of freie Ermessen as a discretion in determining the policies through the attitude of the administration of the state that accountable. Thus, the freie Ermessen was the freedom to act on own initiative solved sudden and urgent problems arised suddenly, where the law did not regulate them, and accounted for both legally and morally (Marbun, 2011: 188).

#### **c. Decision**

Decision is one of the important study objects in administrative law, mainly because the decision is the object of dispute that became the absolute competence of administrative court according to Law number.5 Year 1986. Unless the decision is one of the juridical instruments of government which is widely used by the government in did actions to express stated desire (Marbun, 2011: 147).

The term decision is a translation of the term *beschikking* derived from Dutch, while in French was called the administrative acted term, and in German was called *verwaltungsakt* (Marbun, 2011: 148). The term *beschikking* in Indonesia was first introduced by WF. Prins. Which is means provision (Ridwan HR, 2011, 140). Djenal Hoesen said that used of terminology would probably more appropriate to avoid confusion in terms of provision. According to him, in Indonesia, the term provision already has a juridical technical sense, as a decree of the People's Consultative Assembly that applied to the outside and inside (Koesoemahatmadja, 1979: 47).

Some scholars who provided the definition of *beschikking*, among others (Marbun, 2011: 148):

- 1) Mr. Drs. E. Utrecht in his book Introduction to Indonesian Administrative Law stated that *beschikking* is a one-sided act of public law carried out by means of government on the basis of a special power.

- 2) Mr. WF. Prins in his book *Inleiding in het Administratiefrecht van Indonesia* mentions *beschikking* as a unilateral legal action in the field of government carried out by means of government on the existing authority on the tool or organ.
- 3) Van der Pot in his book *Nederlandsch Bestuursrecht* stated *beschikking* is a legal act by the means of government, the statements of the desire of the instruments of government in the implement of privilege, the intention of made changes in the field of nexus-nexus of law.

Based on several definitions of these scholars, there appear some elements found in *beschikking* (Ridwan HR, 2011: 143)

- 1) Statement of unilateral desire (*enzijdige schriftelijke wilsverklaring*);
- 2) Issued by government organs (*bestuursorgaan*);
- 3) Based on public legal authority (*publiekbevoegdheid*);
- 4) Aimed at special things or concrete and individual events;
- 5) A view to cause legal consequences in the administrative field

From the various definitions, *beschikking* (decision), is a public legal act of one-sided, was done by means of government (in a narrow sense) on a special power or authority with the intention of changed the legal relationships (Marbun, 2011: 149).

### **3.2. Principles and Norms of the Laws of State Administration in the Establishment of Legislation, Policy Regulations (*Beleidsregel*), and Decision Making.**

#### **a. Principles and Legal Norms of State Administration in the Establishment of Legislation**

In the theory of welfare state (*welfare state, verzorgingsstaat*), the task of government was not only limited to implement legislation made by the legislature. According to the perspective of the welfare state, the government was obliged to carry out the public interest (*bestuurszorg*) or pursues social welfare, which in the exercise of such obligations the government was authorized to intervene in the life of society, within the limits permitted by law. Along with such intervention, the government was also authorized to create and used legislation. Another meaning, the government has the authority in the field of legislation (Ridwan HR, 2011: 133).

The concept of separation of powers, especially with regard to the executive function which is only as the implement of the law without the authority made laws and regulations, along with the development of state and governmental tasks, not only lose the relevance, but also in the practice of encountered many obstacles. Therefore, although there is a claim that the legislative organs were the main organs of legislation, while the executive organ as a secondary organ in the draft of legislation, but as mentioned H.W.R. Wade, only measure in terms of numbers, most legislation was shaped by the executive government rather than by the legislature. Although most of the legislation was constituted by executive organs, it did not mean that the existence of legislative bodies within a state of the law became unnecessary. Therefore, it said, "... Perhaps was more realistic said that the government made the laws subject to prior parliamentary consent". That is because the legislation authority for the government or executive organ was basically derived from the law in accordance with the principle of legality in the state law which means came from parliamentary approval (Ridwan HR, 2011: 134).

- 1) The idea of power-shared that emphasizes more on function than organ separation was found in the doctrine of separation of powers. Thus, the function of the formation of legislation was separated from the function of implemented the government. The function of the formation of legislation was also attached to the administration of the state, either as an independent power or as a power which is run jointly with the legislature.
- 2) Understand that given power to the state or government to interfere with the livelihood of society, whether as state power or welfare state. According to the state of power, the intervention of the state or government was done in order to limit and control the people. One of the things that formally supports the exercise of such powers was the creation of various legal instruments that provided the basis for the state or government to act.
- 3) To support rapid and complex society changed, it was necessary to accelerate the formation of law. This encourages state administration played a larger role in the formulation of legislation. As a welfare state, various legal instruments were needed that was not simply handed over by the legislature. To conduct general welfare, state administration required authority in order to regulate without disregard the principles of the state on the law and the

general principles of good government. In such circumstances, the grewed power of state administration in the field of legislative formation.

- 4) The development of various types of laws and regulations ranging from the Constitution to regional legislation. The legislature did not form any kind of legislation but was limited to the law and the Constitution. Other types were made by the state administration.

In addition, there were other reasons given the authority of legislation for the government that was related to the nature of the norms of constitutional law and state administrative law, the general-abstract (algemeen-abstract). When confront concrete events, the norms of a general-abstract nature require a concrete-individual juridical instrument (Ridwan HR, 2011: 136). Therefore, in the literature of state administrative law there was the term step back legislator (*terugtrek van de wetgever*). This retreat was taken in an attempt applied the abstract-general and abstract norm of public administration law to concrete and individual events.(Ridwan HR, 2011: 137), In this case A.D. Belinfante said that:

"*De wet geeft daan aan een bestuurlijk orgaan de bevoegdheid door administratiefrechtelijke rechtshandelingen rechtsbetrekkingen tusssen dat orgaan en burgers te scheppen. De terugtrek is onvermijdelijk. Zij biedt het voordeel van neel verder gaande differentiatie naar bijzonderheden van de concrete toestand and de wetgever ooit zou kunnen bereiken.*"

(The law authorizes government organs to create administrative legal rules in the context of legal relations with citizens. This step back was not avoided, and provided greater benefits for the indefinite period afforded by legislators).

**b. Principles and Norms of State Administration Laws in Making Policy Regulations (*Beleidsregel*)**

Wisdom or freies Ermessen was defined or formulated as (Marbun, 2011: 196):

"Freedom or discretion acts on the law's own initiative (wisdom) permitted, to resolve urgent immediate emergency matters, whose arrangements did not yet exist or vague or vague authority, was accounted for either law and morals."

The definition of wisdom mentioned above according to SF Marbun consists of three elements (Marbun, 2011: 196-202):

- 1) The existence of freedom permitted by law to the state administration to act on own initiative.
- 2) There were important and urgent issues was resolved immediately
- 3) The responsible morally and legally as the draft and application of legislation, that was pay attention to some requirements, made and application of policy rules also pay attention to some requirements.

According to Indroharto cited by Ridwan, policy-made pay attention to the follow matters (Ridwan HR, 2011: 183-184):

- 1) It was not contrary to the ground rules containing the discretionary authority described;
- 2) It was not clearly contrary to sound reason;
- 3) It was carefully prepared, all interests, exist circumstances and alternatives need was considered;
- 4) The content of the policy provided sufficient clarity on the rights and obligations of the affected citizens;
- 5) The objectives and fundamentals of the policy considerations were taken clear;
- 6) It fulfills the requirement of material legal certainty, that the rights that had obtained from the affected citizens were respected, then also the expectations of the appropriate citizens had caused and not denied.

**c. Principles and Norms of State Administration Law In Making Decision of Understanding, the decision according to Article 1 point 3 of Law Number.5 Year 1986 jo Article 1**

Numeral 9 of Law number.5 year 2009 on the Second Amendment to Law Number.5 of 1986 concerned Administration of State Administration (SF Marbun, 2011: 162):

"A written determination, issued by the Board or Administrative Officer of the State, contained statutory acts of state law, which, by virtue of applicable, concrete, individual, and final legislation, which given rise to legal consequences for a person or a Legal Entity Civil."

In the definition above, drawn juridical elements of decision according to positive law as followed (Marbun, 1987: 10):

- 1) A written stipulation;
- 2) Issued by the state administrative body or officer;

- 3) Contains legal action of state administration;
- 4) Based on the prevailing laws and regulations;
- 5) Concrete, individual and final;
- 6) Included legal consequences for a person or a civil legal entity.

State administrative decision-making take into account some of the requirements for such decisions become lawful (*rechtsgeldig*) and had legal force (*rechtskracht*) and implemented. The requirement was considered in made this decision included hylic requirements and formal terms, (Ridwan HR, 2011: 162):

- 1) Hylic requirements consist of:
  - a) The governmental organs that made decisions authorize;
  - b) Because of the decision of a *wilsverklaring*, so the decision was not contain *juridische gebreken* in *dewilsvorming* defects, such as *bedrog*, *dwang* or *briopping*, *dwaling*;
  - c) Decisions were on a particular situation (situation);
  - d) Decision was made and without violates any other rules, and the content and purpose of such decisions was in accordance with the content and purposes of basic rules.
- 2) Formal conditions consist of:
  - a) The conditions prescribed in connection with the preparation of the decision and the manner in which the decision made was fulfilled;
  - b) Decisions were given the form prescribed in the laws and regulations on which the decree was issued;
  - c) Conditions related to the execution of such decisions were fulfilled;
  - d) The period of time was determined between the incidence of the things which cause the creation and the publication of the decision was taken into account.

This hylic requirement and formal requirements had fulfilled, then the decision was lawful (*rechtsgeldig*), it was accepted as a part of legal order or in accordance with the existing legal provisions both procedurally / formally and hylic (Ridwan HR, 2011: 163).

## 4. Closing

### 4.1. Conclusion

The rules were laws in abstract to or general norms that were generally bind (generally applicable) and the duty was regulated general matters. Based on the explanation of Article 1 Sub-Article 2 of Law Number 5 Year 1986 regarded State Administrative Court, the law and regulation were all general bind regulations issued by the People's Legislative Assembly together with the government both at central and regional levels, as well as all decisions of bodies or state administrative officials, both at the central level, as well as in the regions, which were also publicly bind.

The regulations of laws had characteristics:

- a. It was general and comprehensive, thus the opposite of special and limited traits.
- b. It was universal. It was created to face up come events that were not yet clear on their concrete form. Therefore, it was not formulated to overcome certain events only.
- c. It has the power to correct and improved itself. It was customary for a regulation included a clause contain the possibility of a review.

The policy regulation serves only as part of the operational performance of governmental duties, because not changed or in violation of legislation.

### 4.2. Suggestions

From the various problems described, the authors provided advice, in order to maintain legal certainty, and in order to maintain the legal benefits, the government in terms of legislative or decision made on the principles contained in the Law of State Administration, so that the discretion appear in the future was avoided.

## References

- [1]. Attamimi, A Hamid S (1992). *Difference between Legislation and Policy Regulation*. Paper on 46th PTIK Anniversary Speech. Jakarta.

- [2]. Hadjon, M Philipus et al (1999). *Introduction to Indonesian Administrative Law (Introduction to the Indonesian Administrative Law)*. Yogyakarta: Gadjah Mada University Press.
- [3]. HR, Ridwan (2011). *State Administration Law (Revised Edition)*. Jakarta: Raja Grafindo Persada.
- [4]. Koesoemahatmadja, Djenal Hoesen (1979). *Principles of State Administration Law*. Alumni: Bandung.
- [5]. Luqman, Marcus (1989). *Freies Ermessen in the Process and Implementation of the City Plan*. Thesis UNPAD.
- [6]. Marbun, SF (1987). *The Study of Jurisprudence of Aaanwijziq Natuurmonumenten, The Appointment of One Region As Staatnatuurmonument Is Not a General Binding Decision*. Paper for Upgrading of State Administration Law. Indonesia-Netherlands Cooperation, UNPAD. Bandung.
- [7]. Marbun, SF and Mahfud MD, Moh (2006). *Principles of State Administration Law*. Yogyakarta: Liberty.
- [8]. \_\_\_\_\_ (2011). *State Administrative Court and Administrative Efforts in Indonesia*. Yogyakarta: FH UII Press.
- [9]. Manan, Bagir (1995). *The Role of the Law of State Administration in the Formation of Legislation*. Paper presented on National Law Enforcement Administration. Faculty of Law UnhasUjung Pandang.
- [10]. Muslimin, Amrah (1985). *Some Principles and Understanding Principles on Administration and Administrative Law*. Bandung: Alumni.
- [11]. Smith, Stanley De and Brazier, Rodney (1986). *Constitutional and Administrative Law*. Penguin Book.
- [12]. The Constitution 1945
- [13]. Law number.5 year 1986 on the State Administrative Court
- [14]. Law number.5/1986 in conjunction with Article 1 numeral 9 of Law number.5 year 2009 on the Second Amendment of Law number.5 year 1986 on the Administrative Court
- [15]. Law number.10 year 2004 on the Establishment of Laws and Regulations.

# Enhancing Students' Awareness on Cross-Cultural Understanding Course Through Lesson Study

Erwin Gay

English Department, UMMU, Jl. Ki. H. Ahmad Dahlan, Ternate, Indonesia  
Email : erwin\_gay@yahoo.com

**Abstract.** Lesson study was first introduced during the Indonesian Mathematics and Science Education (MIPA). Recently, it has been developed in some other courses at UMMU Ternate such as at department of education of primary school teacher, department of public health, and especially at English department in Cross-Cultural Understanding course. Students' awareness on local culture, national, domestic, and international first was not too easy to apply in the learning process, especially in individual interacting among students and teacher related to the material. To overcome these problems, it needs to implement the lesson study that includes 3 stages: planning (plan), implementation (do), and reflection (see). The goal of this lesson study in this course is to enhance students' cultural awareness in-group discussion, improve the quality of teaching and learning, and build the pathways for ongoing improvement of instruction. This qualitative research was conducted in 4 cycles with its object was the fifth semester students consisting of 25 people. After reflection (see), the results found that students were actively participated and though insightfully to explore the ideas about the culture of what they met in their daily life through group discussion. Besides, teachers' pathways in instruction had changed from being teacher center to be student center.

**Keywords:** *enhancing, cultural awareness, cross-cultural understanding, lesson study*

## 1. Introduction

Education seems to lag behind many decades by still aiming exclusively at functionality alone and it thus seems to miss the opportunity to enhance the learners' involvement. It brings the impact to students learning that may be caused by instructional practices. Even though many college teachers may reflect in improving their practicing, there are view occasions to share with other colleagues about what they discovered about what they encountered. In fact, individual teachers are looking closely at the strategies and techniques to improve their teaching and their students' achievement in courses. In addition, the deepest desire is needed to experience sustained, high-quality professional development in order to improve students learning and teacher instruction.

After discovering some strategies, teacher professional development efforts are often criticised by educators for their lack of continuity and ability to produce effective change in teacher practice and student learning (Loucks-Horsley, Hewson, Love, & Stiles, 1998 in Rock & Wilson, 2005). Many educational scholars believe that a critical component of any educational reform effort should be to provide teachers with opportunities and appropriate support structures that encourage the critical work of on-going improvement of pedagogical practice (Darling-Hammond & McLaughlin, 1995; Garet, Porter, Desimone, Birman, & Yoon, 2001; Sparks & Hirsh, 1997 in Rock & Wilson, 2005). To overcome these critical components from educators, one of the best ways is through lesson study practice that can improve teaching and learning in higher education.

Lesson study is an on-going, collaborative, professional development process of teaching improvement activity in which instructors jointly develop, teach, observe, analyse and revise lessons for the courses in a single class lesson in a form of classroom (Cerbin & Kopp, 2006). Many teachers in Japan, the United States and Canada are interested in this process, particularly in light of the TIMSS (Third International Mathematics and Science Study) results, which highlighted the advanced performance and deeper thinking in mathematics by Japanese students.

In Indonesia, the essence of lesson study was first introduced by Japan International Cooperation Agency (JICA) through the Indonesian Mathematics and Science Teacher Education Project (IMSTEP) (1998-2003)., however, it was not recognised as lesson study until a follow up to IMSTEP (2003-2005) was implemented. Moreover, the successful implementation of lesson study was first introduced in Mathematics and Science Education (MIPA) as a model of professional development for educators in teaching and learning, recently, it spreads-out not only in Teacher Education Institutions (TEIs), but also in Non Teacher Education Institutions (TEIs) such at the university of Muhammadiyah North Moluccas at faculty of health, public health department. Another practicing this model of teaching and learning in this faculty, it has also been practiced in faculty of education at English department in one of the courses, which is Cross-Cultural Understanding.

Lesson study is really as much of a culture as it is a professional development practice [to improve students learning and teacher instruction] (Watanabe, 2003). Not only a goal of implementing lesson study, as a culture of professional development practice, but also it becomes a system of beliefs, values, and assumptions about life that guide behaviour and are shared by students as group of people. It could be the main reason why Cross-Cultural Understanding course is applied as a model of lesson study.

Cross-Cultural Understanding course (CCU), which is applied to the English department students at university of Muhammadiyah North Moluccas, concerned with cultural diversity and with understanding and identifying the problems that can occur when persons from different cultures engage in daily life. It includes the different characters of students and teachers background in teaching and learning process. Ones cultural factors cause someone seem intolerant and less generous for interpreting ideas, behaviour, attitudes and communication style to each other on discussion in the classroom, students' performance will decrease automatically in improper target. The decrease of students' performance in the subjects not only comes from students internal factor itself, but also it comes from teacher interpersonal during the lesson. These problems are definitely true found in classroom instruction during the lesson. To overcome these problems, Rock & Wilson (2005) claimed the research about the model of lesson study might be required that it may provide the valuable insight of real improvement in how teachers teach and examining the process of lesson (p. 78).

The purpose of this study in this course is to enhance students' cultural awareness in-group discussion, improve the quality of teaching and learning, and build the pathways for ongoing improvement of instruction. The study will specifically address the following research questions: (a) how will lesson study enhance students' cultural awareness in classroom instruction? (b) How will the quality of teaching and learning be improved through lesson study? The findings of the study are important in determining if the model is effective in helping teachers to examine and improve their practice.

## **2. Theoretical Framework**

### **2.1 Model of Lesson Study in Cross-Cultural Understanding Classroom**

In formulating a model of lesson study for college teachers, it could be reviewed back the sense on the model of Japanese who making necessary changes to adapt to the contexts and purposes of American higher education, which are in no way uniform across institutions or disciplines. Chokshi & Fernandez (2004), Fernandez & Chokshi (2002), Fernandez & Yoshida (2004), Lewis (1998a, 1998b, 2002), Lewis & Tsuchida (1997, 1998), Stigler & Hiebert (1999), Yoshida (1999) acknowledge the Japanese model as the intellectual inspiration for their work and recommend the work of scholars who have brought lesson study to the attention of Western educators and researchers (in Cerbin & Koop, p. 250, 2006).

These two experts also stated four main reasons that lesson study is worth the time and effort in higher education as: (a) Teaching Improvement: It is an ideal venue for teaching improvement. In contrast to workshops and seminars that discuss general teaching strategies, lesson study looks directly at one's classroom. Teachers focus on how their students learn and what kinds of instructional activities support student learning and thinking. By focusing on one lesson, instructors can learn about students, instruction, goals, and subject matter without undertaking extensive course revision. (b) Instructional Materials: Lesson study results in a field-tested lesson and materials that can be used and adapted by other instructors. The systematic, evidence-based approach makes it possible for teachers to build on one another's work. By the end of the lesson study process, teams produce knowledge

about how students learn from instruction. (c) Teaching Community: The Lesson study process helps build communities of practice around teaching. Instructors report that collaborating with their peers is a particularly rewarding experience. Lesson study cultivates mutual understanding of goals, teaching practices and student learning among teachers. (d) Scholarly Inquiry: Lesson study is a form of the Scholarship of Teaching and Learning—the final products are suitable for professional presentations and publication. Lesson study integrates teaching and research, theory and practice.

As a process in which teachers jointly plan, observe, analyze, and refine actual classroom lessons called "research lessons", lesson study is implemented to improve teachers teaching especially in CCU lesson. The research lessons at the heart of the lesson study process are actual classroom lessons that provide opportunities for teachers to bring their ideas about effective teaching to life as they learn how to carefully record student learning in order to evaluate the research lesson, the students, and their own understandings about teaching and learning (Lewis, 2002). Research lessons are actual classroom lessons, taught to one's own students, that are (a) focused on a specific teacher-generated problem, goal, or vision of pedagogical practice, (b) carefully planned, usually in collaboration with one or more colleagues, (c) observed by other teachers, (d) recorded for analysis and reflection, and (e) discussed by lesson study group members, other colleagues, administrators, and/or an invited commentator (Lewis & Tsuchida, 1998).

To begin the lesson study as the research lesson in cross-cultural understanding, the researcher first follow the lesson study process in order to focus on not only what students learn, but how they learn, which are: (a) Choose a research theme: A group of teachers in English department works together to come up with a research theme. This theme is school-wide and focuses on a broad research question regarding to students that involves skills or attitudes they would like to foster. For example, a research theme may be to determine how to increase independent thinking in students in classroom instruction. (b) Create the lesson: The teachers then select a lesson within the unit to develop, and follow an established lesson plan template. This template focuses on how the lesson fits within the broader school curriculum, linking the lesson topic and skills to previously learned content, and to content that will be learned in future grades. This lesson plan template also focuses on ways to assess student thinking during the lesson. (c) Teach and observe the lesson: The lesson is taught by a member of the group and observed by the other members. The focus of the observation is on student thinking not on the teacher's abilities. (d) Discuss the lesson: The group then gets together to discuss the lesson and their observations. This is usually done on the same day. (e) Revise the lesson: Revisions are made to the lesson, based on their observations and analysis, and another member of the group is selected to teach the lesson again. The process of observation, discussion, and revision repeats. (f) Document the findings: At the end of this process, the group produces a report that outlines what they learned in regards to their research theme and goal (Hurd & Musso, 2005).

## **2.2 Objectives and Hypotheses**

The present study investigated the relevance perceived of students task (question sheet, group discussion, and group presentation), students journal reflection, and observers existing documents and records in learning environment. The results of this investigation were used to validate the data of students' activity and journal reflection for both students and observers that were used for this study. Based on the research questions that were formulated, the hypothesis were proposed that through lesson study: (1) it can improve students cultural awareness in learning based on observations and assessments, (2) students are actively participate and though insightfully to explore the ideas in group discussion, (3) it can improve quality of teaching and learning, and it can change pathways in instruction from being teacher center to student center.

## **3. Methodology**

The general theory of constructivism, with an emphasis on social constructivist ideals, provides a framework that supports the use of the lesson study process as a potential method for increasing teacher professional knowledge and development. The primary theoretical principle of social constructivism asserts the social nature of knowledge and the belief that knowledge is constructed through social interaction and is a shared rather than an individual experience (Gergen, 1995; Vygotsky, 1978). Thus, social constructivism emphasizes that knowledge is constructed in response to social interactions through social negotiation, discourse, reflection, and explanation. Therefore, during

the lesson study process, professional collaboration occurs as teachers of various levels of experience work together in groups to study their practice through the implementation of a research lesson.

The application of constructivism to instructional design has certain advantages such as more meaningful learning outcomes, more independent problem-solving capability and more flexibility in both design and instruction activities. The constructivist-pragmatist role that the researcher adopted in this study focused on understanding the students as individuals who live and work in the world (Creswell, 2007, p. 20). The identification of personal values, assumptions and biases at the outset of the study were necessary and were an integral part of the primary instrument data collection (Creswell, 2009, p. 196). Particularly methods of qualitative (Cresswell, 1994) is that the role of primary data collection can show the firsthand experiences of participants for teacher in gaining in-depth understanding of the lesson study process in research lesson.

Therefore, a social constructive view of research participants was adopted in this study. This framework allowed for the participants to complete a journal feedback after they engaged the lesson about Cross-Cultural Understanding as part of the study. Open-ended questions in journal reflection sheet were given to the participants at the end of intervention through lesson study practice. The interventions of constructivism covered students' performance individually and within group in social environment before and after having the class. Self-assessment in motivation of enjoyment and effort and assess answer within socially collaborative environments from participants was also used to measure their improvement in learning through lesson study process. Not only students in group discussion are acquired to be assessed, but also teachers in collaborative work through the lesson study process need to reflect on their experience, to create understanding, and share their understanding to others to increase students and teachers professional knowledge and skills (Rock & Wilson, 2005).

### **3.1 Subjects**

Twenty-five of fifth semester students of EFL teacher-training program at UMMU were asked to participate in the study. Most participants in this study achieved their elementary and secondary education in a remote area, which comprised primarily traditional approaches to teaching or face-to-face classroom instruction. However, there were a few participants who graduated from school at the city of Ternate. Most students in the English Department at UMMU come from isolated areas in Indonesia and are seeking ways to make the school environment more productive for those who are regarded as marginal in their living environment. Students have been acculturated to a certain degree, having been exposed to the behavior pattern, artifacts, and cognition of make up their own culture such as Ternatenese, Sananese, Jailolonese, Ambonese, Makianese, Ibunese, Tidorenese, and so forth.

As teachers encounter an increasingly heterogeneous group of students, they will need to acquire new knowledge, attitudes, and skills to be effective in multicultural classrooms. Due to cultural and social circumstances, diverse learners bring differing experiences and knowledge to the educational setting, and therefore have unique needs and varied preferences for learning. Conventional teaching and learning approaches such lesson study may effective or congruent with the learning styles of students from culturally diverse backgrounds. In this perspective on different cultural background, the course of Cross-Cultural Understanding through lesson study is perfectly appropriate used in classroom instruction.

### **3.2 Procedure**

The intervention for this research is implementing lesson study as teacher practice to engage students' awareness and teachers' pathways in teaching and learning. Students worked on tasks and activities individually, with a peer, and in groups during the lesson. To achieve the students goals through lesson study process, teacher first plays a rule to planning team to decides on lesson to be studied, raises questions and issues about the lesson, makes instructional decisions as a team, completes lesson study meeting log, insures that the gradual release process is in lesson plan (Watanabe, 2003). The material can be designed by thinking about the long-term goals of education - such as love of learning and respect for others; carefully consider the goals of a particular subject area, unit or lesson; (c) Plan classroom "research lessons" that bring to life both specific subject matter goals and long term goals for students; and (d) Carefully study how students respond to these lessons - including their learning, engagement, and treatment of each other.

One benefit of lesson study process called "plan" is design better lessons that promote student engagement and thinking, deepen content/subject matter knowledge, build supportive collegial

relationships, learn successful instructional strategies and behaviors from other teachers, share and design best Practice, improve student learning based on observations and assessments, problem solving, collect and analyze student work and behavior data, directs the teacher’s focus to student outcomes, links teacher behaviors to student gains (Watanabe, 2003).

In planning a lesson Cerbin and Kopp (2006) emphasize that teachers predict how students are likely to respond to specific questions, problems and exercises. Teachers try to put themselves in the position of a student and imagine what it would be like to experience the material and lesson activities as a novice, an approach that fosters the development of pedagogical content knowledge. In order to investigate student learning during the class period, teachers try to design a lesson that makes students’ thinking visible—that is, open to observation and analysis. Not surprisingly, lesson study involves more time and greater depth of planning than typical class preparation (p. 251). The class preparation includes the schedule of research lesson and volunteers as observers.

The phases of the research lesson included the material followed the schedule of the Cross-Cultural Understanding (CCU) course, which had been done in at the last four week (week XII, week XIII, week XIV, and week XV) before the examination day in the week of XVI. The schedule could be seen bellow:

Table 1. Schedule of Research Lesson

<i>Time</i>	<i>Week</i>	<i>Group Presentation/Material</i>	<i>Classroom Practiced</i>
Wednesday, November 28, 2016	IX	Group 1. Local Makian and Sula	Traditional/Conventional
Wednesday, December 5, 2016	X	Group 2. National Sunda and Toraja	Traditional/Conventional
Wednesday, December 12, 2016	XI	Group 3. Domestic Egypt and India	Traditional/Conventional
Wednesday, December 19, 2016	XII	Group 4. Local Ternate and Tobelo	Lesson Study (Phase 1)
Wednesday, December 26, 2016	XIII	Group 5. National (Papua and Bali)	Lesson Study (Phase 2)
Wednesday, January 2, 2017	XIV	Group 6. Domestic (China and Thailand)	Lesson Study (Phase 3)
Wednesday, January 9, 2017	XV	Group 7. International (American and Europe)	Lesson Study (Phase 4)

Teacher first gave introduction about the material then provided the time for students to discuss the lesson based on the handout distributed on that meeting and the article distributed on the previews meeting. After explaining the lesson, students in weekly group base that consist of seven groups answering the questions and doing the discussion based on the reading and their social life experienced. Participants in a group consist of 3-4 members then present about material relate to the weekly assignment scheduled. The material shown in table 2 as follow.

During the lesson, team members of faculty of education at UMMU that consist of 3-9 instructors in interdisciplinary subject areas observed the classroom during the lesson. Lesson study is one of the first time instructors systematically observe and analyze students’ classroom activity. What observers propose in instructional practices are considering on helping students achieve the goals, a process similar to backward design (Wiggins &McTighe, 1998). In observing the CCU class, another to observe the teacher teaches, observers also focus on how students respond to the lesson on helping

the pave way for public knowledge building. In this research lesson, instructor was required to be observed about the way of being actor in the class.

**Table 2. Class Material**

No	Cultural aspects of people differ from each other:
1	Personality Age Gender Level of education Abilities
No	How do you see these aspects into community:
2	Cultural beliefs (religion, medicine: traditional, ghoib) Values (diversity, time, family life, dinner or lunch, party, dress code, etc) Behaviors (friendliness, dating, etc) Customs (meeting and greetings, command and request: asking for help, tipping, etc) Language (e.g., percentage of native speaker, communication styles, intonation/rhythm, Material artifacts (historical places, buildings, symbols, etc).

The job of observers are collecting the evidence relate to the learning goal during the lesson, capturing the process of teaching and learning, and observing the entire class or focus on specific students during the lesson. The lesson is videotaped sometimes from multiple vantage points, for future reference and review. Then, team members in the collaborative work do the reflection soon after teaching. This step is what can be called as lesson study process.

### **3.3 Data Collection**

This constructive and confirmatory study were conducted during a course of 4 weeks in November 2016 to January 2017 to collect the data from the results of student work assignments (task, discussion, and presentation) and journal reflection. Student work assignment had been recorded during Phase I, Phase II, Phase III, and phase IV, and journal reflection in the Phase I-IV at the end of the lesson. A qualitative methods were employed to collect the data and then analyze the same to determine the students' performance during the intervention because of the nature of the research questions and the intent of the researchers to gain an in-depth understanding of the lesson study process and it's meaning for teachers through their own lessen design. Data collection steps for this study included the collection of information from students' journal reflection, documents (field notes/observations), visual materials as well as established protocols for recording information, and teacher reflection.

In addition to work assignment and journal reflection, the researcher observed participants' behavior in their natural and authentic setting happen in classroom such observation focused on how the students doing the activity during the lesson. A qualitative method was adapted in this study, linking key themes by reading the raw data in detail from student journal reflection sheet. The researcher summarized and condensed the intensive and varied raw data to note primary themes to link the research objectives and summarize findings derived from the raw data to produce reliable and valid findings.

Through lesson study, teacher prepares observation guidelines that describe the lesson and indicate what kinds of data to collect, and teams member of faculty of education doing the observation of written and spoken during the whole lesson. Teams interested in the question of effectiveness may collect specific and additional data for that purpose the evaluation of student performance such class activity which generally include detail narrative records on what the students said and wrote, how the students used the material, what specific purpose supports encouraged understanding, and what obstacle to learning arose during the lesson. Team members may observe either a single student or several gathered at the table Lewis, Perry, & Hurd, 2004).

### **3.4 Data analysis**

Qualitative data was analyzed by student scale reports on task, class activity (discussion and presentation), and journal reflection with open-ended questions. Qualitative data analysis was conducted concurrently with the gathering of data and then making interpretations, and writing reports about what students gained through their participation in classroom activity.

Tesch's (1990) noted that systematic process of analyzing textual data was utilized to segment the interview transcripts, field notes, and teachers' reflection entry into coding categories that allowed for the emergence of themes and patterns in the data. As recommended by Miles and Huberman (1984), a matrix was developed to display data related to the change in the participants' instruction in a systematic format for the reader. Construct validity (Yin, 1994) was addressed in this study through (a) using multiple sources of data, (b) using different researchers to analyze the data, (c) establishing a chain of evidence, and (d) requiring member checking (in Rock & Wilson, 2005). To check against bias by the article authors, who favor the use of inquiry models of teacher professional development, the participants reviewed transcripts and the written report to insure that their verbal and written expressions were accurately interpreted and the nature of the experience was accurately captured.

The data collection that had been collected by the team members, soon after the lesson was taught, the briefing would be held to examine the evidence related to the learning goals and to reflect on the experience. Participants (observers) share their observations and examine additional evidence from the lesson, such as student written work, searching for patterns that may reveal important insights into teaching practice and student learning. The result of this collaborative reflection has a big sense that the research lesson is the team product. The descriptive statistics such as graphs and tables of student measurements from data analysis was identified the comparative scores between their work assignments during four phases.

## **4. Findings and Discussion**

Another for students, the goal of the Lesson Study approach in this course is also to professionalize CCU teacher by designing, observing, implementing and evaluating two research lessons. Firstly, the lesson observations completing this study were focused on covering students' thinking processes on task, discussion, presentation, and transcriptions of students' journal reflection as an effect of a research lesson. Secondly, lesson study is as an indication of a successful professional development through observers' reflective journal. In other words, the aim of lesson study is to enhance the learning of students and engage teachers in constructing new meanings about instructional practices.

Data were collected, categorized, and coded to answer the main research questions: (a) How will lesson study enhance students' cultural awareness in classroom instruction? (b) How will the quality of teaching and learning be improved through lesson study?

### **4.1 Lesson Study Enhances Students Cultural Awareness in Classroom**

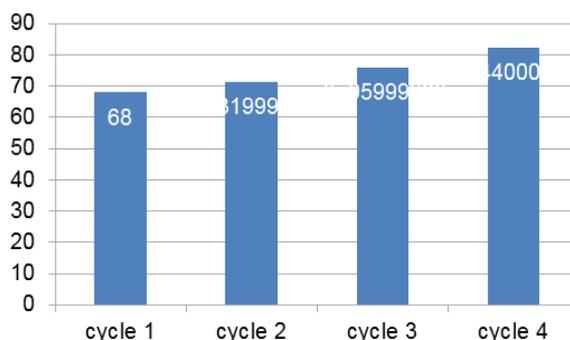
#### **4.1.1 Students Task, Group Discussion, and Presentation**

Lesson study practice was holding in four cycles in the week of XII (Wednesday, December 19, 2016: Local Culture of Ternate & Tobelo), week XIII (Wednesday, December 26, 2016: National culture of Papua & Bali), week IV (Wednesday, January 2, 2017: Domestic culture of China & Thailand), week XV (Wednesday, January 9, 2017: Western culture of USA & Europe).

Teacher in each meeting as regular class opened the class and checked students' attendance. Before beginning the new topic, teacher asked students to refresh the last material and homework given in the previews meeting. Teacher then introduced a new topic, briefly explained, and formed the class discussion based on the group that had been formulated in the week of X. To measure the ability of individual achievement on task, discussion, and presentation, it recorded and analyzed as the result that had been accumulated from the four cycles showed in the table below:

The figure above shown that there was some significant improvement from cycle one to cycle four. In the first cycle, the average result was 68.00, rise up to the second cycle, 71.32, then increase to 75.96 in the cycle 3, and improve to 82.44 in the cycle 4. Instructor incorporated the cooperative learning in each lesson to change the strategy of teaching and learning to achieve the students' improvement. At the first week of lesson study process, many students still confused about the lesson and got nervous about the learning environment because they never involved the classroom instruction with the observers in., however, in the next cycles, the teaching learning process was better than the

previous one. Many students joined the class activity enthusiastically. Students also became more aware of their own potential for improvement by working together in a group rather than in isolation. In addition, students have a lot of opportunity to active involvement during the discussion process in order to defend their opinions and experiences about culture. So, it could be concluded that lesson study practice is an appropriate model used in teaching and learning for university students.



■ Figure 1. Students achievement on cross-cultural awareness

#### 4.1.2 Students' Journal Reflection

Another to students achievement on task, discussion, and presentation, there was the data was analyzed to establish the outcome of each scale in the instrument of students reflection sheet. The outcome variables were analyzed in two separate themes. The first theme was done to see the students' enjoyment. The second theme was to see the students' effort in the courses of Cross-Cultural Understanding.

From the 25 responses received on the questions in journal reflection are (a) How far did you enjoy complete the task, doing discussion, and presentation the learning process today? (b) How big your effort to participate in classroom activity today? (c) If you have suggestions, what will you suggest for the teacher to achieve your enjoyment and effort. This reflection sheet was distributed in each week at the end of the lesson study class in the week of XII-XV. Descriptive statistics are shown in the following table.

**Table 3.** Students Reflection on Journal

	Cycle 1	N	Cycle 2	n	Cycle 3	n	Cycle 4	n
Enjoyment	0.72	18	0.72	18	0.84	21	0.92	23
Effort	0.64	16	0.68	17	0.76	19	0.84	22

Based on the descriptive analysis of students reflection, students reported that, when completing the tasks, doing the discussion and the presentation, they felt enjoy and effort as well as related to the teacher and their classmates. They also perceived the tasks as valuable. In addition, students reported that they enjoyed doing the tasks and devoted a lot of effort to complete them.

These two variables were significant as they exceeded above point of 60 % at the very beginning cycle. Students reported that the enjoyment they expended (0.72) and the degree of effort (0.64) in completing the tasks, doing discussion, and presentation in the first cycle. They also reported that what have they done were of high value for them increase in every single meeting starting from cycle 1 (enjoyment 0.72) and (effort 0.64) to cycle 4 (enjoyment 0.92) and (effort 0.84).

18 responses in the first cycle stated that attributing clear purpose and value to the task would motivate students to enjoy the task even though sometimes they felt that the task was difficult and boring. Students consist of 16 have the big effort to do the class activity. In addition, the task would be perceived as more valuable if it was designed to fit students' needs in learning the language.

21 other reflections in cycle 3 stated that the task would be more enjoyable if students were given more opportunity to interact and get connected with their classmates in the group. The next major of 23 in the cycle 4 suggested on how to improve the task were to provide worthwhile examples for students and give fewer assignments with more time to complete them. The remainder of the responses ranged from giving more autonomy to students to choose their own reading materials, giving more relevant practices, making sure that students are familiar with implementing lesson study practice to complete the task, giving clear instruction, and providing extra credits. In addition to enjoyment, students' effort from the quantity of 16 in cycle 1 was getting improved up to quantity of 22 in cycle 4.

#### ***4.2 Lesson Study Improves the Quality of Teaching and Learning***

##### ***4.2.1 Observers Reflective Journal***

Lesson study provides one way in which teachers can systematically improve instruction and decrease teacher isolation, if it can be sustained over time. Lesson study also provides a process for teachers to collaborate and design lessons while examining successful teaching strategies to increase student learning because in the process of lesson study, teacher work together to plan, teach and observe a cooperatively developed lesson. While one teacher implements the lesson in the classroom, others observe and take notes on student questions and understanding. The development of an "ideal lesson" is not the critical component in the lesson study process (Lewis, 2000), but it focus on student learning and professional collaboration is what drives the group process. During the observation, findings not only focus on students' improvement through learning across group and individual reports, but also indicated a primary individual focus on teaching.

By doing reflection, teams document their lesson during observation in order to teachers can review and learn from their work. Teachers conversations during the discussion of reflection confirmed that they appreciated, above all, the opportunity to have time to discuss in detail how they could teach more effectively and how they could develop their students' learning because teachers enjoyed the opportunities to discuss their work together and they wanted greater time to do the observation and the reflection. The time taken to reflect and present this research lesson was crucial to help teachers to understand the impact and significance of the lesson study practice as a research lesson and this became an important aspect to bring into the academy's lesson study work.

In examining the successful teaching in reflection session, observers (teachers) were particularly receptive to the focused professional development activities involved in lesson study. One observer also indicated that she would be more confidence in approaching instruction as a result of engaging in the lesson study experience. She will apply the suggestion from other observers about not blocking the students' view while writing in the board and increase the voice tone while teaching.

Confidence could be achieved through Lesson study, which encompasses the full complexity of teaching and learning in the context of a single class lesson. Essentially, teachers have opportunities to question, explore and reflect on every phase of the teaching and learning process. Lewis (2005) stated that lesson study creates multiple "pathways for learning" that lead to instructional improvement. According to her model, teachers' thinking and practice may improve in multiple ways as a result of; (a) increased knowledge of subject matter, (b) increased knowledge of instruction, (c) increased ability to observe students, (d) stronger collegial networks, (e) stronger connection of daily practice to long term goals, (f) stronger motivation and sense of efficacy, and (g) improved quality of available lesson plans (p.115).

Furthermore, one way to lead the instructional improvement is keep-observing students during the class activity. Another interesting reflection found from observer:

"During discussion session, I observe a student in group 5. He was just pretend to listen his group members without saying any word. The solution I would suggest to you as teacher, oppsss, I mean to us as teachers, please come closer to students for controlling the their activity. Our closer for them might engage them motivate to speak up".

Findings revealed from the data clearly indicate that the lesson study model can serve as a means of teacher professional development with positive impact on teacher instructional practice. Fernandez, 2002; Fernandez and Chokshi, 2002; Lewis and Tsuchida, 1998; Stigler and Hiebert, 1999; Yoshida, 1999) have commented that the use of "Lesson Study" has become prominent among

teachers and educators. Improving teaching and student learning has become the focus of teachers' professional development (in Cheung & Whong, p.137, 2013).

Improving teaching and student learning through lesson study practice brings one of benefits which is stated by other observer, "Another benefit I learned in this study lesson was how to facilitate an effective discussion using the model of number head together (NHT) where students answered the questions through confirmation in their group members which that questions were delivered by other groups.

Data from the study indicates that teachers consider themselves and their practice to be more effective as a result of participation in the lesson study model. It means that lesson study process engages teachers as learners within their own classroom.

## **5. Conclusion**

After implemented lesson study as classroom instruction, students' behaviors that support student engagement are likely to contribute to both positive attitudes about the class and to enhanced learning. In particular, student perceptions in the lesson immediately, "present," or significant to the interaction help establish the cultural awareness in which students attend to one another, share ideas, more tolerance, trust one another, and collaborate. Moreover, the vast majority of students' awareness was immediately enhanced in their triads, discussing the potential focus and clearly appreciating the opportunity to discuss the lesson with their group members.

This research shows that teacher of CCU was able to engage in the inquiry process of lesson study and successfully bring about change in his practice that addressed the individual learning needs of the students.

In addition, the essential of lesson study has changed the college teachers' pedagogical thinking and practices because it becomes the most effective way to improve teaching would be for teachers to develop further the culture of sharing and working together. Its essential is also found as the power of collaboration that focused on the classroom and the learning of students.

Furthermore, there was an overwhelming positive reaction to the opportunities that lesson study was providing for many teachers. The positive outcome that it could use to encourage teachers in our community to engage in research as there needed to be a tangible outcome for them which they could relate to in terms of their own development.

This research lesson is a continued need for further implementation and future research on the lesson study model. Implementing lesson study in Indonesia not as an educational project that is supported from ministry of education and culture, but this teaching and learning practice could be continue as the independent practice that should be applied in the Principe of Total Quality Management, which is to improve the quality of learners learning and teachers teaching (Ahmad & Gay, 2012). Darling-Hammond (2003) confirms repeatedly in her work "creating a profession of teaching in which teachers have the opportunity for continual learning is the likeliest way to inspire greater achievement for children" (p. 281). A better understanding of how to make this type of professional-development model work most effectively not only use the budget from government or foundation, but also it could be as volunteering work for all teachers in a variety of settings and contexts is needed.

## **ACKNOWLEDGEMENT**

I acknowledge the rector of University of North Moluccas: Dr. Kasman Hi. Ahmad, M.Pd, coordinator of lesson study committee: Dr. Nahjiah Ahmad, M.Pd, faculty of education and staffs: Nurlaily Sofyan, M.Hum, Amrin Hi. Saban, SS.,M.Pd.BI, Ummi Salamah Tianotak, S.Pd, Rezky Antony Badaruddin, M.Pd.BI, Abdurrahman Hi. Usman, S.Pd,SH.,M.Pd, Taslim Buaja, SE.,M.Pd, Rahmaniah Sadek, S.Si.,M.Pd.,Taufik Abdullah, SS.,M.Pd, Rahma Hanadi, S.Pd.,M.Pd, Fatimah M.Djen, M.Pd. I would also like to express our gratitude to the students of CCU course, 2016/2017, who were willing participants in this venture.

## References

- [1]. Ahmad, N. & Gay, E. (2012). Developing the Professionalism of Lecturers through Lesson Study at Faculty of Education, University of Muhammadiyah North Moluccas. Proceeding of National Seminars of Lesson Study Math and Science. 88-102.
- [2]. Cerbin, B. & Kopp, B. (2006). Lesson study as a model for building pedagogical knowledge and improving teaching. *International Journal of Teaching and Learning in Higher Education*, 18(3), 250-257.
- [3]. Creswell, J.W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- [4]. Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications Ltd. London, United Kingdom
- [5]. Gergen, K.J. (1995). Social construction and the educational process. In M. Larochelle, N. Bednarz, & J. Garrison (Eds.), *Constructivism and education* (pp.156-172). Cambridge, UK: Cambridge University Press.
- [6]. Lewis, C. & Tsuchida, I. (1998). A lesson is like a swiftly flowing river: Research lessons and the improvement of Japanese education. *American Educator*, Winter, 14-17 & 50- 52.
- [7]. Lewis, C. (2002). *Lesson study: A handbook of teacher-led instructional change*. Philadelphia, PA: Research for Better Schools, Inc.
- [8]. Lewis, C, Perry, R., & Hurd, J. (2004). A deeper look at lesson study. *Educational Leadership*, 61, 5, 18-23.
- [9]. Stigler, J., & Hiebert, J., (1999). *The teaching gap*. New York: The Free Press.
- [10]. Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. New York: Falmer.
- [11]. Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological process*. Cambridge, MA: Harvard University Press.
- [12]. Watanabe, T. (2003). Lesson study: A new model of collaboration. *AcademicExchange Quarterly*, 7(4), pp.
- [13]. Wiggins, G. & McTighe, J. (1998). *Understanding by design*. Alexandria, VA: Association of Supervision and Curriculum Development.

# Juridis Review of TNI Existence in Indonesia's Authority System Based on 1945 Constitution

**Evi Purnamawati**

Fakultas Hukum Universitas Palembang  
Email : evipurnamawatiplg@gmail.com

**Abstract.** One of the most important reform agenda is the restructuring of the Role, Function and Task of the Indonesian National Army (TNI) in the Indonesian states administration system. This success is certainly strongly influenced by the consciousness of TNI Soldiers in securing the agenda seriously and also has proven itself to always be neutral in practical political life. The problems in this study, on how the existence of the TNI in the Indonesian state administration system according to the 1945 Constitution, What are the obstacles and opposition faced by TNI reform The method used in this study was the method of Juridical Normative (Legal Search) was a legal research doctrine, which is also called research bibliography or document studies. The conclusion in this research is, The main role of armed forces is as an instrument in running external defense (external defense). The role is exercised either through war operations, as well as non-war (military operations other than war) whose scope of activities can be external (overseas, such as peacekeeping operations and rescue operations of threatened citizens abroad) or internally within the country (such as civic missions and humanitarian relief). TNI roles, functions and tasks should also be placed in the perspective of the threat character facing Indonesia as a post-colonial State that is in the process of nation building. Unlike the politically and economically established democracies, Indonesia could not simply place the role of the TNI only as an external defense instrument.

**Keywords:** *The existence of TNI in Indonesian states administration system*

## 1. Introduction

After carrying out the mandate of reform for a decade, it is natural for Indonesians to ask how far the achievements have been gained in that period. So far, various assessments have been put forward by many parties on the progress, progress, and stagnation (if not the decline) in various aspects of Indonesia's social, political and economic life. However, regardless of the positive or negative assessment, it should be emphasized that the process of reform that has been running for a decade is a process that is still ongoing (work in progress).

One of the most important reform agenda is the restructuring of the Role, Function and Task of the Indonesian National Army (TNI) in the Indonesian states administration system.

The only national property that remains unchanged is the TNI, said Commander-in-Chief General Sudirman as one of the nation's best male figures, who for his life has never denied the struggle for defending and sustaining independence. This statement encourages the TNI to always take part in maintaining three important factors that guarantee the fundamental in ensuring the survival or existence of the Nation, namely the sovereignty that must remain upright, the territorial integrity of the Unitary Republic of Indonesia which must be maintained and the safety of the nation and the whole of Indonesia must be guaranteed. So the concept of maintaining and improving the quality of life of the Indonesian nation must be designed by utilizing and developing all the potential and national power in total.

As a tangible manifestation of this mandate, the TNI has contributed positively and participated in building the life of the nation and the state. This could be proved by the success of the TNI in supporting and guarding the national democratic agenda, especially in the peak of the Legislative Election process and the Presidential Election directly elected by the Indonesian people. This success

is certainly strongly influenced by the consciousness of TNI Soldiers in securing the agenda seriously and also has proven itself to always be neutral in practical political life.<sup>56</sup>

This shows that the process of positioning, the role and task of the TNI in a democratic state system requires a long process and will only work well if there is a desire and seriousness between the TNI, the people are rarely stagnant and even cause tension between political organs and some circles within the TNI must abandon its privileges which it has enjoyed over the 32 years of the New Order that placed the TNI as a dominant force in the Indonesian political system at the time and placed its position on other components of the nation.

The role sharing between the TNI and the Police, although it has been going on for more than five years, until now still poses quite a complicated obstacle, both at the upper and lower levels in the field.

In that success, the TNI has never ceased to develop its role in the participation effort in building the life of nation and state, because TNI is fully aware that the progress of development so far has put Indonesian nation in a better condition. Through various policies the government has made programs and conducting development activities consistently, integrated and cross-sectoral by considering the suitability of spatial areas, legal system and institutional reliable, and coordination and solid cooperation between Ministries, Non-Ministry Government Institutions (LPNK) and Local Government. However, the results of these activities still need to be optimized to be able to touch the community, especially in isolated areas, vulnerable areas, islands of the forefront and inter-state land border area which is the front porch of the Unitary State of the Republic of Indonesia.

Along with the meaning mandated by RI Law Number 34 Year 2004, TNI as one component of the nation that has the identity as the People's Army, the Army of Fighters, the National Army, and the Professional Army can serve as the glue of unity and unity of the nation that spread throughout the territory of NKRI. Where the peace of the TNI is not only a defense force that is prepared to face the military threats that endanger the sovereignty of the State, the territorial integrity and safety of the whole Indonesian nation, but also as a force to assist the government in the process of national development through the task of Military Operations Besides War (OMSP) so it is not excessive if the TNI in addition as a defense force also serves as a moral force and cultural power, which is able to lift the image of the nation in the international bleak.

In order to provide optimal contribution to the nation and the State, TNI's strength and capabilities and facilities need to be utilized through "Optimizing the Role of the TNI in Building the Life of the Nation and State" whose implementation is realized in the form of cooperation with Ministries / Non-Ministry Government Institutions (LPNK) and Local Government, which is carried out continuously without stopping with the spirit of militancy is high in order to achieve the optimization of mission and goals.

Optimizing TNI's role is a concrete manifestation of TNI's participation and contribution in national development. The contribution of the TNI is based on a sincere intention, so it is not an intervention on government policy, in this case Ministry / Non-Ministry Government Institution (LPNK) and Local Government, and all activities are based on the result of agreement and mutual understanding.

### **1.1. Problems**

Based on the above descriptions, it appears that various problems encountered in one of the roles and functions. Armed Forces in the National Security system. In this study the author needs to get serious attention. The problems that will be discussed in this research:

1. What is the existence of TNI in the Indonesian states administration system according to the 1945 Constitution?
2. What are the obstacles and challenges facing TNI reform?

### **1.2. Objectives Of Research**

In this study, the authors limit the scope of the discussion only on the scope of concern, the role of civil society in encouraging the TNI Reform and obstacles faced by the TNI after reform in the Indonesian states administration system according to the 1945 Constitution.

---

<sup>56</sup> Awal di keluarkannya Polri dari ABRI, yang kemudian dikukuhkan dengan TAP MPR-RI No. 6/2000 tentang Pemisahan TNI dan POLRI, serta TAP MPR-RI No. 7/2000 tentang tugas dan wewenang TNI dan Polri

## 2. Research Methods

The method used in this study is the method of Juridical Normative (Legal Search) is a legal research doctrine, which is also called research bibliography or document studies.<sup>57</sup> By using some approach method that is:

1. Method of systematic approach, which is an approach method based on collecting materials that have been available, to this material is codified into groups in a systematic way.
2. Type of research in this paper is to use exploratory research, which is a study conducted to obtain explanation and data explanation of things that have not been known.

The data used in this study is secondary which consists of primary legal materials, secondary legal materials, and tertiary legal materials.

1. Primary Legal Material, consisting of the 1945 Constitution, the MPR Decree, the Law on Local Government either not valid or applicable.
2. Secondary Legal Material, which is a legal material that provides explanation of primary legal materials, such as the results of research, the work of the law and so on.
3. Tertiary Law Material, which is material that gives guidance and explanation of primary law material and secondary law material, like dictionary, encyclopedia, web site and others.

Data analysis in research conducted qualitatively is the process of organizing and sorting data into patterns, categories and one basic description so that can be found and formulated or some conclusions.

## 3. Discussion

### 3.1. *The Existence of the TNI in the Indonesian State System Under the 1945 Constitution*

Discussing the role and function of the Armed Forces in the national security system, a democracy is actually less complicated. In many countries, the democracy of the armed forces is an important component in protecting the State from various threats, especially those coming from abroad (external threats). In such an order, the main role of the armed forces is as an instrument in carrying out external defense. The role is exercised either through war operations, as well as non-war (military operations other than war) whose scope of activities can be external (overseas, such as peacekeeping operations and rescue operations of threatened citizens abroad) or internally within the country (such as civic missions and humanitarian relief).

However, in the Indonesian context, discussing the role, functions and tasks of the armed forces in the national security system is not as easy as imagined. The main difficulty comes from the term "national security" itself. Until now, we still have not found the proper format and understanding of "national security". Consequently, at a time when national security practices should be institutionalized, at the same time we are still struggling in the conversation about what "national security" means. Consequently, let alone find the proper arrangement on the role of the TNI in the national security system, the discussion and debate about the needs and the process of structuring the regulatory framework of the national security sector is still not over.

In addition to the incomplete semantic and conceptual issues, discussing TNI roles, functions and tasks in the context of national security are also confronted with three distinct Indonesian contexts. First, the rearrangement of the TNI's position in the national security system proceeds at a time when the State of Indonesia itself is at a stage of political transition after abandoning authoritarian political practices since 1998. In the transition process, it is unrealistic to expect changes to occur in a short period of time. Coupled with the transitional process that is often characterized by a political bargaining process among political actors (including TNI and Polri), the effort of structuring TNI's role in the national security system can not only be focused on the TNI alone, regardless of its association with other actors, especially Polri, intelligence agencies, as well as civilian political forces. In other words, the process of positioning the TNI in the national security system becomes difficult because the process of structuring the Indonesian political system itself is still not complete.

Secondly, as a result of the transition process, TNI positioning in the national security system faces the constraints of incompetence (unclearness, obscurity, and incompleteness) of legislation. It is difficult to argue that the process of change and the formulation of various legislation relating to national security was not done in a comprehensive and integrative national security perspective. For

---

<sup>57</sup> Bambang Waluyo, *Penelitian Hukum Dalam Praktek*, Sinar Grafika, Jakarta, 2007. hal. 13

example, discussions on the State Defense Bill and the TNI Bill do not fully align with the Bill on Polri. Although it is intended to be a law covering defense issues in a broad sense, Law no. 3 of 2002 on State Defense also still emphasizes the regulation of TNI positions in the national defense system.

Third, TNI roles, functions and tasks must also be placed in the perspective of the threat character facing Indonesia as a post-colonial State that is in the process of nation building. Unlike the politically and economically established democracies, Indonesia could not simply put the role of the TNI only as an external defense instrument. For Indonesia, internal threats must be prioritized as important as transboundary threats and possible external threats. In fact, in some contexts, internal threats (such as insurgency, separations, communal and ethnic violence and terrorism) require more priority for handling by responsible actors in the national security field.

Therefore, especially because of the context of political cohesion and the nature of the threats that distinguish the developing post-colonial Country such as Indonesia and the developed countries.<sup>5</sup> It is not easy to assert that the role of the TNI in the national security system is only as an external defense instrument. This realistic condition underlies the various provisions in the regulation on the role of the TNI post-reformasi. These legislation products have at least laid the foundation for a transformation of the role of TNI in accordance with democratic political life, that is, professional TNI that only plays a role in defense, non-politics and business, and is subject to the supremacy of civil government. This is for example seen from the restriction on the role of the TNI is only a tool of state defense. This restriction is confirmed in Law no. 3 of 2002 (in Article 10) and later in Law no. 34 of 2004 (article 5) which asserts that as an instrument the State of the TNI "performs its duties in accordance with the policies and decisions of the State".<sup>6</sup> As a consequence of its role, the TNI is banned from "practicing politics, not doing business, and following the political policies of the State that adheres to the principles of democracy, civil supremacy, human rights, the provisions of national law and ratified international law".<sup>7</sup>

In carrying out its role as a defense tool TNI performs its functions as an antidote and action against existing threats, as well as a restoring function. Unlike the regulation that was born before the reform, the TNI's function of counteracting and prosecuting is now limited only to "any form of military threat and armed threat from outside and within the country to the sovereignty, territorial integrity and national security."<sup>8</sup> Meanwhile, in order to "live the form and nature of non-military threats outside the authority of the defense agencies, the mitigation is coordinated by agency heads according to their fields."<sup>9</sup> Unlike in the past, the TNI now serves only as one part of the entire national security system, but remains a core force in the national defense system.

The tasks mandated to TNI contained in the regulation of the product of the reform period are also more detailed and concrete. UU no. 34 of 2004 detailing the main tasks of the TNI covering the task of "upholding the sovereignty of the State, maintaining the territorial integrity of the Unitary State of the Republic of Indonesia based on Pancasila and the 1945 Constitution, and protecting the entire nation and the whole of Indonesia from the threat and disruption of the integrity of the nation and Country."<sup>10</sup> The implementation of the three main tasks, in addition to military operations for war, was also carried out through military operations other than war (CMSP) broken down into 14 task types. The 14 types of tasks are<sup>11</sup>

1. Addressing armed separatist movements;
2. Overcoming armed insurrection;
3. Overcoming acts of terrorism;
4. Securing border areas;
5. Securing national strategic objects of a strategic nature;
6. Carry out the task of world peace in accordance with foreign policy.

---

<sup>5</sup> Lihat, Edward E, Azar and Chung-In Moon, "Rethinking Third World National Security", dalam Edward E, Azar and Chung-In Moon, editor, *National Security in the Third World : The Management of Internal and External Threats* (Hants, UK : Edward Elgar, 1988, hal 6-7).

<sup>6</sup> Pasal 5, UU No. 34 Tahun 2004

<sup>7</sup> Pasal 2 (d), UU No. 34 Tahun 2004

<sup>8</sup> Pasal 6 ayat (1a), UU No. 34 Tahun 2004

<sup>9</sup> Pasal 19, UU No. 3 Tahun 2002

<sup>10</sup> Pasal 7 ayat (1) UU No. 34 Tahun 2004

<sup>11</sup> Pasal 7 ayat (2) UU No. 34 Tahun 2004

7. Securing the President and Vice President and his family.
8. Empower the region of defense and its supporting forces early in accordance with the defense system of the universe.
9. Assisting governmental duties in the regions.
10. Assisting the Police of the Republic of Indonesia in the framework of the security and public order stipulated in the law.
11. Assist in securing State guests at the Head of State and representatives of foreign governments residing in Indonesia.
12. Helping to cope with the natural disasters of refugees and the provision of humanitarian assistance.
13. Assist search and rescue; and
14. Assist the government in securing shipping and aviation against piracy and smuggling piracy.

In the two regulations on the implementation of state defense in the technical-operational order, both Law no. 3 of 2002 and Law no. 34 In 2004, the central role was in the hands of the TNI Commander. In carrying out its role as executor of State defense policy,<sup>12</sup> The TNI Commander is authorized to use the power of the TNI with an obligation to account for its use to the President.<sup>13</sup> This provision clearly implies that the TNI Commander, for any reason can not use the power of the TNI based on his own considerations, without any prior political decision of the President.

In addition to the authority to use TNI force for military and non-war military operations. The commander also served to "develop the TNI doctrine,"<sup>14</sup> and "organizing TNI strengthening and maintaining operational readiness."<sup>15</sup> The commander is also obliged to "give consideration to the Minister of Defense in the determination of the TNI's fulfillment policy"<sup>16</sup> and "in drafting and executing strategic planning for the management of the nasoinal resources for the sake of the State's defense."<sup>17</sup> In carrying out his duties, the Commander was assisted by the Chief of Staff of the Force whose duties and responsibilities are more on the aspect of fostering the strength and operational readiness of the "<sup>18</sup> and "domiciled under the Commander and responsible to the Commander."<sup>19</sup>

TNI reform also requires that TNI soldiers be treated equally before the law and obey the rule of law. However, the change in the position of the TNI in the face of the new law is limited in the form of a principle provision stating that "soldiers are subject to the power of military justice in the case of violations of military criminal law and are subject to the rule of the general justice in the case of violations of general criminal law regulated by law,"<sup>20</sup> However, the new provisions may be expressed in effect only after "the law of the new provisions may be declared effective only after" the law on the newly enacted Military Courts. "<sup>21</sup> As long as the new Military Justice law has not yet been established, the soldiers "remain subject to the provisions of Law Number 32 Year 1997 on Military Justice".<sup>22</sup> In other words, TNI soldiers who violate general criminal law are still being tried in military court because until now the new Military Justice Law has not yet been established.

In the field of personnel management, existing regulations can be said to include various regulations on the rights and obligations of TNI soldiers, ranging from recruitment, liability and prohibition, guidance, welfare, to the anniversary of termination of duties. Regulation on this matter does not cause much debate in parliament and society, since the terms of the existing provisions generally refer to the general provisions that have been in effect since the New Order government, and follow the prevailing prevalence in the military world.

---

<sup>12</sup> Pasal 15 ayat (2) UU No. 34 Tahun 2004

<sup>13</sup> Pasal 19 UU No. 34 Tahun 2004

<sup>14</sup> Pasal 17 ayat (1), UU No. 34 Tahun 2004

<sup>15</sup> Pasal 15 ayat (4), UU No. 34 Tahun 2004

<sup>16</sup> Pasal 15 ayat (6), UU No. 34 Tahun 2004

<sup>17</sup> Pasal 15 ayat (8), UU No. 34 Tahun 2004

<sup>18</sup> Pasal 15 ayat (9), UU No. 34 Tahun 2004

<sup>19</sup> Pasal 15, UU No. 34 Tahun 2004

<sup>20</sup> Pasal 66 ayat (2) UU No. 34 Tahun 2004

<sup>21</sup> Pasal 74, ayat (1) UU No. 34 Tahun 2004

<sup>22</sup> Pasal 74, ayat (2) UU No. 34 Tahun 2004

Also worth noting is Law no. 34 of 2004 also contains two important provisions which, if implemented, will contribute significantly to strengthening civilian supremacy and accelerating the professionalism of the army. These two provisions are the regulation on the modeling of territorial command and territorial business deployment. Firstly, regarding the deployment, it was mentioned that it is done by "paying attention and prioritizing security-prone areas of the border areas of conflict-prone and remote islands in accordance with geographical conditions and defense strategies." The provisions of this deployment are also limited by the need to "avoid the can be an opportunity for practical political interests and its deployment does not always follow the administrative structure of government."<sup>23</sup> Second, concerning the business of the military, it is stipulated that "within the period of 5 (five) years from the coming into force of this law, the Government shall take over all business activities owned and managed by the TNI either directly or indirectly."<sup>24</sup>

Overall, the new regulations governing the technical operational arrangements of state defense operations are beginning to reflect progress towards better. However, of the various provisions of the law, which remains an unresolved agenda are (a) the optimization of the performance of the main tasks, (b) the operationalization of some of the tasks outlined by the law, in particular the tasks of the CMSP, and (c) the execution of tasks that can be categorized as operationalization of the role of internal security, which in Indonesia is often termed "gray areas". In this regard, the implementation of TNI roles, functions and tasks as part of the national security system is still faced with three major issues, namely the capability gap, the operational gap, and the regulatory void.

### **3.2. Barriers and Challenges Facing the TNI Reform**

Despite the achievements of the idea of civil supremacy, there are still many problems such as: (1) the idea of civil supremacy in the TNI law is not as expected, for example, the authority of the President is limited by the use of force not in development, strength and formation of forces; (2) The TNI Commander under the President should be under the Minister of Defense; (3) The DPR is only authorized to assess aspects of morality and personality not including aspects of professional proficiency. This assessment is ambiguous because the DPR's decision should be based on an objective assessment of the candidate's professional skills proposed by the President; (4) the inconsistency of civilians in positioning the military role by withdrawing the military in political clarity.

The successful reform of the security sector, especially the reform of the TNI according to Hasan Habib, is the deployment of the TNI in the "new religion" of democracy, in this case a strong civilian control which can be seen in the strength of oversight and the planning and implementation of the law.

In the framework of sustainability of TNI reform can be drawn some challenges of TNI reform in the future:

- a. Viewed from civic engagement, security sector reforms have not yet touched on the substance of implementation in the field in discussing a policy, civil society organizations are involved from the beginning, but they leave behind in decision-making.
- b. The ability of the TNI to resist the temptation to enter politics. The main function of the TNI as contained in the 1945 Constitution and the Law on the TNI, is to defend the sovereignty of the State and protect the people from various threats. From these functions can be seen that the politics of the TNI is the politics of the State. An unhealthy system can cause the military not to be professional as it did when the New Order came to power.
- c. The addition of executives in carrying out their functions also needs to be questioned. Executives have been a factor inhibiting the reform of the TNI. For example, the lack of executive control over the military in the process of taking TNI busses up until now is still unclear. Another example is the involvement of the TNI Commander and Chief of Police, as well as the Head of BIN in cabinet meetings and executive politicization in the process of changing positions in the military.
- d. Fulfillment of the military budget by the State becomes one of the classic issues. The impact of the inability of the State leads to the professionalism of soldiers at stake, one of which is the TNI business. The lack of optimality of the State in allocating funds for the Arrangement

---

<sup>23</sup> Penjelasan Pasal 11 ayat (2) UU No. 34 Tahun 2004

<sup>24</sup> Pasal 76 ayat (1) UU No. 34 Tahun 2004

of TNI caused the TNI condition in a situation of concern so that the soldiers seek their own way out by doing business.

- e. How to synergize the main strengths and strengths of security tools in the face of future challenges of change and uncertainty. Legal signs are clearly needed to ensure those forces are functioning, while avoiding conflicts of interest.

#### **4. Closing**

##### **4.1. Conclusion**

1. The main role of the armed forces is as an instrument in carrying out external defense (external defense). The role is exercised either through war operations, as well as non-war (military operations other than war) whose scope of activities can be external (overseas, such as peacekeeping operations and rescue operations of threatened citizens abroad) or internally within the country (such as civic missions and humanitarian relief).
2. TNI roles, functions and tasks should also be placed in the perspective of the threat character facing Indonesia as a post-colonial State that is in the process of nation building. Unlike the politically and economically established democracies, Indonesia can not simply put the role of the TNI only as an external defense instrument.

#### **ACKNOWLEDGMENTS**

1. Mr. Zulkifli S Mukti, SH., M.H, as the Rector of University of Palembang.
2. Mr. H. Darmawan Mukti, SH., M. Hum, as Dean of the Faculty of Law University of Palembang.
3. Dr. Ali Dahwir, SH., M.H, as Vice Dean I as well as Friends Sejawat.
4. Ahmad Samudra, SH., M.H, as my husband in guiding and providing support directives to me.

#### **References**

- [1]. Artikel, *Optimalisasi Peran TNI Dalam Membangun Kehidupan Berbangsa dan Bernegara*.
- [2]. Malik Haramain, *Progresivitas TNI/POLRI*, Kompas 29 Agustus 2005.
- [3]. Bambang Waluyo, *Penelitian Hukum dan Praktek*, Sinar Grafika, Jakarta, 2007.
- [4]. Dikutip dalam Arif Yulianto, *Hubungan Sipil dan Militer Indonesia Pasca Orde Baru*, Jakarta, Raja Grafindo Persada, 2004.
- [5]. Eric Herda, *Menuju TNI yang Profesional*, Penerbit Iespersi, 2009.
- [6]. <http://www.antara.co.id/arc/2010/2/10.memperketat.alih.status.prajurit.TNI.jadi..PNS>
- [7]. <http://kontras.orang>.
- [8]. Jurnal, *Menuju TNI Profesional, Tidak Berbisnis dan Tidak Berpolitik, Perjalanan Advokasi RUU TNI, Instrumen Internasional Pokok Hak Asasi Manusia*, Tim Imparsial, 2005.
- [9]. -----, *Menuju TNI Profesional Tidak Berbisnis dan Tidak Berpolitik Bekerjasama dengan Kondisi Keselamatan Masyarakat Sipil dan Lembaga Studi Pus dan Pembangunan*, Jakarta, Bab II, 2011.
- [10]. Liputan G.Com. 18 Agustus 2009 *tentang Demonstrasi yang dilakukan oleh Aliansi Anti Militerisme, Demonstrasi Menentang Pembahasan RU TNI Jika Terjadi di Berbagai Daerah Jawa*.
- [11]. *Peran TNI dan Posisinya Dalam Kehidupan Bangsa Memasuki Millenium Ketiga* (Dikutip dari Kompas Edisi, Sabtu, 1 Januari 2011).
- [12]. S. Yunanto, *Evaluasi Kolektif Reformasi Sektor Keamanan di Indonesia TNI dan Polri*, et al The Ridep Institute, 2010.
- [13]. TAP MPR RI No. 6/2000 Tentang Pemisahan TNI dan POLRI, Serta TAP MPR RI No. 7/2000/Tentang Tugas dan Wewenang TNI dan POLRI.
- [14]. Undang-Undang No. 34 Tahun 2004 Tentang TNI

# Analysis of the Role of Financial Technology in Supporting the Financial Inclusion Program

**Fahrudin Salim**

Universitas Pancasila, Jakarta

Email: fahruddinsalim@univpancasila.ac.id, Contact Person: 082122390081

**Abstract.** The availability of banking services and payments to the entire population without discrimination is the main objective of the policy of financial inclusion. Many financial technology-based innovations are emerging in the future to improve financial inclusion. The purpose of this study is to encourage the level of achievement of financial inclusion programs through the most effective and transparent financial services. In this study discusses various financial technological innovations used to reach rural communities and conceptual models are developed to identify the factors that drive financial inclusion. The results of the study developed through literature research identified that the level of financial literacy, high cost, technology, trust, income level, distance, and product, is the determining factor of financial inclusion in rural areas.

**Keywords:** *Financial inclusion, financial technology, technology information*

## 1. Introduction

In the era of information technology, building a strong foundation and economic independence is essential, including the need for an increasingly widespread banking service in serving customers (customers). A strong financial system is essential to creating a market-based economy that is productive and competitive. A strong financial system, will also support higher levels of investment and boost growth in the economic sector.

The banking industry has shown remarkable growth and progress in the last few decades. Nevertheless, there are concerns that much-needed banking services have not yet reached a broad segment of society, especially the poorer segment of society.

The government has a long history of expanding financial inclusion. In 1975 the Government of Indonesia established a BPR for the same purpose. This encourages the expansion of banking roles especially in rural areas.

The Financial Services Authority (OJK) in the National Literacy and Financial Inclusion Survey (SNLIK) conducted in 2016 found that Indonesia's literacy index and financial inclusion increased, compared to similar results conducted by OJK in 2013.

In 2013, the financial literacy index reached 21.84 percent and the financial inclusion index reached 59.74 percent. While the financial literacy index in 2016 reached 29.66 percent and the financial inclusion index reached 67.82 percent.

In detail, the index of banking literacy increased from 21.80 percent in 2013 to 28.94 percent in 2016. Meanwhile, the index of insurance literacy fell from 17.84 percent in 2013 to 15.76 percent in 2016. The pension fund's literacy index rose from 7.13 percent in 2013 to 10.91 percent in 2016.

Meanwhile, the lending index of finance institutions rose from 9.80 percent in 2013 to 13.05 percent in 2016. The index of parix literacy rose from 14.85 percent in 2013 to 17.82 percent in 2016. Then the index of capital market literacy rose from 3, 79 percent in 2013 to 4.40 percent in 2016.

Financial inclusion is an important priority in terms of promoting economic growth and economic development of society. Through financial inclusion gives opportunity to the poor the opportunity to form savings and invest and get credit.

The weaker part of society is generally ignored by formal financial institutions. There is a complexity facing banks in providing financing to the disadvantaged parts of society. This has led to vulnerable and low-income groups, remaining outside the most basic opportunities and services provided by the financial sector.

To solve the problem of such financial exclusion, it is important to ensure that various financial services are available to each individual. If such a priority can be affordable, it is possible to reduce the gap between rich and poor.

## **2. Literature Review**

Financial inclusion is defined as the delivery of affordable, cheap, fair and secure financial services to most low-income groups in order to improve their welfare.

The United Nations defines the main objectives of inclusive financing as access to various financial services such as savings, credit, insurance, remittances, and other banking payment services to all households and companies in order to be bankable at a reasonable cost.

The availability of banking services and payments to the entire population without discrimination is the primary objective of this public policy. Thus, the essence of financial inclusion is ensuring that appropriate financial services are available to individuals and enable them to understand and access the services.

The term financial inclusion can be defined as a process to ensure access to financial and credit services is timely and sufficient when needed by weaker groups and low-income groups at an affordable cost.

Access to finance is a form of providing the ability for the underprivileged to contribute to development. There is a positive correlation between financial development and economic growth (King et al, 1993).

Mahadeva (2008) points out that financial inclusion, in any economy, is a prerequisite for achieving industry growth and overall development. While Chitta (2009) notes that financial inclusion offers additional and complementary solutions to poverty to promote inclusive development and to address the MDGs.

Financial inclusion is a long-term strategy, but to achieve its objectives, we need to understand what to pay attention to:

1. Provide access to basic financial services such as banking and others.
2. The use of financial services must meet the needs of the poor.
3. Financial products must be affordable.
4. The quality of products and services should be improved.

Given the progress that has been made to financial inclusion, more work needs to be done by banks and policy makers to constantly discuss the most effective strategies for developing financial inclusion.

Innovation in the field of banking business models and banking without branches is one of the important things in the direction of financial inclusion. To improve the inclusion of financial initiatives, a better business model that needs not only caters to current economic needs but also has to build the foundation for future financial inclusion plans. In this case, financial technology plays an important role in improving financial inclusion for the following reasons:

1. Help reduce product cost.
2. Reduce transaction costs.
3. Improve product quality.
4. Helps in increasing choice and flexibility to customers.
5. Expanding reach

All of the above reasons contribute to improving the usability of financial products through the utilization of information technology. Information technology plays an important role in improving the utilization of financial products.

Mobile technology and large-scale penetration are good examples. The first product popular around the world is M-Pesa. M-Pesa from Kenya has spread rapidly and has become one of the most successful mobile-based financial services.

M-pesa is a simple mobile banking application where customers can send money to individuals or can buy goods by transacting with M-Pesa applications. The product is easy to use and affordable for the locals and provides a selection of products that customers can choose from. Including ease of conversion money because of the number of M-Pesa outlets. One of the main reasons for M-Pesa's growth in Kenya is due to the growing growth of mobile communications in the late 2000s.

After the success of M-Pesa many countries adapted the idea of branchless banking. True to the present trend, the future of banking without branches looks bright. Many technological innovations will emerge in the future to improve financial inclusion.

After M-Pesa, many companies in Kenya are investing in branchless banking. Recently there is a new product launched that is similar to M-pesa like IKO-Pesa which is also known as orange money. Other countries have also developed mobile banking solutions, such as Easy Paisa in Pakistan, EKO in India and G-Cash in the Philippines.

Strong technological innovation in financial services needs to be supported by a strong business model. In the case of M-pesa is supported by a strong agent network that gives customers the convenience to get customer support, cash conversion, and better service quality. Also the support of safari.com the largest telecom operator in Kenya that gives them a better edge because of its huge customer base and highly reliable brand name.

## **2. Methodology**

The author uses descriptive research method, with the aim to obtain answers related to opinions, responses or perceptions of a person so that the discussion is done qualitatively. Research begins with literature study, as a method of data collection directed to search data and information through written documents, electronic documents and research literature.

The next method of data collection is through observation that is collecting data by way of observation about the existing situation in the field. By doing the observation, the author becomes more understanding about the subject and the object being studied. Interviews or interviews are needed to support data collection methods as a step to strengthen observations deeper. While data collection techniques that will be used is data collection by using books, literature or library materials to strengthen the theoretical foundation in research.

## **3. Results and Discussions**

Financial inclusion is an important element that makes growth including access to finance that enables economists to make long-term consumption and investment decisions, participate in productive activities, and address unexpected short-term financial problems.

Financial inclusion has a link between poverty and income inequality so it is important for policymakers to design and implement programs that will expand access to financial services, which can lead to reduced poverty and reduced income inequality.

There are several factors that influence the level of financial inclusion, including per capita income, regulatory legislation, and demographic characteristics, financial regulatory oversight. These factors contribute to poverty reduction and lower income inequality.

While the most significant factors affecting financial inclusion indicators are the importance of per capita income, rule of law, and demographic factors. The findings show clearly there is a strong and significant correlation between higher financial inclusion and lower poverty and income inequality.

First, the economic demographic characteristics significantly affect the level of financial inclusion. Economies with large population sizes tend to have greater access to financial services, while those with high dependency ratios have lower access to financial services.

Secondly, similar to the findings of Honohan (2008) and Rojas-Suarez (2010), good governance and high institutional quality significantly increased financial inclusion. This implies that to expand access to finance, it is necessary to continually improve the quality of governance and its institutions, in particular through strengthening of legislation, including the enforcement of financial contracts and financial regulatory oversight. Maintaining a quality legal rule.

Third, given the strong correlation between financial access and poverty levels, policy makers must implement policies that address barriers to financial inclusion. In this regard, promoting inclusive growth should complement efforts to increase financial inclusion.

The key step of this policy is to strengthen the role of microfinance. Expanding access to credit to low-income groups will increase their access to financial services, which in turn allows them to engage in productive activities and smooth their consumption in the face of short-term economic shocks.

To further reduce income inequality, more action is needed to address low financial access to low-income groups of financial services. In this context, programs that will help reduce poverty will also overcome income inequalities.

### **3.1. Digital framework**

An advanced information technology ecosystem will greatly assist the development of financial inclusion. This includes the community having knowledge of finance (financial literacy) and the use and utilization of technology. If someone does not know how to operate a mobile phone, of course, he is not interested to follow mobile banking.

The role of information technology in support of financial inclusion must be enforced with adequate regulation. Rules play a key role in ensuring appropriate services are provided to users. To that end, the regulator must:

1. The regulator should be open to experiment, learn and apply. They must work to improve public-private partnerships.
2. A mild requirement to facilitate customer registration.
3. Focus on security and customer protection.

Education about financial services is very important. The following suggestions should be implemented to improve financial inclusion:

1. The central bank should increase the number of branches of banks in remote areas.
2. The central bank should often check whether the financial product is actually utilized by the customer effectively, otherwise it should analyze the reason.
3. Banks should focus more on products that are simple, affordable, and must have high utility.
4. Banks should conduct regular surveys in villages to understand the financial needs of the community.
5. NGOs and non-profit organizations and other non-governmental organizations may engage more to spread financial services to remote areas that are difficult to access.
6. Banks shall allow customers to provide feedback on product services.
7. The central bank should allow providers to provide better mobile banking products at affordable prices.
8. Microfinance / non-banking organizations may be licensed to perform limited financial services in remote areas.
9. Encourage many intermediaries / agents with incentives to facilitate the popularization of financial products in remote areas.
10. Opening a bank account without minimum balance conditions should be allowed in all branches and places. Also simplify the procedure of opening a bank account.
11. Opening of bank branches in remote and rural areas should be liberalized by the Central Bank.
12. Telecommunications and bank service providers should jointly exercise and implement simple mobile banking solutions.
13. The central bank should enable entrepreneurs to invest in new product innovations in financial innovation.
14. Mobile Banking should be encouraged / incentivized as a smart way to send and save money in rural areas.

### **3.2. Conclusions and recommendations**

Technological innovation and communication technology support play an important role in supporting the development of financial technology necessary to strengthen the role of financial inclusion. Increased financial inclusion significantly has a significant correlation and influence on poverty alleviation and reduced income inequality. The results of this conclusion provide a framework for stakeholders to strengthen the role of financial inclusion in rural communities and low-income communities.

The suggestion of this research is the need for further research through field research with primary data collection to produce more in-depth quantitative research. While the framework in this study can be followed up through more in-depth field research.

## References

- [1]. Chitta, M. (2009). Financial Inclusion, poverty Reduction and the Millennium Development goals, *European Journal of Development Research*, 21(2), 213 - 230.
- [2]. Honohan, P. 2008. Cross-Country Variation in Household Access to Financial Services. *Journal of Banking and Finance* 32: pp. 2493–2500.
- [3]. King, R., & R. Levine (1993). Finance, entrepreneurship and growth: Theory and evidence. *Journal of Monetary Economics* 32:513-42.
- [4]. Mahadeva, M. (2008). Financial Growth in India: whither financial Inclusion? Margin - *The journal of Applied Economic Research*, 2(2), 177-197.
- [5]. Rojas-Suarez, L. 2010. *Access to Financial Services in Emerging Powers: Facts, Obstacles, and Policy Implications*. OECD Global Development Background Papers
- [6]. World Bank. 2014. *Global Financial Development Report 2014: Financial Inclusion*. Washington, DC.
- [7]. <https://ekbis.sindonews.com/read/1245411/178/literasi-keuangan-di-indonesia-tercatat-masih-rendah-1507115421>
- [8]. <https://blogs.wsj.com/indiarealtime/2010/09/06/india-journal-financial-inclusion-helps-more-than-the-poor/>.

# Determination of Coral Reef Ecotourism Area at Coastal Area of Ternate Island

Faizal Rumagia<sup>1\*</sup> and Bahar Kaidati<sup>1</sup>

<sup>1</sup> Department of Fisheries Empowerment, Faculty of Fisheries and Marine Science  
Khairun University

\* Correspondent author: faiz.spl14@gmail.com

**Abstract.** The coral reef ecosystem provide an ecological and economic value to human, but degraded by human activity that impact their existence. Lack of information and knowledge on reef condition and the importance of the existence of the ecosystem make it happen. This become complicated because the local government policy had provide an opportunities for development in the coastal and marine areas, without considering the existence and the use of the ecosystem, including on the coral reef ecosystem. The objective of the research was to determine the suitable area for coral reef ecotourism based on the land use criteria for the sustainable ecotourism development. All the data was analyse using the remote sensing and geographic information system (GIS) method, based on the characteristic of the ecotourism suitable area. The results shown that, the coastal area of Ternate Island can be develop as coral reef ecotourism area within categories in dive tourism, snorkelling tourism, and recreational tourism. The spatial analysis resulting that, the coastal area of Ternate Island with those three tourism category, was in suitable class (S1) and marginal suitable (S2) of land use for coral reef ecotourism.

**Keywords:** *Ecotourism, coral reef, Ternate Island*

## 1. Introduction

Coastal zones have been areas of focus for the development of a country in terms of economy and society mainly in terms of food, job prospects and recreation. However, owing to poor or unplanned development together with a growing population, coastal zones around the world have been degraded which has been amplified by the effect of climate change (Beeharry *et al.* 2014).

The observation of the condition of 583 coral reef site in Indonesia resulting that it have 590 species of coral reefs that spread almost around the country, within category condition were 6.83% very good, 25.72% good, 36.87% moderate, and 30.58% bad (Suharsono 2003). The data shown that the coral reefs in Indonesia was in the critical condition and it can minimize the ecosystem function and services that will effect on resources degradation and the sustainable development of coral reef resource.

The coral reef ecosystem provide an ecological and economic value to human, but degraded by human activity that impact their existence. Lack of information and knowledge on reef condition and the importance of the existence of the ecosystem make it happen. This become complicated because the local government policy had provide an opportunities for development in the coastal and marine areas, without considering the existence and the use of the ecosystem, including on the coral reef ecosystem.

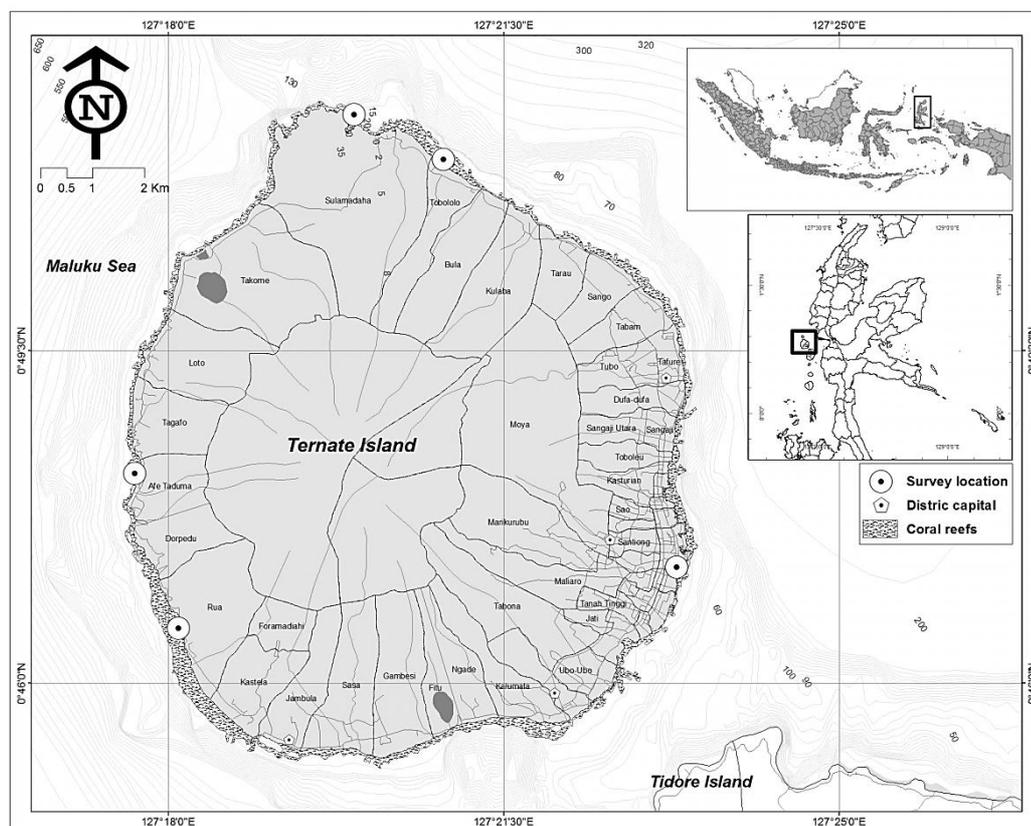
Ecotourism is a form of tourism that manage with conservation approaches. Thus, ecotourism is precise and efficient in preserving the integrity and authenticity of ecosystem in natural area. In the ecotourism management it is use conservation and utilization approach. The approach mostly impose on conservation rather than utilize, and related to the community. Involving of local community will help keep the integrity of the ecotourism area and preserve the local culture also lent itself to position the community as part of the manager with other stakeholder (Nurfatriani and Evida 2003).

Ternate Island as one of the tourism destination on eastern Indonesia, have a large coral reef surrounding the island that can provide ecotourism activity, but as the increasing of development and the large human activity in this island, had impact the coral reef ecosystem in the region. By seeing the

mean and strategic value of the existing of Ternate island as the gate of tourism in North Maluku Province, it need management and development concept that can provide added value to the existing resources based on scientific information, so the economic and ecological value can be achieved with the attention on the rules of sustainable resource management. While, more and more use of remote sensing sensor this day, the mapping of coral reef can be done using the remote sensing data to support the information about coral reef ecotourism suitable on Ternate island coastal zone. The objective of the research was to determinate the suitable area for the development of coral reef ecotourism at the coastal area of Ternate island for sustainable ecotourism development in this region using GIS.

## 2. Methodology

The research was conduct at coastal area of Ternate island North Maluku Province with five sample site (Figure 1) from March to July 2015. Data used in this research consist of primary and secondary data, where the primary data was taken directly from the research area through survey and observation, while the secondary data was the Landsat-8 OLI (Operational Land Imager) satellite image downloaded from USGS Earth Resources Observation and Science data centre (<http://glovis.usgs.gov/>).



**Figure 1.** Research location map

The utility of the land use for coastal ecotourism was analysis on three stage: stage one, the composing of suitability matrix on each of the coastal ecotourism (parameterization, weighting and scoring); stage two, the suitability index analysis on each coastal ecotourism; and stage three, the overlay operation for the mapping process.

The determination on the suitability for coastal ecotourism activity based on two parameter, which is the parameters that related with the main object in coastal tourism and the environment factors that related with conservation of the tourism and the tourism pleasure (Davis and Tisdell 1995). The determination of the parameters, weighting and scoring was based on the empiric study (scientific judgement) and expert judgements that competent with coastal ecotourism (include dive master). The value of the parameter weight is based on the consideration of (Yaakup *et al.* 2006; Vinh

*et al.* 2008): (1) the main activity parameter of ecotourism that have dominant impact and relative can't be change, with highest weight factor (weight as 3); (2) the supporting parameter that have the same relative impact with other parameter with the same weight factor (weight as 2); and (3) the supporting parameter that have less dominant with smallest weight (weight as 1). There is three suitable class, where scoring form the highest (score by 5) for suitable/very suitable parameter (S1 class), score by 3 for marginal suitable (S2 class), and the lowest (score by 1) for not-suitable category (S3 class), with 2 interval per category (adapted from Bengen and Retraubun 2006). All the suitable matrix for the coral reef ecotourism for each ecotourism category are shown in Table 1, 2 and 3.

The suitable use index for coastal ecotourism was modified from the Index Overlay Model-IOM (Bonham and Carter 1994; Vinh *et al.* 2008), using formula:

$$MEI = \frac{\sum_{j=1}^n (B_j S_j)}{N_{max}} \times 100\%$$

Where MEI is coastal ecotourism suitable index for *i*-category (where *i* = 3 category), B is weight of *j*-parameter, S is score of each *j*-parameter, and  $N_{max}$  is maximum value from the multiplication of score and weight per coastal ecotourism category.

The area suitable class was divided by the range of suitable index value. The index value on each suitable class (interval, I) define by mean from difference of highest index value and lowest index value (range, R) and divide by amount of the suitable classes (K) or can be formulated as  $I = R/K$ . The grouping of the suitable class value for area suitability for each coral reef ecotourism activity based on the rule of:

S1 = Suitable/Very Suitable, with value of 77.14 – 100%

S2 = Marginal suitable, with value of 23.32 – < 77.14%

S3 = Not-suitable, with value of 0 – < 23.32%

**Table 1.** Ecotourism suitable matrix for dive category.

No.	Parameters	Weight	S1 Class	Score	S2 Class	Score	S3 Class	Score	Source
1.	Life coral coverage (%), and the present of the historical relief in the sea	3	75-100	5	50 - <75	3	< 50	1	a, b, e, f
2.	Number of corals genus	3	> 12	5	7 – 12	3	< 7	1	a, b, e
3.	Number of coral fish genus	2	> 50	5	26 – 50	3	< 26	1	a, b, e, f
4.	Brightness of the waters (%)	2	> 80	5	50 – 80	3	<50	1	a, b
5.	Current velocity (m/sec)	2	< 0.1	5	>0.1 – 0.5	3	> 0,5	1	c
6.	Coral depth (m)	1	5 – 15	5	> 15 – 30 & 3 – < 5	3	< 3 & > 30	1	c, d

**Maximum Value (weight x score) = 65**

Sources: a = Davis and Tisdell 1995; b = Davis and Tisdell 1996; c = Hutabarat *et al.* 2009  
d = Supriharyono 2007; e = Barnes and Hughes 2004; f = deVantier &Turak 2004

**Table 2.** Ecotourism suitable matrix for snorkelling category.

No.	Parameters	Weight	S1 Class	Score	S2 Class	Score	S3 Class	Score	Source
1.	Life coral coverage (%)	3	> 67	5	34 – 67	3	< 34	1	a, b, c, d, e
2.	Number of corals genus	3	> 10	5	6 – 10	3	< 6	1	a, d
3.	Brightness of the waters (%)	2	> 80	5	50 – 80	3	< 50	1	a, b, d, e
4.	Number of coral fish genus	2	> 50	5	26 – 50	3	< 26	1	a, d, e
5.	Current velocity (cm/sec)	2	< 0.1	5	> 0.1 – 0.5	3	> 0.5	1	b, c, d, e
6.	Coral depth (m)	1	1 – 3	5	> 3 – 5	3	> 5 & < 1	1	b, c, d
7.	Coral flatten area (m)	1	> 100	5	20-100	3	< 20	1	b, e

**Maximum Value (weight x score) = 70**

Sources: a = Davis and Tisdell 1995; b = Hutabarat et al. 2009 c = Supriharyono 2007; d = Barnes and Hughes 2004; e = Marine National Park Division 2001

**Table 3.** Ecotourism suitable matrix for recreational category.

No	Parameters	Weight	S1 Class	Score	S2 Class	Score	S3 Class	Score	Source
1.	Coastal type	3	More slight	5	Little sheer	3	Bold coast	1	a, c, d
2.	Coastal width (m)	3	> 5	5	3 – 5	3	< 3	1	a, c
3.	Bathymetry (m)	3	0-2	5	> 2 – 5	3	> 5	1	a, c
4.	Waters substrate	2	Sand	5	Coarse	3	Corals	1	a, c, d
5.	Current velocity (m/sec)	2	< 0.34	5	0.34- 0.51	3	> 0,51	1	a, c
6	Coastal slope (°)	2	< 25	5	> 25 - 45	3	> 45	1	a, c
7	Brightness of the waters (%)	1	> 50	5	30-50	3	< 30	1	a, c, d
8.	Coastal land cover	1	Coconut , open space	5	Thicket	3	forest, used area	1	a, c
9	Dangerous species	1	None	5	Sea urchin	3	Sea urchin, manta ray, lion fish, shark, etc.	1	a, c, d
10	Fresh water existence (distance in km)	1	< 1	5	1-2	3	> 2	1	a, b, c

**Maximum Value (weight x score) = 95**

Sources: a = Wong 1991; b = Supriharyono 2007; c = Hutabarat et al. 2009; d = Daby 2003

### 3. Result and Discussion

#### 3.1. Coral reef and coral fish condition

The survey on coral reef and fish condition at coastal area of Ternate island, it known that the coral reef was in good condition, unfortunately several palaces of the area have been degrade. The cause of the degradation come from several man activity. This have effect the condition of the coral reef and the organism within the reef. By using the valuation of the percentage of coral coverage and the morphology of the coral life form, the coral reef at the coastal area of Ternate island was dominated by the hard coral (Figure 2) with 64.24% coverage in average, and 9.83% of soft coral coverage. The life form of the coral reef that mostly found in this coast is *Acropora Branching* (ACB), *Acropora Digitate* (ACD), *Acropora Submassive* (ACS), *Acropora Tabulate* (ACT), *Coral Massive* (CM), *Coral Encrusting* (CE), *Coral Foliose* (CF) and several *Coral Mushroom* (CMR) (Table 4).

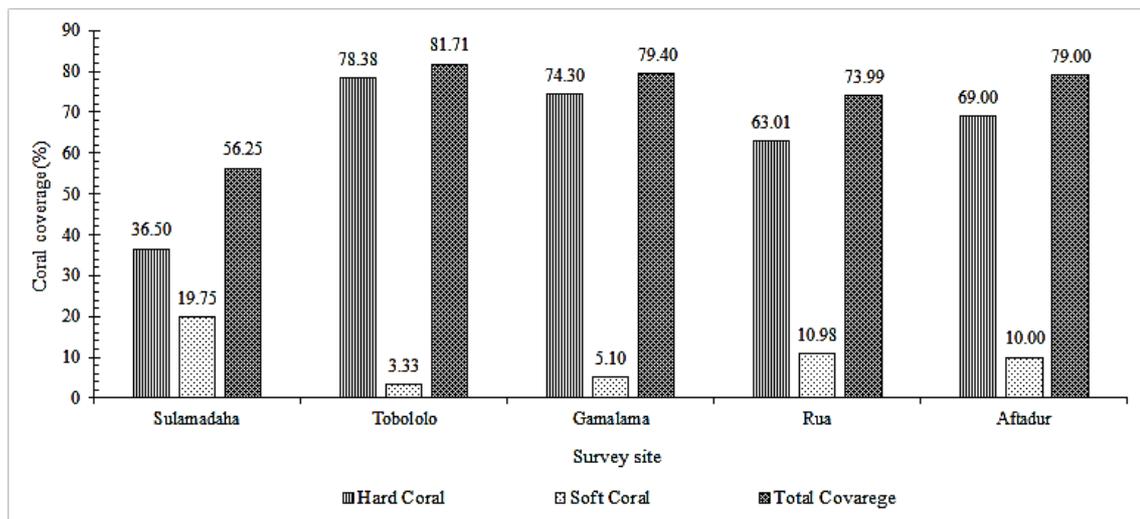


Figure 2. Percentage of coral coverage at each survey site.

Table 4. The life form of the coral reef founded at the coastal area of Ternate island.

Suevey site	Acropora				Non-Acropora				Soft corals (SC)
	Branc h-ing (ACB)	Digita te (ACD)	Sub-massi ve (ACS)	Tabu-lar (ACT)	Encrusti ngg (CE)	Folio se (CF)	Massi ve (CM)	Mushro om (CMR)	
Sulamada ha	+	+	+	+	+	+	-	-	+
Tobololo	+	-	+	+	+	+	+	-	+
Galamama	+	-	+	+	+	+	+	+	+
Rua	+	+	+	+	+	+	+	-	+
Aftadur	+	+	+	+	+	-	+	-	+

(+) : founded, (-) : not founded

The coral fish that found in the coral reef at Ternate island coast, is commonly come from the family of Chaetodontidae (16 species) and Pomacentridae (12 species). Some family also found, such as Lutjanidae (8 species), Achanturidae (6 species), Labridae (3 species), while several families, like the family of Carangidae, Haemmulidae, Ostraciidae, Pomacanthidae, Scaridae, and Siganidae have only two species founded. Meanwhile, the less family of coral fish that found in the coral reef area at the coast of Ternate island are come from the family of Diodontidae, Monacanthidae, Mullidae, Pempheridae, Scorpaenidae, Seranidae, Synodontidae, and Zanclidae that only one species was found for each of the family (Table 5). Not all of the species of the coral fish are found on every survey site

(Table 6). This may cause by the coral reef condition and the composition of the coral coverage at every site.

**Table 5.** Coral reef fish composition founded at the coastal area of Ternate island.

<i>Family</i>	<i>Species</i>
Achanturidae	<i>Acanthurus nigricans</i> <i>Zebrasoma scopas</i> <i>Naso annulatus</i> <i>Naso lopezi</i> <i>Naso thynnoides</i> <i>Paracanthurus hepatus</i>
Carangidae	<i>Caranx melampygus</i> <i>Caranx sem</i>
Chaetodontidae	<i>Chaetodon guentheri</i> <i>Chaetodon speculum</i> <i>Chaetodon trifascialis</i> <i>Chaetodon mertensii</i> <i>Chaetodon pelewensis</i> <i>Chaetodon oxycephalus</i> <i>Chaetodon ocellicaudus</i> <i>Chaetodon rafflesi</i> <i>Chaetodon auriga</i> <i>Chaetodon meyeri</i> <i>Chaetodon baronessa</i> <i>Chaetodon trifasciatus</i> <i>Chaetodon kleinii</i> <i>Chaetodon ephippium</i> <i>Chaetodon ornatissimus</i> <i>Heniochus chrysostomus</i>
Diodontidae	<i>Cylichthys orbicularis</i>
Haemmulidae	<i>Plectorhinchus lineatus</i> <i>Plectorhinchus orientalis</i>
Labridae	<i>Thalassoma lunare</i> <i>Labroides dimidiatus</i> <i>Coris batuensis</i>
Lutjanidae	<i>Aprion virescens</i> <i>Lutjanus gibbus</i> <i>Lutjanus fulvus</i> <i>Pristipomoides filamentosus</i> <i>Pinjalo pinjalo</i> <i>Pterocaesio sordidus</i> <i>Paracaesio xanthurus</i> <i>Macolor niger</i>
Monacanthidae	<i>Paraluteres prionurus</i>
Mullidae	<i>Parupeneus barberinus</i>
Ostraciidae	<i>Ostracion meleagris</i> <i>Arothron nigropunctatus</i>
Pempheridae	<i>Pempheris adusta</i>
Pomacanthidae	<i>Pomacanthus xanthometopon</i> <i>Pygoplites diacanthus</i>
Pomacentridae	<i>Amphiprion clarki</i> <i>Amblygliphidodon curacao</i>

	<i>Cheiloprion labiatus</i>
	<i>Chromis weberi</i>
	<i>Chromis viridis</i>
	<i>Dascyllus reticulatus</i>
	<i>Pomacentrus coelestis</i>
	<i>Neoglyphidodon melas</i>
	<i>Premnas biaculeatus</i>
	<i>Amphiprion perideraion</i>
	<i>Amphiprion ocellaris</i>
	<i>Dascyllus melanurus</i>
Scaridae	<i>Scarus flavipectoralis</i>
	<i>Chlorurus bleekeri</i>
Scorpaenidae	<i>Pterois volitans</i>
Seranidae	<i>Cephalopholis miniata</i>
Siganidae	<i>Siganus canaliculatus</i>
	<i>Siganus vulpinus</i>
Synodontidae	<i>Synodus variegatus</i>
Zanclidae	<i>Zanclus cornutus</i>

The sampling was made using the visual census during the research time. The species conduct of diurnal and nocturnal species of reef fishes. The depth sampling range from 2 – 12 m depth in the water column.

**Table 6.** The present of coral reef fish according to the survey site.

Family	Species	Survey Site				
		Sulamadaha	Tobololo	Gamalama	Rua	Aftadur
Achanturidae	<i>Acanthurus nigricans</i>	+	+	+	+	+
	<i>Zebrasoma scopas</i>	+	+	+	+	+
	<i>Naso annulatus</i>	-	+	+	-	-
	<i>Naso lopezi</i>	+	+	+	+	+
	<i>Naso thynnoides</i>	+	+	-	+	+
	<i>Paracanthurus hepatus</i>	+	+	-	+	+
Carangidae	<i>Caranx melampygus</i>	+	+	+	+	+
	<i>Caranx sem</i>	+	+	-	+	+
Chaetodontidae	<i>Chaetodon guentheri</i>	+	+	-	+	+
	<i>Chaetodon speculum</i>	+	+	-	+	+
	<i>Chaetodon trifascialis</i>	-	+	-	-	-
	<i>Chaetodon mertensii</i>	-	+	-	-	-
	<i>Chaetodon pelewensis</i>	-	+	-	-	-
	<i>Chaetodon oxycephalus</i>	+	+	+	+	+
	<i>Chaetodon ocellicaudus</i>	+	+	-	+	+
	<i>Chaetodon rafflesi</i>	+	+	-	+	+
	<i>Chaetodon auriga</i>	+	+	-	+	+
	<i>Chaetodon meyeri</i>	-	+	-	-	-
	<i>Chaetodon baronessa</i>	+	+	+	+	+
	<i>Chaetodon trifasciatus</i>	+	+	-	+	+
	<i>Chaetodon kleinii</i>	+	+	-	+	+
	<i>Chaetodon ephippium</i>	-	+	-	-	-
	<i>Chaetodon ornatissimus</i>	-	+	-	-	-
	<i>Heniochus chrysostomus</i>	+	+	+	+	+
Diodontidae	<i>Cylichthys orbicularis</i>	+	+	+	+	+
Haemmulidae	<i>Plectorhinchus lineatus</i>	+	+	+	+	+

	<i>Plectorhinchus orientalis</i>	-	+	-	-	-
Labridae	<i>Thalassoma lunare</i>	+	+	-	+	+
	<i>Labroides dimidiatus</i>	+	+	-	+	+
	<i>Coris batuensis</i>	-	+	+	-	-
Lutjanidae	<i>Aprion virescens</i>	-	+	-	-	-
	<i>Lutjanus gibbus</i>	-	+	+	-	-
	<i>Lutjanus fulvus</i>	-	+	+	-	-
	<i>Pristipomoides filamentosus</i>	-	+	+	-	-
	<i>Pinjalo pinjalo</i>	-	+	+	-	-
	<i>Pterocaesio sordidus</i>	+	+	+	+	+
	<i>Paracaesio xanthurus</i>	+	+	+	+	+
	<i>Macolor niger</i>	-	+	+	-	-
Monacanthidae	<i>Paraluteres prionurus</i>	+	+	+	+	+
Mullidae	<i>Parupeneus barberinus</i>	-	+	+	-	-
Ostraciidae	<i>Ostracion meleagris</i>	+	+	+	+	+
	<i>Arothron nigropunctatus</i>	+	+	+	+	+
Pempheridae	<i>Pempheris adusta</i>	-	+	+	-	-
Pomacanthidae	<i>Pomacanthus xanthometopon</i>	+	+	-	+	+
	<i>Pygoplites diacanthus</i>	+	+	+	+	+
Pomacentridae	<i>Amphiprion clarki</i>	+	+	+	+	+
	<i>Amblyglyphidodon curacao</i>	-	+	-	-	-
	<i>Cheiloprion labiatus</i>	-	+	-	-	-
	<i>Chromis weberi</i>	-	+	-	-	-
	<i>Chromis viridis</i>	-	+	+	-	-
	<i>Dascyllus reticulatus</i>	-	+	+	-	-
	<i>Pomacentrus coelestis</i>	+	+	+	-	-
	<i>Neoglyphidodon melas</i>	-	+	+	-	-
	<i>Premnas biaculeatus</i>	+	+	+	+	+
	<i>Amphiprion perideraion</i>	+	+	-	+	+
	<i>Amphiprion ocellaris</i>	+	+	+	+	+
	<i>Dascyllus melanurus</i>	+	+	+	+	+
Scaridae	<i>Scarus flavipectoralis</i>	+	+	+	+	+
	<i>Chlorurus bleekeri</i>	+	+	+	+	+
Scorpaenidae	<i>Pterois volitans</i>	+	+	+	+	+
Seranidae	<i>Cephalopholis miniata</i>	-	+	+	+	-
Siganidae	<i>Siganus canaliculatus</i>	+	+	+	+	+
	<i>Siganus vulpinus</i>	+	+	+	+	+
Synodontidae	<i>Synodus variegatus</i>	+	+	+	+	+
Zanclidae	<i>Zanclus cornutus</i>	+	+	+	+	+

(+) : present, (-) : not present

### 3.2. Suitable land use for diving ecotourism

The coral reef community and other attractive object can be used as marine ecotourism attraction in diving tourism category. Most of the coral reef tourism object appear on the depth below 20 meter (Supriharyono 2007). According to Romimohtarto and Juwana (2001), the coral reef can be life until 40-60 m depth beneath the sea surface, mostly depend on the brightness of the water. Beside those two parameter, the research about suitable area for diving site in ecotourism must consider on percent of coral cover, amount of coral genus, numbers of fish genus and also the current velocity.

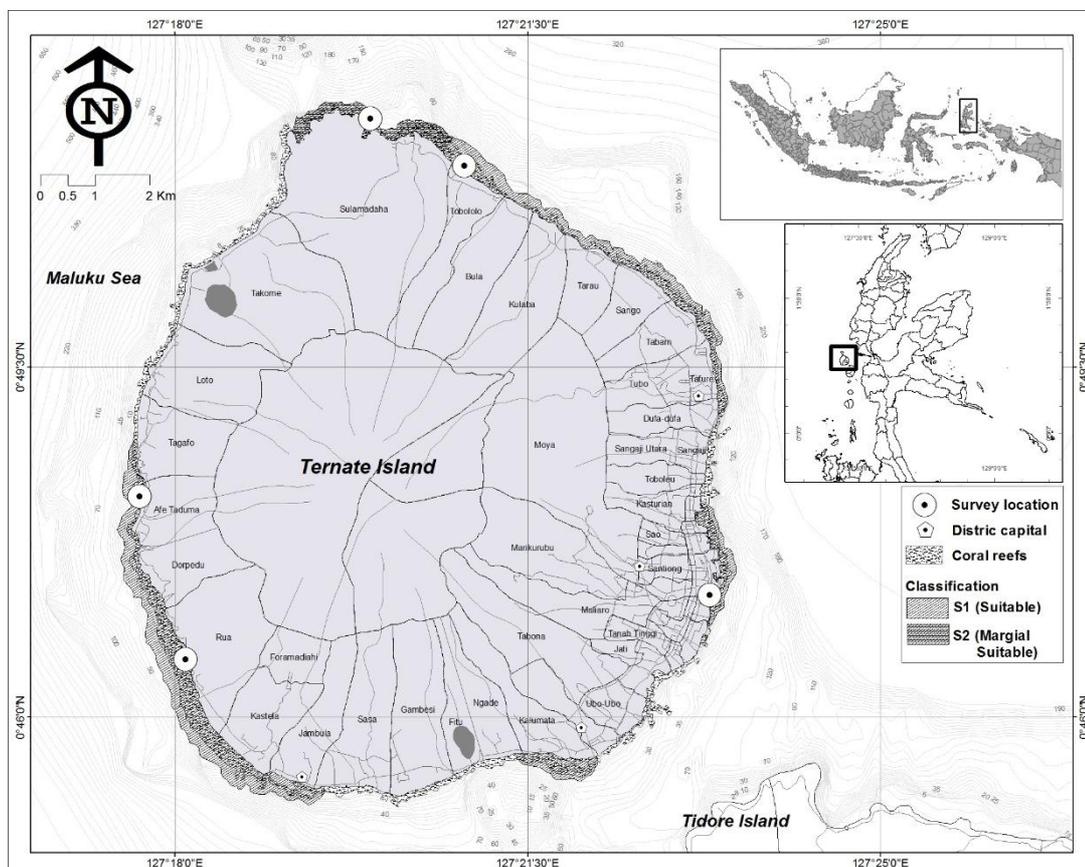
The spatial analysis result that support by the survey data show that the coastal area of Ternate island have two class of suitable land use (S1 and S2) for diving ecotourism category, with coverage

area is 4.070 ha (40,7 km<sup>2</sup>) for S1 area and 800 ha (8 km<sup>2</sup>) for S2 area. The analysis result of this category are show in Table 7 and Figure 3.

**Tabel 7.** Spatial analysis result for coral reef ecotourism for diving category at the coastal area of Ternate island.

Survey site	Ecotourism Suitable Value	
	Index (%)	Suitable Class
Sulamadaha	69.23	S2 (marginal suitable)
Tobololo	78.46	S1 (suitable)
Gamalama	75.38	S2 (marginal suitable)
Rua	66.15	S2 (marginal suitable)
Aftadur	75.38	S2 (marginal suitable)

Source: Primary data analysis.



**Figure 2.** Suitable land use map for coral reef ecotourism in diving category at coastal area of Ternate Island.

### 3.3. Suitable land use for snorkelling ecotourism

The typical tourism object that utilize in snorkelling ecotourism activity is coral reef community and other attractive sea object that occur in less than 3 meter of water depth. The spatial analysis resulting that the coastal area of Ternate island have two class of suitable use (S1 and S2) on coral reef ecotourism, in the category of snorkelling ecotourism, with coverage area of 4.320 ha (43.2 km<sup>2</sup>) for S1 area, and 580 ha (5,8 km<sup>2</sup>) for S2 area. The analysis result of this category are show in Table 8 and Figure 4.

**Table 8.** Spatial analysis result for coral reef ecotourism for snorkelling category at the coastal area of Ternate island

Survey site	Ecotourism Suitable Value	
	Index (%)	Suitable Class
Sulamadaha	71.43	S2 (marginal suitable)
Tobololo	80.00	S1 (suitable)
Gamalama	77.14	S2 (marginal suitable)
Rua	77.14	S2 (marginal suitable)
Aftadur	77.14	S2 (marginal suitable)

Source: Primary data analysis

### 3.4. Suitable land use for recreational ecotourism

Coastal tourism commonly categorize as recreational tourism to enjoy several moments, such as landscape view (moment of sunset or sunrise), sunbathe, beach sport, birds watching, beach picnic, camp, swimming, snorkelling, fishing and yachting. Those activity mostly done at coastal area, tidal zone, coral reefs area, and sea side.

The result of spatial analysis to the suitable area for recreational ecotourism at coastal area of Ternate island show that the area have two suitable class (S1 and S2), with coverage area of 2.940 ha (29.4 km<sup>2</sup>) for S1 area, and 1.590 ha (15.9 km<sup>2</sup>) for S2 area. The analysis result for this category is show in Table 9 and Figure 5.

**Table 9.** Spatial analysis result for coral reef ecotourism for recreational category at the coastal area of Ternate island

Survey site	Ecotourism Suitable Value	
	Index (%)	Index (%)
Sulamadaha	87.37	S1 (suitable)
Tobololo	89.47	S1 (suitable)
Gamalama	76.84	S2 (marginal suitable)
Rua	87.37	S1 (suitable)
Aftadur	76.84	S2 (marginal suitable)

## 4. Conclusion

The coral reef around the coastal area of Ternate island have a potential to be developed as ecotourism area. With a proper development plan for coastal area management, which support by good spatial planning, the development of marine ecotourism, specially the coral reef ecotourism can be achieved in this region. The result of this research has shown that, the coastal area of Ternate island is suitable to be develop as an ecotourism site, where all the development aspect must be considerable well, specially the coral reef ecosystem.

## References

- [1]. Barnes R, and R. Huges. 2004. *An introduction to marine ecology* (eds). Blackwell Publishing.
- [2]. Beeharry Y., T. Makoondlall-Chadee, C. Bokhoree. 2014. Policy Analysis for Performance Assessment of Integrated Coastal Zone Management Initiatives for Coastal Sustainability. *APCBEE Procedia*, 9:30 – 35.
- [3]. Bengen DG, dan ASW. Retraubun. 2006. *Menguak realitas dan urgensi pengelolaan berbasis eko-sosio sistem pulau-pulau kecil*. Bogor: Pusat Pembelajaran dan Pengembangan Pesisir dan Laut (P4L).
- [4]. Bonham GF and Carter. 1994. *Geographic information system for geoscientist; modeling with GIS*. Ottawa Ontario Canada: Pergamon, 9: 267 – 313 p.
- [5]. Davis D, and C. Tisdell. 1995. Recreational scuba-diving and carrying capacity in marine protected areas. *Ocean and coastal Management*, 26 (1): 19-40, in. Tisdell C. Tourism

- economics, the environment and development: analysis and policy. Brisbane: Department of Economics University of Queensland.
- [6]. \_\_\_\_\_ 1996. Economic management of recreational scuba diving and the environment. *Journal of Environmental Management*, 48: 229-248, in. Tisdell C. Tourism economics, the environment and development: analysis and policy. Brisbane: Department of Economics University of Queensland.
- [7]. Daby D. 2003. Effects of seagrass bed removal for tourism purposes in a Mauritian Bay. *Environmental Pollution*, 125: 313–324.
- [8]. deVantier L, and E. Turak. 2004. *Managing marine tourism in Bunaken National Park and Adjacent Waters North Sulawesi Indonesia*. Jakarta: Technical Report, the Natural Resources Management (NRM III) Program's Protected Areas and Agriculture Team (PA & AT).
- [9]. Hutabarat A, F. Yulianda, A. Fahrudin, S. Harteti, dan Kusharjani. 2009. *Pengelolaan pesisir dan laut secara terpadu*. Bogor: Edisi I Pusdiklat Kehutanan, Deptan, SECEN-KOREA International Cooperation Agency.
- [10]. Marine National Park Division. 2001. *The handbook of Marine National Park tourism-ecotourism activity*. Thailand: The Royal Forest Department, The Ministry of Agriculture and Cooperatives.
- [11]. Nurfatriani F. dan YS. Eivida. 2003. Pengelolaan Ekowisata Berbasis Masyarakat Lokal (*Local Community Based Management Of Ecotourism*). *Buletin Penelitian dan Pengembangan Kehutanan (Forestry Research and Development Bulletin)*, Vol. 4 No. 1, Th. 2003.
- [12]. Romimohtarto K. dan S. Juwana. 2001. *Biologi Laut, Ilmu Pengetahuan tentang Biota Laut*. Djambatan. Jakarta. 540 hal.
- [13]. Suharsono. 2003. *Jenis-Jenis Terumbu Karang di Idonesia*. Pusat Penelitian Oseanografi – LIPI. Cormap Program. Jakarta.
- [14]. Supriharyono. 2007. Pengelolaan ekosistem terumbu karang. Jakarta: Djambatan.
- [15]. Vinh MK, R. Shrestha, and H. Berg. 2008. GIS-Aided marine conservation planning and management: A case study in Phuquoc Island, Vietnam. *International Symposium on Geoinformatics for Spatial Infrastructure Development in Earth and Allied Sciences 2008*.
- [16]. Wong PP. 1991. *Coastal tourism in Southeast Asia*. ICLARM, Education Series 13,40 p, Manila.
- [17]. Yaakup A, N. Che'Man, N. Hosni, HW. Haron, and S. Sulaiman. 2006. *A GIS Approach in evaluation of metropolitan green area: a case of Sungai Pulai Wetland*. Urban Forestry Conference: Managing Urban Green for Sustainable Cities Kuala Lumpur, 6-7 June, 2006.

# The Use of Word Card Media to Improve Early Reading Skill at Preschool

Farida Samad<sup>1</sup> and Vrieda Makingkung<sup>2</sup>

<sup>1,2</sup>Early Childhood Education Department, Faculty of Teacher Training and Education, Khairun University Kampus I Akehuda, Jl. Bandara Babullah Akehuda, Ternate, Maluku Utara, Indonesia  
Email: faridasamad81@gmail.com

**Abstract.** Reading is a complex process involving many different parts of the developing brain. Language acquisition, symbolic representation, and the ability to hear and discriminate between sounds are all developmental abilities that are acquired over time and cannot be forced or rushed.. The aim of research is to find out how far the word card media was effective to improve early reading skill of group B students at TK Kemala Bhayangkari Kota Ternate. This research applied classroom action research. It consisted of 20 students of first semester academic years 2017/2018. The quantitative data collected using rate of percentage and qualitative data collected using observation, interview technique and analyzed descriptively. From this research, it was concluded that the students reading skill was improved after the implementation of word cards media in class. It could be seen in average score for each test that showed improvement from 60% (12 students) to 80% (16 students) from 20 students. In addition, 8 students failed in the criteria of success in reading on their first evaluation, finally they success on their second evaluation. Therefore, it can be concluded that the implementation of word media can improve the young learners reading skill.

*Keynote: early reading skill, word card media*

## 1. Introduction

Reading is an important activity in every language. Reading is only incidentally visual; the reader then contributes more information by the print on the page (Brown 2001:299). In early reading activity, kindergarten students are not only reading the text, but also trying to be aware of words, to increase their intelligence as well as their vocabularies. Being able to apply the exact word to communicate what we mean benefit both speaker and listener or reader. At any time, they can expand the content on the word card to include part of the speech, synonym, antonym or other features.

Early childhood education is the basic education aimed to stimulus students from birth up to the age of six by providing education to help the growth and development of physical and spiritual so that students have readiness in entering further education held on formal, informal and informal. Kindergarten is an early childhood education institution on formal education that organizes education programs for students aged 4-6 years. Children are in the process of the growth period, namely the development of all aspects of the physical ability, cognitive, language, social and emotional growing rapidly. Moreover, the child is an individual who has a particular characteristic of every aspect of its development especially language skills. Based on observation conducted in TK Bhayangkari Kota Ternate, that in general, learning to read is done is to follow the orders of teacher a child with a task in a worksheet even by having children write and read the words on the board. Students at the group B had difficulties in early reading, because they are not familiar with certain words, less understanding of the meaning of words and also less interest to read. Moreover, the way of teachers in teaching seems monotonous and the learning process does not vary, less maximizes the use of learning media so that students quickly feel bored. In this case, their ability deal with early reading ability is still low. It can be seen in answering some related questions to the reading contain.

Other factors also are caused by the condition of classical learning model implemented in TK Bhayangkari. The concept of this model is that all children do the same learning activities at the same time during the day. These models seem less give the child the freedom to choose learning activities

for teachers a more active role in the classroom and the children follow the teacher commands. Lack of ability of teachers to take advantage of a child's learning media are also increasingly making the conditions for effective learning, fun, and exciting for young children did not go well. Availability of instructional media and tools of educational games is still very limited, especially for the media introduction of the concept of reading for early children.

In accordance with the problem above, the researcher will use word card media so that it can facilitate the purpose of understanding and remembering the information and messages contained in card and it also facilitate students who are learning to read the text. The card referred to a 10x15cm size card made of thick paper that has words and drawings that match the theme of teaching and learning such as fruits, animals, plants and many others designed by researchers to help students to practice early reading.

## **2. Research Methods**

The research design used classroom action research with Kemmis dan M.C Taggar (1988) model. Each cycle consists of four phases namely planning, action, observation, and reflection . This research was conducted at TK Kemala Bhayangkari Ternate academic year 2017/2018. The subjects were B2 class students in the first semester of academic year 2017/2018 with the number of 20 students, while the data were gathered from observation sheet, field notes, evaluation result test and interview. To analyze the data, the technique is a qualitative data analysis developed by Miles and Huberman (Corebima, 2010: 79) consisting of three stages performed sequentially those are: 1) data reduction, 2) presents data, 3) draw conclusions and verification. From the results of observation in learning activities on the assessment of child development, it can be formulated the percentage. The criterions of child development assessment in kindergarten are: BB (<50), MB (50 <75), BSH (75 <87.5), and (87.5 > 100)

## **3. Results and Discussion**

### **3.1 Results**

Classroom action research is conducted in 2 cycles. The results as follow:

#### **3.1.1. Research Cycle I**

##### **a. Planning**

It starts with daily activity plan (RPKH) that focuses on the reading activity used word card with a "read simple-sized drawing". The theme is "My Clothing". Meanwhile, the learning objectives are the students are expected to read the words that exist in the card. Teacher prepares the observation sheet and evaluation sheets. Then the researcher prepares word cards that will be used for the learning process. It also prepares the tools to be used during the assignment activities of student's worksheets and crayons.

##### **b. Action**

In the learning is done in 3 meetings. The activities are opening of the class by greetings, praying and make sure the readiness of the students and continued singing together. Then the researcher conveys the theme and objective learning by giving question and answer about clothes, and also to motivate the students to read the word card well and understand letter by letter. The objective of learning is that the students are expected to be able to read the word card deal with clothes, shoes, ties and hats. The researcher asks the students to read the word and mentions letter by letter together. Then the researchers do an evaluation by calling them one by one to read the word card. To strengthen the evaluation results, the researcher also assigned the assignment of connecting picture and words. After the learning activities have been completed the researchers do question and answer about the learning activities that have been done and followed by reading and closing the meeting by giving feedback and prayer.

##### **c. Observation**

Observations conducted by involving peers and observation sheet. The observations include learning activity, pay attention to teacher; early reading skill, and completing the task given.

**Table 1.** Student Observation Results Cycle I

<b>Assessment Criteria</b>	<b>Number of Students</b>	<b>Observer I</b>	<b>Number of Students</b>	<b>Observer II</b>
BSB	5	25%	5	25%
BSH	5	25%	5	25%
MB	6	30%	6	30%
BB	4	20%	4	20%

Based on the table above, it can be seen that the readiness of students in learning is still lacking, there are some students who are still late, a little disruption in the learning process. Students are able to recognize card well and there is an improvement in recognizing every letters. They do not understand the material given, because they are less attention to teachers and still less interest to read. Moreover, there are still some students cannot complete the task well. Meanwhile, based on the teacher observation sheet in cycle I categorized good (85.7%). Things need to be improved are: teachers are still lacking to create a fun learning atmosphere and the teacher has not concluded the activities of each meeting.

*d. Reflection*

The reflection is done to determine the results in cycle I. It found that 8 students namely AR, NR, AQ, NB, IN, TR, IQ, NL who still have not success in developing their early reading skill because their understanding in the introduction of letters is still lacking, they often do not go to school, less attention to teachers and busy by themselves. Teachers are still lacking to create a fun learning atmosphere. In 3 meetings that have been done in the cycle I shows that the completeness of learning in reading using word card is 60% (12 students) and 40% unfinished (8 students) of 20 students. From the results of the evaluation in cycle I, it does not reach the expected of criteria is 75%, and it needs to proceed in cycle II.

*3.1.2. Research Cycle II*

The activities conduct in cycle II described as follows:

*a. Planning*

Same with the activities in cycle I, in cycle II the researcher prepares some instruments used in teaching learning. It starts with preparing a daily activity plan (RPPH) with theme “My Food and Drink”. Then, researcher prepares word cards to be used in in classroom. Moreover, she also prepares pieces of pictures and words, books, glue on students’ activities, observation sheets and evaluation sheets to find out students’ improvement in early reading skills.

*b. Action*

The activity in cycle II begins by greeting, prayer, giving motivations to know the condition of the students and checking the readiness to study. For the warming up, the teacher also asks the students to sing a song together. They seem more excited to follow the learning activities. And of course the researcher motivates them to be more active. In this time, the researcher repeats the activities at previous meetings with learning objective is students are able to read the word card deal with rice, bread, milk, and coffee. The researcher asks the students to read the word and mentions letter by letter simultaneously. Then, she calls the students one by one to read the word card and assign them to take pieces of words that fit picture and paste it in the task book. At the end of the activity, the researcher concludes the material that has been studied and giving feedback of activities that have been done and continued praying.

*c. Observation*

Based on observation in cycle II, the researcher finds that there are some students are on time to school. Meanwhile, there are 2 students who are still come late and preparedness in dressing is neat. In this case, students’ activity in learning has been better. Almost all students pay attention to the explanation given. They are eager to see word cards and pictures showed by researcher. In classroom assignment of matching word cards, most students can do well.

**Table 2.** Students Observation Results Cycle II

Criteria assessment	Number of Students	Observer I	Number of Students	Observer II
BSB	8	40%	7	35%
BSH	9	45%	10	50%
MB	3	15%	3	15%
BB	-	-	-	-

It can be seen in cycle II that there has been an improvement compared to cycle I. In cycle II, it reaches 85% which categorized good with 35% improvement. From the results of teacher observations in early reading skill in cycle II is 100% and it categorized very well. The improvement of teacher activity as follows: they have been able to manage teaching activity by creating a good atmosphere and guiding the conclusion of learning with the students.

#### *d. Reflection*

The teachers can create a fun atmosphere so students are more eager to read the illustrated cards accompanied by the word. Their activeness is good. They have focused to teachers. Besides, their abilities to match word card is better. There are 3 students who have not been able to complete matching the word card namely TR, IQ, NL because their understanding of the letter is still lacking. The completeness in cycle II is better than the result of the evaluation of cycle I. From 20 students, which reached the Number result of 16 students (80%) and 4 students (20%), they are AR, TR, IQ, and NL due the student just understands some letters that have not been able to read them.

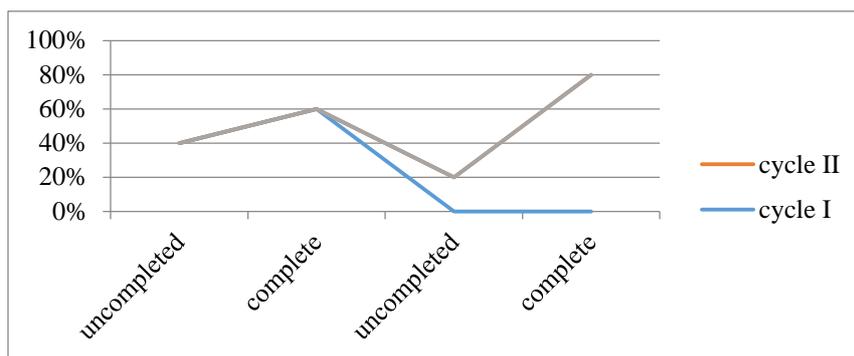
### **3.2. Discussion**

From the finding in cycle I and cycle II, it shows that by using word card media can improve the kindergarten student ability in early reading skill especially class B2 TK Kemala Bhayangkari Ternate academic year 2017/2018. This can be seen from the results obtained at the end of the cycle to measure the success achieved. The rate percentage of students in cycle I is 60%, 4 students (20%) got very good (BSB), 8 students (40%) got the (BSH), and 8 students (40%) got (MB). The improvement of students in cycle I is good enough, but not in accordance with the indicators to be achieved. In this case, there are still some students who have not understood the material submitted by researchers due to students less attention and play alone, they cannot know the letters so that they are less interested to read. There are still students who are reluctant and shy to guess the word card shown, because they cannot read well. In addition, in guessing and reading the word card, students are assigned to connect card with words. Some students have not been able to complete the task given, there are students who are lazy, they do not understand the task given, they want to color the picture only, and also they have not been able to recognize the writings.

**Table 3.** Result of evaluation cycle I and cycle II

Assessment criteria	Cycle I (%)	Number of Students	Cycle II (%)	Number of Students
BSB	20%	4	30%	6
BSH	40%	8	50%	10
MB	40%	8	20%	4
BB	-	-	-	-

Figure I prove that the completeness of students' early reading is good. In cycle I, it reaches 40% and decreases in cycle II 20% while the completion in cycle I reaches 60% and 20% increase in cycle II, it reaches 80%. The improvement has reached the expected indicator that is 75% of the success rate of students. It also supports the opinion of Doman in Aulia (2012: 94); the use of word cards is one of the media that can be used to stimulate the coordination of the eyes and ears of students, so as to increase the student's teaching learning. In conclusion, the ability of students in class B of TK Kemala Bhayangkari Ternate in early reading is good, so it does not need to continue in next cycle.



**Figure 1.** Result of Cycle I and Cycle II

#### 4. Conclusion

The researcher concluded that the use of word card media improve early reading ability of the students in group B TK Kemala Bhayangkari Ternate academic year 2017/2018. It can be seen from the completeness of students' learning in cycle I reached 60% (12 students) and increased in cycle II is 80% (16 students) from 20 students.

#### References

- [1] Aqib, zainal, 2013. *Model-Model, Media, dan Strategi Pembelajaran Kontekstual (Inovatif)*. Bandung: Yrama Widya
- [2] Brown, H. Douglas. 2001. *Teaching by Principles: An Interactive Approach t Language Pedagogy 2nd Edition*. New York : Longman.
- [3] Ergin, G., Ünsal, Y. & Tan M. 2006. "5e Modeli'Nin Öğrencilerin Akademik Başarısına Ve Tutum Düzeylerine .
- [4] Iskandar. 2010. *Metode penelitian pendidikan dan sosial (kuantitatif dan kualitatif)*. Jakarta : G.P Press.
- [5] Lorschach, Anthony W. 2002-2006. *The Learning Cycle as a Tool for Planning Science Instruction*. accesses in [www.coe.ilstu.edu/](http://www.coe.ilstu.edu/)
- [6] Musfiqon. 2003. *Pengembangan Media dan Sumber Pembelajaran*. Jakarta: PT. Prestasi Pustakaraya
- [7] Mcnamara. 2007. *Reading comprehension strategies*. New York: Lawrence Erlbaum Associates, Inc.
- [8] Pamadhi dan Sukardi. 2008. *Seni Keterampilan Anak*. Jakarta: Universitas Terbuka.
- [9] Sugiyono. 2013. *Metode Penelitian Kuantitatif, Kualitatif, dan R & D*. Bandung: Alfabeta.
- [10] L R. Gay. 2006. *Educational Research Compotencies for Analysis and Aplication Fourth Edition*. Canada: Macmilan Publising Company
- [11] Suyanto, Slamet. 2005. *Konsep Dasar Pendidikan Anak Usia Dini*. Jakarta: Depdiknas
- [12] Sudjana, N. 2001. *Penilaian Hasil Proses Belajar Mengajar*. Bandung: PT. Remaja Rosdakarya
- [13] Susanto, Ahmad. 2011. *Perkembangan Anak Usia Dini*. Jakarta: Kencana Prenada Media Group
- [14] Zainuri, dan Harry A.P. 2006. *Sumber Dan Media Pembelajaran*. Malang: PPPG IPS dan PPM Malang

# The Utilization of Banana (*Musa Pariciae*) Peel Silage To Improve Productivity of Small-Framed Goat (*Capra Hircus*) in Worat Worat Village, Sahu District, West Halmahera Regency

Fauziah Nurhamiddin<sup>1</sup>, Yusri Sapsuha<sup>2</sup>, and Rahmania Sadek<sup>3</sup>

<sup>1</sup>Mathematics Study Program at FMIPA, UMMU, Ternate

<sup>2</sup>Animal Husbandry Study Program at Agriculture Faculty, UNKHAIR, Ternate

<sup>3</sup>Elementary School Teacher Education Study Program at FKIP, UMMU, Ternate

Email : fauziah\_nurhamiddin75@yahoo.com

**Abstract.** This research aims at discovering (the effects of) banana peel silage feeding on goat livestock productivity which includes weight gain, ration consumption and conversion in Worat Worat village, Sahu District, West Halmahera Regency. The materials used in this research are 12 goats of 4 to 6 month-old age and weight around 10 kg. The feeds used in this research are greenery and banana peel silage as well as tofu dregs as concentrate. The treatments used are R1 = 100% greenery + Concentrate, R2 = 75% greenery + 25% silage + Concentrate, R3 = 50% greenery + 50% silage + Concentrate, R4 = 25% greenery + 75% silage + Concentrate. The variables under observation are the small-framed goat's consumption, weight gain, and conversion of ration. The obtained data are analyzed using completely randomized design (CRD). The research results indicate that in terms of the small-framed goat's average weight gain, the highest one is found in treatment R3 (40.30 gr) and the lowest one is found in treatment R4 (37.29 gr). The highest average ration consumption value is found in treatment R3 (905.26 gr) and the lowest is found in treatment R4 (853.09 gr) and for ration conversion the highest average value is found in treatment R2 (23.25) and the lowest is found in treatment R1 (21.79). Based on the research which has been conducted, it can be concluded that banana (*Musa pariciae*) peel silage feeding up to 75% has insignificant influence on small-framed goat's weight gain, ration consumption and conversion.

**Keywords:** *Small-framed goat, banana peel, weight gain, consumption, ration conversion.*

## 1. Introduction

Small-framed goats are indigeneous goat species in Indonesia which yang have adapted to their environment. Despite its small body size, they are good and potential meat producing livestock. Until recently, small-framed goat farmers are mostly traditional ones spread throughout Indonesia to even reach its rural areas. While the livestock maintenance performed by these farmers can be classified as merely side job, this plays fairly important role since it can help them earn more.

Goat farming in Indonesia holds quite an important place due to their varied use as well as its extensive distribution throughout the country. For minor farmers, farming or plantation labors in rural areas, goat farming serves a great social function in their effort of utilizing the available, unused resources in their family. The sources of natural greenery in the form of grasses and leaves commonly found in rural areas and plantations constitute "green gold" which will be wasted when they are not utilized by goat farmers in these areas.

Silage is livestock feed greenery preserved through lactic acid fermentation. In this method, the greenery is still fresh and can be fed to livestock animals without harming their digestion process or causing other negative effects. The process of making silage is known as ensilage. This process can take place well when sufficient soluble carbohydrate is available and the anaerobic condition can be reached as fast as possible. In principle, ensilage process occurs because lactic acid bacteria change

the greenery's soluble carbohydrate into lactic acid. Thus, the one responsible in the ensilage process is the soluble carbohydrate and lactic acid bacteria.

Banana peel is a part of banana which is usually disposed of as a waste. The energy metabolism (EM) content in banana peel is not too different from that in corn at 2960.02 Kkal/kg and its PK is higher than that of corn at 9.96%. Hernawati, *et al* (2009) argue that banana peel also contains carbohydrate, particularly extract material without nitrogen at 49.80%.

Banana peel also contains very high vitamin A, particularly provitamin A, i.e. beta-Carotene at 45 mg per 100 gram dry weight. Beta-Carotene can impede the work of HMG-KoA (hydroxymethylglutaryl-KoA) reductase enzyme which is responsible for the cholesterol biosynthesis process (Nurcholis, 2005).

North Maluku is one of those banana production centers. Based on the North Maluku Agriculture and Food Resilience Office's statistic data in 2010, its banana productivity has reached 90 ton/hectare with its plant area of 95.5 ha. The banana production in North Maluku witnesses an increase each year. From the latest data in 2010, it is found that it reaches 36085 ton, with a plant area of 676 ha (North Maluku Agriculture and Food Resilience Office, 2010).

The banana varieties in Ternate Municipality include *raja*, *kepok kuning*, *kepok puti*, *mulu bebe*, *tanduk*, *ambon*, *susu* and *mas*. Based on the survey conducted by BP4K (*Badan Pelaksanaan Penyuluhan Pertanian, Perikanan dan Kehutanan* or Agriculture, Fisheries and Forestry Counseling Executing Agency) of Ternate Municipality in 2010, from those banana varieties above, the most commonly found in Ternate are *raja* and *kepok* (*Badan Pelaksanaan Penyuluhan Pertanian, Perikanan dan Kehutanan Kota Ternate*, 2010).

Judging from this potential nutritional value of banana peel, it is therefore necessary to conduct research on the utilization of banana peel silage to allow the fulfillment of feed for goat livestock. This research aims at discovering (the effects of) banana peel silage feeding on goat livestock productivity which includes weight gain, ration consumption and conversion.

## 2. Research Method

### 2.1. Ensilage

Banana peels are chopped in pieces at 2-3 cm size and withered to make its water content at around 65%. This withering is done by spreading the thin banana peel, hence the banana peel's dry material content decreases by 35%. Afterwards, the banana peels are weighed and added with milled corn as an additive (5% of the banana peel weight), put into a bucket as a silo gradually and compacted until it is air-tight and the atmosphere becomes anaerobic and finally it is incubated for 21 days. The use of 5% additive follows the results of research conducted by Utami and Sapsuha (2008), which finds that the use of 5% additive can increase the nutritional content in ensilage process.

### 2.2. Goat Maintenance

12 small-framed female goats of 4 to 6 month-old age have been used in this research. The experiment livestock animals are divided into 4 treatments consisting of 3 repetitions. In each treatment, the feed is provided differently, i.e. R1 = 100% greenery + Concentrate, R2 = 75% greenery + 25% silage + Concentrate, R3 = 50% greenery + 50% silage + Concentrate, and R4 = 25% greenery + 75% silage + Concentrate

### 2.3. Parameters Observed

The parameters observed are the small-framed goat's (*Capra hircus*) consumption, weight gain and ration conversion .

#### 1. Daily Weight Gain (DWG)

The daily weight gain can be calculated using the formula:

$$DWG = \frac{\text{Weight Gain ( g )}}{\text{Number of maintenance day}}$$

#### 2. Feed Consumption

The feed consumption is calculated by subtracting the number of feed materials being given with the remaining feed.

#### 3. Feed Conversion

The feed conversion is calculated from dividing the number of daily feed consumption with the daily weight.

#### 2.4. Data Analysis

The obtained data are analyzed using the analysis of variance of Completely Randomized Design (CRD). When significant difference is found, it is followed with Least Significant Difference (LSD) test (Steel and Torrie, 1993).

### 3. Results And Discussion

#### 3.1. Weight Gain

Growth constitutes a nature of important economic value in the performance of livestock production. This growth is measured based on body weight. Data on weight gain will allow researchers to figure out the value of a feed material for livestock animals. The influence of banana peel silage feeding on small-framed goat's weight gain during this research can be seen in Table 1.

**Table 1.** Influence of banana (*musa pariciae*) peel silage feeding on small-framed goat's weight gain during research

Repetition	Treatment			
	R1	R2	R3	R4
1	37.52	38.57	39.66	37.52
2	38.51	37.51	39.62	36.63
3	42.53	40.63	41.62	37.73
<b>Total</b>	<b>118.56</b>	<b>116.71</b>	<b>120.9</b>	<b>111.88</b>
<b>Average</b>	<b>39.52</b>	<b>38.90</b>	<b>40.30</b>	<b>37.29</b>

Based on the analysis of variance, it is found that these treatments have insignificant effect on small-framed goat's weight gain ( $P > 0,05$ ). This is because the nutrition content of each treatment is relatively the same, thus they do not produce significantly different weight gains.

Table 1 shows that the highest average weight gain is obtained using banana peel silage feeding 50% (R3), i.e. 40.30 gr/day followed by 100% fresh greenery feeding (R1) at 39.52 gr/day, 25% banana peel silage (R2) feeding at 38.90 gr/day and the treatment resulting in the least daily weight gain is 75% banana peel silage feeding (R4) at 37.29%.

The small-framed goat's highest daily weight gain during research is found in treatment R3 (silage feeding 50%) which is 43.11 per goat per week. This is because in treatment R3 the livestock animals consume the feed in larger number than in other treatments (Table 3). Djayanegara and Haryanto (1993) suggest that the amount of feed consumption determines the amount of nutrients the livestock animals can consume and, furthermore, it influences the level of livestock animal's productivity, including increasing their weight gain.

#### 3.2. Ration Consumption

Voluntary feed intake is the amount of food consumed by animals when the food is given in *ad libitum* manner. The influence of banana peel silage feeding on small-framed goat's consumption ration during research can be seen in Table 2.

**Table 2.** Influence of banana (*Musa pariciae*) peel silage feeding on small-framed goat's consumption ration during research.

Repetition	Treatment			
	R1	R2	R3	R4
1	800.62	890.3	882.63	870.73
2	878.74	881.42	902.43	847.72
3	902.71	940.83	930.71	840.83
<b>Total</b>	<b>2582.07</b>	<b>2712.55</b>	<b>2715.77</b>	<b>2559.28</b>
<b>Average</b>	<b>860.69</b>	<b>904.18</b>	<b>905.26</b>	<b>853.09</b>

Based on the analysis of variance, it can be seen that treatments have insignificant influence on small-framed goat's ration consumption ( $P>0.05$ ). Table 2 shows that the highest average ration consumption is found in banana peel silage feeding 50% (R3), i.e. 905.26 gr/day, followed by 25% banana peel silage feeding (R2) at 904.18 gr/day, 100% fresh greenery feeding (R1) at 860,69 gr/day, and the lowest one is found in 75% banana peel silage feeding (R4) at 853,09 gr/day.

The research results indicate that the highest consumption ration is in treatment R3 (50% banana peel silage). This is because of the increased ration palatability with 50% silage feeding. Defendra and Burn (1994) suggest that voluntary feed intake is influenced by several factors. And one of these factors is feed palatability and anti-nutrition existing within the feed. Furthermore, it is said that consumption is an important factor which should be considered because the active consumption capacity constitutes the basic restraining factor in feed utilization.

A livestock animal's ration consumption is also influenced by other factors, including energy level, amino acid balance, ration texture, livestock animal activity, weight, growth rate, and environmental temperature (Parakkasi 1995).

### 3.3. Ration Conversion

Ration conversion is a comparison between the amount of consumed feed during certain period of time and what is produced (weight gain or produced production) within the same period of time. The influence of banana peel silage feeding on small-framed goat's ration conversion during research can be seen in Table 3.

**Table 3.** Influence of banana (*Musa pariciae*) peel silage feeding on Small-framed goat's ration conversion during research.

Repetition	Treatment			
	R1	R2	R3	R4
1	21.34	23.0	22.25	23.21
2	22.82	23.50	22.78	23.14
3	21.23	23.16	22.36	22.29
<b>Total</b>	<b>65.38</b>	<b>69.74</b>	<b>67.39</b>	<b>68.64</b>
<b>Average</b>	<b>21.79</b>	<b>23.25</b>	<b>22.46</b>	<b>22.88</b>

Based on the analysis of variance, it is found that the treatments have insignificant influence on small-framed goat's ration conversion ( $p>0.05$ ). This indicates that the banana peel silage feeding up to 75% gives no influence on ration conversion. Table 3 shows that the highest average ration conversion is found in 25% banana peel silage feeding (R2) at 23.25, followed by 75% banana peel silage feeding (R4) at 22.48, 50% banana peel silage feeding (R3) at 22.46 and the least ration conversion is found in 100% fresh greenery feeding (R1) at 21.79.

Feed conversion is related to feed consumption and weight gain. The insignificantly different conversions are because of the insignificantly different feed consumption and weight gain. This is because feed conversion is obtained from dividing feed consumption with weight gain. The substances in banana peel silage have not been able to stimulate the feed digestion process to allow the conversion of feed into meat optimally.

Feed efficiency is a complex unit which describes the influence of environment, gene, and the interaction of these two (Hunton, 1995). The factors which influence the level of feed efficiency is the livestock animal's digesting ability, quality of the feed consumed, and the congeniality of nutrient values contained in the feed (Zuprizal, 1998)

## 4. Conclusion And Suggestion

### 4.1. Conclusion

Banana (*Musa pariciae*) peel silage feeding has insignificant influence on weight gain, small-framed goat's ration consumption and conversion .

### 4.2. Suggestion

There is a need for further research on the use of banana (*Musa pariciae*) peel silage in large ruminant livestock animal (cow) to allow its comparison with its use in goat livestock (small ruminant)

## References

- [1]. Badan Pelaksanaan Penyuluhan Pertanian, Perikanan dan Kehutanan Kota Ternate, 2010.
- [2]. Devandra, C. And M. Burns. 1994. *Goat production in the tropics*. Commonwealth Agriculture Bureau, Farmharn Riyal, Bucks, England.
- [3]. Djayanegara, A. dan Haryanto. 1993. *Pengembangan Usaha Kambing dalam Konteks Sosial Budaya Masyarakat. Prosiding Lokakarya Nasional Kambing Potong. Kebutuhan Inovasi Teknologi Mendukung Agribisnis Kambing yang Berdayasaing*. Pusat Penelitian dan Pengembangan Peternakan. Badan Penelitian dan Pengembangan Pertanian, Bogor.
- [4]. Hernawati, H., A. Aryani, S. Tina, dan R. Solihat. 2009. *Optimasi Pemanfaatan Tepung Kulit Pisang Untuk Meningkatkan Kualitas Produksi Ayam Kampung*. Fakultas Peternakan. Universitas Padjadjaran. Bandung
- [5]. Nurcholis, M. 2005. *Evaluasi Kandungan Nutrisi Energi Metabolisme Semu (AME) dan Energi Metabolisme Sejati (TME) Berbagai Jenis Kulit Buah Pisang*. [http://studentresearch.umm.ac.id/index.php/dept\\_of\\_animal\\_husbandry/article/view/2535](http://studentresearch.umm.ac.id/index.php/dept_of_animal_husbandry/article/view/2535). Diakses 12 Februari 2016.
- [6]. Parakkasi, A. 1995. *Ilmu Nutrisi dan Makanan Ternak Ruminansia*, UI-Press, Jakarta.
- [7]. Steel, R.G.D and Torrie, J.H. 1993. *Prinsip dan prosedur statika, suatau pendekatan Boimetrik*. Gramedia Pustaka Utama, Jakarta.
- [8]. Zuprizal. 1998. *Nutrisi Pakan Unggas*. Fakultas Peternakan. Universitas Gadjah Mada. Yogyakarta.

# Farmers' Attitude Toward Organic Cocoa Bean Fermentation Practice: Case on the Cocoa Farmers' Group of Buana Mekar, Tabanan District, Bali Province

Gede Sedana

Faculty of Agriculture, Dwijendra University, Bali  
Email: gedesedana@gmail.com

**Abstract.** Cocoa farming has still played important role in the income of farmers in the district of Tabanan, Bali Province, Indonesia. However, the quality of beans produced by farmers is still low. One of the reasons contributing to low quality of cocoa beans in at the farmer level in Bali is the use of conventional processing method. Farmers did not conduct fermentation on their beans. The objectives of this study are to describe the attitude and knowledge of farmers about cocoa bean fermentation process, and to analyse the correlation of farmers' characteristics and their attitude toward cocoa bean fermentation. The research was conducted in farmer's group of Buana Mekar located in Tabanan district. 40 samples were selected by using simple random sampling out of 92 farmers as a population (members of farmer's group). Data used were primary and secondary data gathered by employing survey, observation and documentation techniques. Data analyzed by using descriptive method and statistical method, namely correlation test.

The results of study pointed out that the attitude of farmers toward cocoa bean fermentation was categorized into agreed with the average score was 78.50 % out of maximum score. This condition means that farmers have high positive attitude related to benefits of fermentation, techniques of fermentation, drying and quality of bean. The knowledge of farmers about cocoa bean fermentation was high with the average score was 72,40 % out of maximum score. Information about fermentation was gained from the government staff, project staff, facilitators, other farmers. Several characteristics of farmers (formal education, knowledge, land size of cocoa plantation and experiences on cocoa farming) have strong correlation to their attitude toward an application of cocoa bean fermentation. The other characteristics (age, and family members) have weak correlation to their attitude toward an application of cocoa bean fermentation. It is still needed to conduct more intensively extension and training on fermentation practices and ensure the proper price of fermented bean at the farmers level.

**Keywords:** *Cocoa bean, fermentation, attitude, correlation and farmer*

## 1. Introduction

In Bali Province, cocoa is one of the main commodities that are relied upon in the plantation sub-sector, which until now has experienced quite rapid growth. As an illustration that in 2010 the area of cocoa is about 6,564 ha with production reaching 5,424,367 tons, then expanded in 2014 where the area reached 8,769 ha with the achievement of production reach 7,123,869 tons. In particular regency, Jembrana regency, Tabanan regency are also the cocoa production center in Bali with total area of 3,149 hectares with production reaching 2,273,860 tons. Cocoa farming in Tabanan regency to date has been able to absorb the workforce of about 425,214 people or 17,094 households.

Organic cocoa beans demand has been increased for the international market. Therefore, the exporters have initiated to introduce the production process of organic cocoa beans. They have been obliged to have organic certificate to ensure that their cocoa beans are really organic. In Bali Province, organic certification for cocoa beans has been known since 2010. There were five cocoa farmers groups called *subak abian* in Tabanan regency, Bali, obtained organic certificate from an institution in Bogor because all of its production process apply environmentally friendly pattern.

Organic certificate is one of the requirements in free trade in the global market with the tight competition among the exporters within many countries.

The five *subak abian* has members as may as 271 farmers with a cultivation of cacao plant area of 180.9 hectares. *Subak-abian* Catur Guna in Akah Village, West Selemadeg District , 75 members of farmers, with a land area of 26.65 hectares with annual production of 19.9 tons. Similarly, *subak abian* Pangkung Sakti I consists of 70 farmers with 72 hectares of land with 52.3 tons of production per year. *Subak Abian* Pangkung Sakti II consists of 69 farmers working on 29 hectares of cocoa plant with production of 29 tons per year. In addition, *subak abian* Buana Mekar Akah Village, West Selemadeg District, has member 92 farmers with 23.3 hectares of land per year and 17.5 tons per year, and *subak-abian* Pemaksan Kaja consisting of 27 farmers owning 18.8 hectares with 13 production, 5 tons per year.

However, the development of cocoa production in Indonesia, including in Bali Province is often not followed by improved cocoa beans quality. Cocoa beans from smallholder plantations tend to be of low quality. The low quality of cocoa beans, mainly due to poor processing, such as unfermented cocoa beans or fermentation process is not good. Whereas fermentation is the core of cocoa processing process. This process not only aims to free cocoa beans from pulp and kill seeds, but mainly to improve and shape good and pleasant chocolate flavors and reduce the taste of bitter and bitter on the seeds (Putra, 2008). Fermentation can be done by several methods, such as fermentation of stacks, fermentation in baskets, and in-box fermentation. The choice of method depends on the ease of application and obtaining the fermentation container, as well as the availability of labor.

The perfect fermentation determines the flavor of cocoa beans and their processed products, as well as ripe and healthy fruits and good drying. If fermentation is less or less perfect, in addition to the distinctive flavors of chocolate are not formed, it is also often produced undesirable followup flavors, such as sour, bitter, sour, tasty, and ground flavor. This might bring about low quality of cocoa beans, thus make lower price.

*Subak-abian* Buana Mekar in Angkah Village, Selemadeg Barat District, Tabanan Regency has started to process organic cocoa beans, by fermentation. Fermentation technology has been introduced by the Provincial Plantation Office of Bali and the Office of Forestry and Plantation Tabanan District since the last ten years. In addition to fermentation technology, the government has also provided facilities such as fermented cocoa bean processing equipment, such as fermentation boxes, drying tools, para-para and solar dryers which are needed to obtain good quality fermented cocoa. Given the process of fermentation is a relatively new innovation, then research in this direction needs to be done to find out more about the social aspects of farmers who do fermentation. The objectives of this study are to describe the attitude and knowledge of farmers about cocoa bean fermentation process, and to analyse the correlation of farmers' characteristics and their attitude toward cocoa bean fermentation.

## 2. Methods

The study was conducted in farmer's group of Buana Mekar located in Tabanan district situated about 44 km from Denpasar city, westward. This was selected by using purposive sampling with some reasons. Firstly, this farmers' group has implemented fermentation process on organic cocoa beans. Secondly, this farmers' group has a partnership with an exporter of cocoa beans. In this study, it was selected 40 samples by using simple random sampling out of 92 farmers as a population (members of farmer's group). Measurement of categories of attitude and knowledge of farmers is based on the Likert scale by giving value 1, 2, 3, 4, and 5. Each category has an interval 16 gained from the below formulation.

$$i = \frac{\text{Score maximum} - \text{score minimum}}{5} = \frac{100\% - 20\%}{5} = 16$$

Referring to the interval cited above, the categories of attitude and knowledge of farmers could be seen in the Table 1.

**Table 1.** Categories of attitude and knowledge of farmers about fermentation of cocoa beans

No	Category of attitude	Score (%)	Category of knowledge
1	Strongly agree	> 84 - 100	Very high
2	Agree	> 68 - 84	High
3	Hesitate	> 52 - 68	Moderate
4	Disagree	> 36 - 52	Low
5	Strongly disagree	20 - 36	Very low

Data collected in the study were primary and secondary data. Data collection techniques used were survey, observation and documentation techniques. Data analyzed by using descriptive method and statistical method, namely correlation test by using Karl Parson Correlation. Its formulation is below.

$$r = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{N \sum x^2 - (\sum x)^2} \quad N \sum y^2 - (\sum y)^2}$$

Remarks:

N = Samples

x = Independent variables (age, formal education, family size, land holding and experiences on cocoa farming; knowledge).

y = Attitude

Value of r indicates the strength of correlation between the independent variables and dependent variables, with the intervals as shown below:

1. Very very strong correlation : 0,91 – 0,99
  2. Very strong correlation : 0,71 – 0,90
  3. Strong correlation : 0,41 – 0,70
  4. Weak correlation : 0,21 – 0,40
  5. Very weak correlation : 0,00 – 0,20
- (Nugroho, 2005)

### 3. Results and Discussion

#### 3.1. Characteristic of samples

In this study, the farmers' characteristic consisted of (i) age; (ii) formal education; (iii) family size; (iv) landholding for cocoa trees; and (v) the experiences on cocoa cultivation. Based on the survey toward 40 farmers as samples, it was known that the average age of farmers is 52.80 years with the interval between 32 years to 62 years (see Table 2).

**Table 2.** Characteristics of farmers

No	Item	Average	Interval
1	Age (year)	52.80	32 - 62
2	Formal education (year)	12.40	6 - 16
3	Family size (person)	5.40	4 - 7
4	Land holding (ha)	0.68	0.45 - 1.20
5	Experiences on cocoa cultivation (year)	22.50	6 - 36

Source: Analysis of primary data

Land holding of farmers is relatively small for planting cocoa trees, in which its average is 0.68 ha. The size of land has significant influence to the production of cocoa beans (Wessel, *et al*, 2015;

Ruf, 2011). Moreover, the experiences of farmers on cocoa cultivation is relatively long, it is about 22 years. In this study, the age of cocoa trees was more than 16 years in average, so this might also influence the productivity of trees to produce cocoa pods and good quality of beans (Dormon, et al, 2007). The age of farmers is relatively old, thus is needed to provide particular extension in order that they might be able to easier understand the information or innovation disseminated by the extension workers. Their formal education is seemingly supported the acceleration of innovation adoption introduced by the government agents or the other agents who have interest in the cocoa development, especially on the organic cocoa beans fermentation.

In the site, farmers had relative long experiences on the cocoa farming due to their farms are suitable to cultivate the cocoa trees. The average year of their experiences was 22 years. This indicates that they have skill on cocoa farming even though their skill are still relatively limited. Therefore, they need innovation and technology (good agricultural practices) on cocoa farming and fermentation process, too.

### 3.2. Attitude of farmers toward fermentation of organic cocoa beans

The results of the survey conducted on 40 sample of farmers in *Subak-abian* Buana Mekar showed that the average score of farmers' attitude toward the fermentation of organic cocoa beans is 78.50 % out of the maximum score, with an interval between 66.25 % to 90.40 %. This means that their attitude is agreed. Most of the farmers had a category of agree toward the fermentation of organic cocoa beans (80.00 %). In more detail, the frequency distribution of sample farmers based on their attitude categories on fermented cocoa beans can be seen in Table 3.

**Table 3.** Distribution of the frequency of farmers in each attitude category fermentation of cocoa beans

No	Category	Frequency (person)	Percentage (%)
1	Strongly agree	4	10.00
2	Agree	32	80.00
3	Hesitate	4	10.00
4	Disagree	0	0.00
5	Strongly disagree	0	0.00
<i>Total</i>		<i>40</i>	<i>100</i>

Sourcer: Analysis of primary data

Seeing the data shown on the Table 3, it could be mentioned that there in no farmer having disagreed and strongly disagreed attitude toward the organic cocoa beans fermentation. There is only 10.00 % of farmers who still hesitates on the fermentation process. The indicators measured in this attitude variable are (i) benefits of fermentation; (ii) techniques of fermentation; (iii) quality of cocoa beans; and (iv) marketing of fermented beans. Fermented cocoa bean is ensured by farmers to have higher quality and price (Kresnowati, et al, 2013; Mgumia, et al., 2015). Consequently, it could increase the income of cocoa farmers (Quarmine, et al, 2014; Nmadu, et al, 2015).

### 3.3. Knowledge of farmers on the organic cocoa beans fermentation

Based on the survey conducted in the site, it was found that the average knowledge of farmers about the organic cocoa beans fermentation is within the high category with the score 76.80 % out of maximum score. The interval score of their knowledge is between 64.25 to 90.40 %. The distribution of farmers based on the their categories is shown in the Table 4.

Regarding data mentioned in the Table 4, it could be said that most of farmers (80.00 %) has high knowledge about the fermentation of organic cocoa beans. There is no farmer has low and very low knowledge about the fermentation. Through the interview, the sources of information about fermentation of organic cocoa beans are from agricultural extension agents coming from government and non-government (facilitators of project management unit under the AMARTA Project). Besides, farmers also got information about the fermentation from the field staff of exporters that always bought the organic fermented beans, such as Big Tree Farm company.

**Table 4.** Distribution of the frequency of farmers in each attitude category fermentation of cocoa beans

No	Category	Frequency (person)	Percentage (%)
1	Very high	4	10.00
2	High	32	80.00
3	Moderate	4	10.00
4	Low	0	0.00
5	Very low	0	0.00
<i>Total</i>		<i>40</i>	<i>100</i>

*Sourcer: Analysis of primary data*

Information gained by farmers is regarded useful to making proper fermentation process in order to produced qualified fermented beans. They were also given information about the standardization of fermented beans which are needed by the international market. Participatory extension and training were conducted by the extension agents through the Productive Unit Processing owned by the farmers' group (*subak-abian*). Spreading information of organic cocoa beans fermentation was supported by the good atmosphere of farmers' group. This group had created closed interaction among the farmers to meet each other in the meeting hall of group and also in the field or cocoa farm area. They could discuss about the cocoa beans fermentation aside from good agricultural practices on cocoa farming. Another supporting aspect of this group to process fermentation is the facilities possessed by the group, such as fermentation boxes, drying machine, solar dryer which are important for doing fermentation. These equipment were provided by government at the regency and provincial levels. In order to make optimal operation of these equipment for fermentation, government staff at the two levels have intensive agricultural extension to farmers through their group.

### 3.4. Correlation between the farmers' characteristics and attitude

Characteristic of farmers have influenced their behavior on the innovation disseminated by the agricultural extension workers and other institutions' agents (Adesina and Zinnah, 2003; Napier, 2000, Sule, et al., 2002). In this study, the correlation among the independent variables ( age, length of formal education, family size, land holding size and experiences on cocoa farming) and dependent variable (attitude) shows different strengths. Only the length of formal education and experiences on cocoa farming have strong correlation with the attitude of farmers regarding organic cocoa beans fermentation process. The correlation of these variables are presented in the Table 5.

**Tabel 5.** Correlation among the independent variables and attitude

No	Independent variable	Correlation (r)	Remarks
1	Age	0,03	Very weak correlation
2	Length of formal education	0,64	Strong correlation
3	Family size	0,20	Very weak correlation
4	Knowledge	0.70	Strong correlation
5	Land holding size	0,62	Strong correlation
6	Experiences on cocoa farming	0,50	Strong correlation

*Remarks :*

*Very very strong correlation: if r is between 0,91 – 0,99*

*Very strong correlation: if r is between 0,71 – 0,90*

*Strong correlation: if r is between 0,41 – 0,70*

*Weak correlation: if r is between 0,21 – 0,40*

*Very weak correlation: if r is between 0,00 – 0,20*

Seeing the Table 4 above, factors of age, family size and land holding size of farmers has very weak correlation with their attitude toward the organic cocoa beans fermentation. This indicates that the younger farmers should be focused on the extension and training conducted by the extension agents and facilitators. This practice is addressed to make a cadres of farmers who have ability and capability to disseminate and motivate the older farmers to adopt the innovation of fermentation.

#### 4. Conclusion

Based on the discussion above, it is pointed out that the average of farmers' attitude toward the fermentation of organic cocoa beans is agreed. Their knowledge is high in average about the organic cocoa beans fermentation. Farmers get information about fermentation from the government staff, project staff, facilitators and other farmers. The characteristics of farmers, such as formal education, knowledge, land size and experiences on cocoa farming have strong correlation to their attitude toward an application of organic cocoa bean fermentation. Meanwhile, age, and family members of farmers have very weak correlation to their attitude toward an application of cocoa bean fermentation. It is recommended that government should conduct more intensively extension and training on fermentation practices and ensure the proper price of fermented bean at the farmers level in order to motivate farmers to have fermentation on their cocoa beans.

#### References

- [1]. Adesina A and Zinnah, M. (2003), 'Technology characteristics, farmer's perception and adoption decision: A Tobit model application in Sierra Leone'. *Agricultural Economics* , 9, 197-331.
- [2]. Dormon, E.N.A. A.V. Huis, C. Leeuwis. 2007. Effectiveness and profitability of integrated pest management for improving yield on smallholder cocoa farms in Ghana
- [3]. *International Journal of Tropical Insect Science*, 27 (2007), 27-39
- [4]. Kresnowati, M.T.A.P., L. Suryani, and M. Affifah. 2013. Improvement of Cocoa Beans Fermentation. *Journal of Medical and Bioengineering Vol. 2, No. 4, December 2013*
- [5]. Mgumia, A.H., A.Z. Mattee, and B.A.T Kundi. 2015. Characteristics of agriculture technology and application of an agricultural innovation system in Tanzania. *African Journal of Science, Technology, Innovation and Development*, Vol. 7 (2). 73-83.
- [6]. Napier, T.L. (2000), 'Adoption of conservation tillage production systems in three Midwest watersheds.' *J. soil cons.* 53: 123-134
- [7]. Nmadu, J.N., H.Sallawu, and B.V. Omojeso. 2015. Socio-economic Factors Affecting Adoption of Innovations by Cocoa Farmers in Ondo State, Nigeria. *European Journal of Business, Economics and Accountancy*, Vol. 3, No.2. 58-66.
- [8]. Quarmin, W. R. Haagsma, O. S.Dawson, F. Asante, A.V.Huis, D. O.Ofori. 2014. Incentives for cocoa bean production in Ghana: Does quality matter? *NJAS - Wageningen Journal of Life Sciences*, 60-63 (2012), 7-14.
- [9]. Ruf, F.O. 2011. The myth of complex cocoa agroforests: The case of Ghana. *Human Ecology*, 39 (3) (2011), 373-388
- [10]. Sule, A.M., Ogunwale, S.A. and Atala, T.K. (2002). Factors Affecting Adoption of Fishing Innovation among Fishing Entrepreneurs in Jebba Lake Community. In: T.A. Olowu (ed.), *Journal of Agricultural Extension*. Vol.6: 48-60.
- [11]. Wessel, M., P.M. Foluke, and Q. Wessel. 2015. Cocoa production in West Africa, a review and analysis of recent developments. *NJAS - Wageningen Journal of Life Sciences* Vol. 74-75, December 2015, 1-7.

# Women and Family: Law Perspective

**Hanafi Arief**

Fakultas Hukum, Universitas Islam Kalimantan Muhammad Arsyad Al-Banjari  
Banjarmasin  
Email : Hanafi\_arief@yahoo.com

**Abstract.** The United Nations (UN) has issued a Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). Many countries including Indonesia have ratified the convention, and therefore Indonesia is responsible for ensuring that the country's basic law and the establishment of legislation in the country are in line with guidelines established by CEDAW. Article 5 CEDAW affirms the importance of law reform and the need for a country's government to take serious steps to deal with prejudices and stereotypes affecting the role of women and men, based on the positive or negative aspects of each sex. Equality needs to be clear and exist in the laws and realities of life in a country.

The woman as the mother in the family has a very important role because she is the housekeeper and in hand she lies the success of a family. In addition to taking care of the household, she sometimes has to work outside to support the family's life. Due to this dual role, it often becomes the trigger why she is not maximally taking care of family affairs. As a result she often receives unfair treatment; treated roughly, considered low, small, weak, and so forth. Attitudes that view women as inferior to this male cause many women, especially the educated want to clarify the real position of women in a family. The issue of this woman can no longer be regarded as an insignificant marginal issue. Therefore this issue should be concrete and become the focus of the attention of the nation and state. Women's rights are the women's struggles around the world in general and in Indonesia in particular. Women's rights such as freedom, dignity and equality are often violated both by applicable law and by traditional provisions that apply to women.

This study aims to describe the status of women in the family and their rights in the perspective of Indonesian law and regulations and how the protection provided by law. This study is juridical normative, and prescriptive, with the approach of legislations, and the analysis is descriptive qualitative. The sources of law study are the basic rules, regulations, and international conventions which have binding force legally. The used legal materials are primary, secondary, and tertiary.

**Keywords:** *Women, Family, Legal Perspective*

## 1. Introduction

Marriage is a covenant. Marital agreements made by two prospective husband wife before their marriage.<sup>58</sup> And therefore the marriage gives rise to rights and obligations of each party; the husband and wife. Article 1, paragraph 1 of the IndonesiaN Marriage Law 1/1974 states, marriage is a bond between a man's inner physically with a woman as husband and wife with the aim of forming a family are happy and remain upon the One True God. Thus, the husband and the wife need to help each other and complete, so that each can develop nature in helping and achieving well-being spiritually and materially.

In accordance to the Indonesia Marriage Law 1/ 1974, rights and the position of the wife are consistent with the rights and position of the husband in household and social life together in society.<sup>59</sup> As stated, that the husband is the head of the family and the wife is a mother in the home.<sup>60</sup> Set out

---

<sup>58</sup>R. Soetojo Prawirohamidjojo & Marthalena Pohan, 2008, *Hukum Orang dan Keluarga*, Surabaya: Airlangga University Press, p. 74.

<sup>59</sup> Section 31 (1) Marriage Law 1/1974

<sup>60</sup> Section 31 (3).

anyway that husband and wife have compulsory to love each other, respect, loyalty and provide assistance to each other physically and psychologically.<sup>61</sup>

## 2. Discussion

Preventing and protecting women from discrimination in the family has long been the attention of International Rights Bodies. In 1994 the International Conference on population and development in Kahrh specifically noted the need to eliminate discrimination, sexual harassment and violence against women through legislative drafting specific. In 1967 the United Nations (UN) has issued a Declaration on the Elimination of Discrimination against Women. The Declaration took rights and thus the women based on equality of rights with men and made efforts to guarantee requiring the potential of such declaration. Based on the declaration of the Commission, The UN on women position organized plan of convention on the Elimination of All Forms of Discrimination against Women. On December 18, 1979, The Council of the UN complied the convention. Each country has a different form of protection to victims of crime. So did the procedures in implementing protection are also different.

The Indonesia Constitution of Indonesia 1945 stated that, each person is eligible for recognition, security, protection, legal certainty and fair and equal treatment before the law.<sup>62</sup> This section includes an assertion and assurance given to citizens of Indonesia to protection, equal and fair treatment before the law. This section also points out that the protection, equal and fair treatment are fundamental rights of the citizens of Indonesia. Therefore, no one can prevent citizens to protection and the behaviour. Meanwhile it is described in turn to uphold and protect human rights in accordance with the law of that country, then the implementation of human rights is guaranteed, arranged, and poured in regulations.<sup>63</sup> This section is pointed out that the basic rights of the citizens of Indonesia should be protected and given warranty and made in the form of regulations. It is intended to get a certainty and easily enforced.

In 1967, the UN issued a Declaration on the Elimination of Discrimination against Women. The declaration loaded the rights and obligations of women based on equality of rights with men and took measures to guarantee the implementation of the Declaration. Because the Declaration is not binding, the UN Commission on the position of Women organized plan on CEDAW. On 18 December 1979, the General Council agreed to convene the UN resolution that essentially not contrary to the State Ideology of Indonesia "Pancasila" and the Indonesia Constitution 1945. Therefore, the Indonesian Government in the UN World Conference on women in Copenhagen on 29 July 1980 signed the Convention. On July 24, 1984 the Indonesian Government confirmed the 7/1984 law on CEDAW. This also prompted the Indonesian Government issue a Presidential Decision Number 181 Year 1998 about National Commission of Anti-Violence against women set on 9 October 1998. Section 1 of the decision of the President sets out in the framework of prevention and solves the problem of violence against women as well as the elimination of all forms of violence committed against women, formed the National Commission of Anti-violence against Women.<sup>64</sup> The commission has the purposes of which are: (a) disseminate a better understanding on all forms of violence against women happening in Indonesia; (b) develop a conducive situation for the Elimination of all forms of violence against women in Indonesia; and (c) enhance prevention and effort to overcome all forms of violence against women and protection of the basic rights of women.<sup>65</sup> The Commission only a arranges preventive measures against violence to women victims, but does not strictly prevent the culprit. Thus the commission cannot give maximum protection to the victims.<sup>66</sup>

Laws are rules that are recognised and used by a country to establish justice and peace as well as to organize behavior and habit of humans in a society. One of the purposes of the law is to provide protection for anyone, given by a country through the act. The law is not just a list of rules to be

---

<sup>61</sup> Section 33

<sup>62</sup>Section 28 D, (1) Indonesia Constitution 1945.

<sup>63</sup>Section 28 (5)

<sup>64</sup>The Decision of the President of R.I. 181/1998 on National Commission of Antiviolence against Women, Bandung: Focus Media, p.79.

<sup>65</sup>Section 1

<sup>66</sup>Laa Jamaa, Hadidjah, 2008, *Hukum Islam dan Undang-undang Anti Kekerasan dalam Rumah Tangga*, Surabaya: Bina Ilmu, p. 28.

complied with. The law is a tool of social control and can be manipulated for the benefit of specific groups.<sup>67</sup> The law is the network conditions of the behavior of people as members of society, aimed for safety, happiness, and social order.<sup>68</sup>

Actually Indonesia has some laws and regulations related to the protection of women commonly and in the family specially such as:

### **2.1. Criminal Code**

Indonesia has criminal code named *Kitab Undang-Undang Hukum Pidana* (called KUHP). KUHP is the main reference for an evil in Indonesia, although KUHP is deemed unable to provide protection and justice to women in perfect or even a meal plan for which there is less able to provide justice to women victim<sup>69</sup> (violence) as violence summary in KUHP is limited to the scope of physical violence only. That is why other forms of violence occur to women could not be included in the category of acts of violence. While the KUHP actually does not know the form of violence in the household. Therefore, not all cases of violences in the household could have used about clauses in KUHP. Forms of violence within the household that does not exist in KHUP are such as rape in the household, and the household psychological and economic violence. The KUHP also has not provided sufficient balance for the suffering such as physical or psychological trauma of the violence victims. Further more, the problem of ignorance in the household, it is stated in Chapter XV of leaving persons who need help,<sup>70</sup> causing severe wounds,<sup>71</sup> death,<sup>72</sup> while the humiliation is attacking the honor or reputation of a person by accusing problems for the public.<sup>73</sup>

KUHP is the main criminal law of Indonesia providing for criminal offences involving the husband towards the wife as persecution,<sup>74</sup> although limited to physical abuse only. Offences involve persecution by husband against wife (not his wife against husband) with the heaviest sentence, namely the death penalty in cases of murder intentionally planned in advance.<sup>75</sup> An additional one-third sentence applies to offenders for the persecution to the mother, father, wife, or son.<sup>76</sup>

KUHP also provides section involving the husband relinquishing responsibility towards their wives. The same condition applies to those that according to law, are obliged to provide maintenance, treatment and care with the sentence up to nine years when resulting in death.<sup>77</sup> Likewise about abuse, it is also provided in KUHP with sentence up to nine years,<sup>78</sup> hold a person improperly resulting in death, with sentence up to twelve years.<sup>79</sup> In addition, the humiliation is also part of emotional crimes provided in KUHP with sentence up to nine months or fine at most four thousand five hundred rupiah.<sup>80</sup>

### **2.2. Marriage Law 1/1974**

Marriage in Indonesia uses two laws namely *Kitab Undang-Undang Hukum Perdata* (KUHPerdata called B.W.) specifically for non muslim citizens and Marriage Law 1/1974 specifically for muslim citizens. B.W regulates for the legal consequences of marriage in book one, although not all of it, because the consequences of another law are also regulated in other parts of B.W., and the others are also regulated in other Laws. The provisions between rights and obligations of husband and wife is contained in article 103 to 118. Among these provisions are followed by sanctions and not followed by sanctions. Rights and obligations of husband and wife can be differentiated into two parts

---

<sup>67</sup>Noor Aziah Mohd Awal, 2005, *Pengenalan kepada Sistem Perundangan di Malaysia*, Selangor D.E.: Syarikat Percetakan Ihsan, p. 2.

<sup>68</sup>Maidin Gultum, 2008, *Perlindungan Hukum terhadap Anak*, Bandung: PT Refika Aditama, p. 3.

<sup>69</sup>Neni Utami Adiningsih, 2004, *Penghapusan Keganasan Dalam Rumahtangga*, , <http://www.suarapembaruan.com/news> (20 April 2018).

<sup>70</sup>Section 304

<sup>71</sup>Section 306(1)

<sup>72</sup>Section 306(2)

<sup>73</sup>Section 310, 315

<sup>74</sup>Section 351 - 356 KUHP

<sup>75</sup>Section 340.

<sup>76</sup>Section 356.

<sup>77</sup>Section 304, 306 (2).

<sup>78</sup>Section 332 (2).

<sup>79</sup>Section 333.

<sup>80</sup>Section 310 - 321.

as a result arising from procreation itself, and the consequences that arise from the powers of the husband.

Meanwhile, beside regulating rights and obligations, Marriage Law 1/1974 also takes rules relating to violence in the household. It is said, to be a husband and wife is obliged to have mutual love, respect, loyalty and physically and spiritually provide assistance to each other,<sup>81</sup> the husband is obliged to protect his wife and provide everything need live homeless ladder fits its ability,<sup>82</sup> if a husband or wife neglects his or her duties, each can bring legal action in court,<sup>83</sup> for divorce in the cause of one party leaving the others for two years in a row without the consent of the other party and without a legitimate reason or because other things beyond her will,<sup>84</sup> either party commits cruelty or mistreatment of weight harm against other parties,<sup>85</sup> between husband and wife continually happen dispute and contention and there is no expectation of life pillars again in the household.<sup>86</sup>

A husband cannot divorce his wife with no plan. Because of that, this law provides for divorce in the because of *taklik* or conditional divorce. The *taklik* divorce happens when the husband recites divorce that depends on the occurrence of such a thing and as soon as the conditions, then the divorce passed.<sup>87</sup> In addition, this law also provides for the divorce due to *fasakh* or divorce in the cause of persecution. Both types of divorce can be claimed by the wife.

As stated that there should be enough reasons for divorce, the husband and wife will not be living pillars as husband and wife.<sup>88</sup> The husband is obliged to protect his wife and give all the needs for survival in accordance with his ability,<sup>89</sup> then when a husband or wife defaults in the performance of his or her duties, the parties can file a claim to the Court.<sup>90</sup>

### **2.3. Human Right Law 39/1999**

The basic rights of women is a fundamental right of one to support the Articles 1 and 2 of the Universal Declaration of Human Rights (UNHR). This declaration was taken by the UN more than 60 years ago after World War II and to show a commitment to uphold high, promote and protect the rights of the individual. This commitment starts from UNO Charter which stressed the confidence of nations internationally on fundamental human rights; that is to highen status and the value of human beings. This declaration at the bottom line is about respect for humanitarian values for each person, because in the verdict it was born as humans. Commitment to uphold and protect the right of every people (women and men) explicitly are stated that all people are born independent and have the same dignity and rights. They were bestowed the common sense and conscience and pleasure mingling with one another in a spirit of brotherhood.<sup>91</sup> Statement that this declaration does not allow or reject a discrimination is reflected in article 2: It was stated that every person is entitled to all the rights and freedoms as stated in this statement with no exceptions whatsoever, such as freedom of race, skin colour, gender, language, religion, political or other view, national originality or community, birth or other position. Further more, no differential will be held on the basis of political positions, the law or the international position of the country or district from which a person comes from, whether he or she was derived from free countries, district guardianship, colony, or which are under the sovereignty of the others,<sup>92</sup> political or other national view, or community.<sup>93</sup>

Indonesia is one of the countries that adopted the Declaration of Human Rights through Law 39/1999. This law provides for the existence of declaration of human rights as a fundamental right that

---

<sup>81</sup>Section 33 Marriage Law 1/1974.

<sup>82</sup>Section 34 (1)

<sup>83</sup>Section 34 (3)

<sup>84</sup>Section 39 (b)

<sup>85</sup>Section 39 (d)

<sup>86</sup>Section 39 (f)

<sup>87</sup><http://www.utusan.com.my/utusan/Keluarga/20120808/ke02/Cerai-taklik> (20 April 2018)

<sup>88</sup>Section 39. *Marriage Law 1/1974*

<sup>89</sup>Section 34 (1).

<sup>90</sup>Section 34 (3).

<sup>91</sup>Section 1, Human Right Law 39/1999

<sup>92</sup>Section 2.

<sup>93</sup>Section 2.

is non-stick and naturally not separated from humans to be protected, respected, and erected to elevate the value of humanities, wellness, happiness, and intelligence and justice.<sup>94</sup>

This law states that torture is a breach of basic human rights.<sup>95</sup> Therefore, each person is recognized as human beings entitled to personal conduct as well as demand and obtain the same protection,<sup>96</sup> have the right to live quiet, peaceful, happy, prosperous physically and spritually,<sup>97</sup> and have the right to be free from torture, judgment or course of conduct that cruel, inhumane, degrading human dignity and class.<sup>98</sup>

#### **2.4. Domestic Violence Law 23/2004**

As a result of KUHP cannot resolve the cases violent household, the Indonesian Government on the other hand enacted the special law 5/1998 on the Conventions Against Torture and Cruel Judgment, and removing Decision of the President 181/ 1998 on the National Commission of Antiviolence against Women. Then, in 2004 the Government enacted special law on Domestic Violence, 23/2004 which is the renewal of other laws that favour women. So, this law was created as a supplement to the existing KUHP.

The existence of law 23/ 2004 gives hope for wives towards the attempts to protect themselves. When the law 23/ 2004 is enforced consistently, then the law will help the efforts of protection of women, especially wives of various forms of violence, with some reasons, namely because of: (a) the husbands could not yet do as they are pleased against the victim. This is because the act of violence carried out a husband will no longer be private case, unless being a national and public; (b) the penalties set high; now with only one evidence of the victim's witness plus one valid tool of the crime (evidence of witnesses, evidence of experts, indicator, and evidence of offender) is enough to evidence the offenders of domestic violence.<sup>99</sup>

### **3. Conclusion**

Indonesia is a very cocern country with human rights in general and women's rights in particular, because Indonesia viewed the women play an important role in the family, community, or country. Since Indonesia independence in 1945 until now, there have been a lot of legal regulations are made with regard to the protection of women, both the protection of themselves as well as their rights. Indonesia also got involved and played active roles in the international meetings as well as events relating to the women empowerment and pretection. Indonesia also gave wide space to the community to hold the NGOs (Non Government Organisations) to engage in the empowerment and protection of women. Now ther have been lot of women commisions run by the community locally and nationally.

### **List Of Biography**

#### **Book**

- [1]. Hapriza Ashari, et el, 2005, *Prinsip Undang-undang Malaysia*, Pahang Darul Makmur: PTS Publications & Distributors Sdn. Bhd.
- [2]. Laa Jamaa, Hadidjah, 2008, *Hukum Islam dan Undang-undang Anti Kekerasan dalam Rumah Tangga*, Surabaya: Bina Ilmu.
- [3]. Maidin Gultum, 2008, *Perlindungan Hukum terhadap Anak*, Bandung: PT Refika Aditama.
- [4]. Neni Utami Adiningsih, 2004, *Penghapusan Keganasan Dalam Rumah tangga*, <http://www.suarapembaruan.com/news> (20 April 2018).
- [5]. Noor Aziah Mohd Awal, 2005, *Pengenalan kepada Sistem Perundangan di Malaysia*, Selangor D.E: Syarikat Percetakan Ihsan.

---

<sup>94</sup>Section 2

<sup>95</sup>Section 4.

<sup>96</sup>Section 5

<sup>97</sup>Section 9

<sup>98</sup>Section 33.

<sup>99</sup>Neni Utami Adiningsih, 2004, *Penghapusan Keganasan Dalam Rumah Tangga*, <http://www.suarapembaruan.com/news> (20 April 2018).

- [6]. R. Soetojo Prawirohamidjojo & Marthalena Pohan, 2008, *Hukum Orang dan Keluarga*, Surabaya: Airlangga University Press

#### **Legislation**

- [1]. Undang Undang Dasar Republik Indonesia 1945.
- [2]. Kitab Undang-undang Hukum Pidana (KUHP)
- [3]. Undang-Undang Perkawinan Republik Indonesia 1/1974
- [4]. Undang-Undang Hak Asasi Manusia 39/1999
- [5]. Keputusan Presiden Republik Indonesia Nomor 181 Tahun 1998 tentang Komisi Nasional Anti Kekerasan Terhadap Perempuan, Bandung: Fokus Media.

#### **Internet**

- [1]. [http://www.utusan.com.my/utusan/Keluarga/20120808/ke\\_02/Cerai-taklik](http://www.utusan.com.my/utusan/Keluarga/20120808/ke_02/Cerai-taklik) (20 April 2018)

#### ***Author's Biography***



Drs. H. Hanafi Arief, SH., MH., Ph.D., Law Faculty of Universitas Islam Kalimantan (UNISKA), Banjarmasin, Indonesia. Jl. Adhiyaksa 2, Kayu Tangi, Sungai Miai, Kota Banjarmasin, South Kalimantan, Indonesia.

- Dean of Law Faculty of Universitas Islam Kalimantan (UNISKA).
  - Member of Senate, Universitas Islam Kalimantan (UNISKA).
  - Supervisor of Legal Aid Institute, Universitas Islam Kalimantan (UNISKA).
  - Supervisor of Notary Public, Banjarmasin, Indonesia.
- Head of School Committee of MAN 2 MODEL school, Banjarmasin, Indonesia.

# Organoleptic Quality of Beef Meatball Filled With Jackfruit Seed Flour

Harapin Hafid<sup>1</sup>, Serlina Sirupang<sup>1</sup>, Rahman<sup>1</sup>, Inderawati<sup>1</sup>, Astriana Napirah<sup>1</sup> and Hasnudi<sup>2</sup>

<sup>1</sup>Department of Animal Science, Universitas Halu Oleo  
Jl. HEA. Mokodompit Kampus Anduonohu 93232 Kendari

<sup>2</sup>Departement of Animal Husbandry, Faculty of Animal Husbandry,  
Universitas Sumatera Utara, Kampus Padang Bulan 20155 Medan

**Correspondent Author:** harapinhafid14@gmail.com

**Abstract.** This research was aimed to analyze the effect of using jackfruit seed flour as filler on beef meatball quality, especially on its organoleptic quality. The used material were beef and jackfruit seed flour as filler. This research used a completely randomized design with 4 treatments and 3 replications, and also used 15 panelists as replication on organoleptic test. The treatments were addition of jackfruit seed flour in various amount: 0% (T1), 5% (T2), 10% (T3), and 15% (T4). The measured variables were organoleptic characteristics include color, aroma, flavour, texture, suppleness, and shape. The obtained data were analyzed using variance analysis, and continued using Least Significant Different Test. The result of the research showed that using jackfruit seed flour as filler gave a significant effect on color, flavour, aroma, suppleness, texture, and shape of beef meatball.

**Key words:** *beef, jackfruit, meatball, organoleptic.*

## 1. Introduction

Beef is a livestock product that has a fairly complete nutritional content, but easily damaged and suffered a decrease in quality if not immediately handle after harvest. The cause of easy crushed of the meat is the presence of moisture and protein content that cause the chemical change activities and microbial contamination, in addition to the endogenous enzyme that speeds up the damage meat daging (Aberle, et al., 2001; Hafid dan Syam, 2007; Hafid et al., 2017<sup>a</sup>).

Meatball is a very popular food in Indonesia. Meatball is a processed meat product, either beef, chicken, and fish without fiber and added with spices such as pepper, onions, salt, flour, and white egg as binder ingredients. Meatball was formed in round shape either manually or using machine and cooked in boiled water (Sunarlim, 1992; Syam dan Hafid, 2002; Hafid.2005).

Jackfruit seed turn out not necessarily to be considered as waste and disposed. During this time, jackfruit seeds utilized just by boiling and then eating. Although jackfruits has a lower carbohydrate content (78,9 g) than rice (100 g), jackfruits seed can be utilized as an alternative to a fairly nutritious foodstuff because still has protein content. If compared with many types of plants that are commonly used as producer of carbohydrates such as milling rice, boiled corn, and cassava, jackfruits still has a relatively potential nutrient contents (Ashari, 2006).

The usual filler material use in meatball production is starch flour such as cornstarch, tapioca, and spices such as garlic, onion, and monosodium glutamate as flavor enhancer. The meatball then formed into round shape and boiled until cooked which is marked by floating of meatball (Hafid, 2002; Hafid, 2017).

The process of making meatballs typically use tapioca flour. The useful of flour is to make a chewy texture, increase water holding capacity, and reduce cooking loss. To support local food diversification program, then the utilization of Southeast Sulawesi local foodstuff such as tuber and stem that contain starch can be used as flour in meatball making process. One of agricultural by-products that can be used is jackfruit seed. These materials can be used as flour after a series of processing such as drying out and milling. Based on the explanation above, it is considered to do a research about the effect of addition jackfruits seed flour on organoleptic characteristics of beef meatball.

## 2. Experimental Methods

### 2.1. Time and Location

This research was taken place in Laboratory of Livestock Processing Technology and Laboratory of Nutrition and Feed Technology, Faculty of Animal Science, Universitas Halu Oleo, Kendari. Research stage consisted of market and slaughtering house survey, application of research permission, material research preparation, preliminary research, and main research.

### 2.2. Material research

The equipment used in sample preparation were meat grinder, digital scales, small bowl, spoon, fork, cutting board, knife, jar, plastic basin, sieve, pan, tissue, stove, camera and stationery. While, the material used were beef, jackfruit seed flour as filler, ice cubes, salt, pepper, and garlic.

### 2.3. Research Procedure

**The making of jackfruits seed flour.** The ripe jackfruits were peeled then the seeds were separated. The seeds simmer for 30 minutes, peeled, thinly sliced, and drying out using oven at 60-100°C during 4 hours to reduce water content. Then the dried jackfruit seed are milled to obtain jackfruits seed flour.

**The making of beef meatball.** The fat and connective tissues were separated from beef meat. The meat then cutted into small pieces and grinded using meat grinder. During grinding, the jackfruit seed flour then added according the level of treatments. The other ingredients also added, such as sugar, salt, garlic, onion, pepper, and ice cube. After mixed well, the dough then formed into small round shape with a diameter 2-3 cm. The meatball then boiled through 2 stages. The first stage, meatballs were boiled in a hot water with a temperature 60-80°C for 7 minutes. The second stage, the meatballs then boiled into a boiling water during 3 until 20 minutes. The boiled meatballs then lifted and drained.

### 2.4. Experimental Design

This research used completely randomized design with 4 treatments and 3 replications for organoleptic characteristic test and used 15 panelists as treatments for organoleptic quality test. The treatments were addition jackfruits in various levels:

P1 = 250 g beef meat + 125 g starch + 8,5 g garlic + 7,3 g salt + 0,75 g pepper.

P2 = P1 + 12,5 g jackfruit seed flour (3%)

P3 = P1 + 25 g jackfruit seed flour (6%)

P4 = P1 + 37,5 g jackfruit seed flour (9%)

The data obtained were analyzed using analysis of variance. The formulation as describes bellow:

$$Y_{ij} = \mu + \alpha_i + \varepsilon_{ijk} \quad i = 1, 2, 3, 4 \quad j = 1, 2, 3, \dots, 15$$

While:

$Y_{ij}$  = The observation value

$M$  = Mean of treatment

$\alpha_i$  = The effect of addition jackfruit seed flour

$\varepsilon_{ij}$  = Value of error

The analysis then continued using Least Significant Different Test according to Gasperz (1991).

### 2.5. Measured Variables

The measured variables in this research were:

1. Organoleptic characteristic consisted of color, aroma, flavour, texture, suppleness, and shape. These variables were measured using hedonic test. The hedonic test was described as bellow.
2. Organoleptic quality consisted of color, aroma, flavour, texture, suppleness, and shape.

**Table 1.** The hedonic scale for color, aroma, flavour, texture, suppleness, and shape of meatball measuring

Organoleptic Parameter	Hedonic Scale	Criteria
Color	5	White
	4	Greyish white
	3	A bit grey
	2	Grey
	1	Smoky
Aroma	5	Very typical smell of meatballs
	4	The distinctive smell of meatballs
	3	Quite a typical smell of meatballs
	2	A slight smell of flour
	1	Very powdery smelling
Flavour	5	Very tasty
	4	Tasty
	3	Kinda tasty
	2	Bad taste
	1	Very bad taste
Texture	5	Very smooth
	4	Smooth
	3	Pretty smooth
	2	Rough
	1	Very rough
Texture	5	Very smooth
	4	Smooth
	3	Pretty smooth
	2	Rough
	1	Very rough
Shape	5	Very round
	4	round
	3	Pretty round
	2	Flat
	1	Irregular rounded
Suppleness	5	Very chewy
	4	chewy
	3	A bit chewy
	2	Not chewy
	1	Not very chewy

Source: Hafid and Syam (2007); Hafid et al. (2017<sup>a</sup>)

### 3. Result And Discussion

Organoleptic test is a testing which is based on sensing process. Sensing can also mean as a sense reaction when senses get stimulation. This test was done using hedonic test which include flavor, color, shape, aroma, texture, suppleness (chewy), and shape. The result of the hedonic test can be seen on Table 2.

**Table 2.** The average of Organoleptic quality of beef meatball

Variables	Addition of jackfruits seed flour (g)			
	P1 (0%)	P2 (3%)	P3 (6%)	P4 (9%)
------(Hedonic Score)-----				
Color	3.33± 0.90 <sup>a</sup>	2.73± 0.80 <sup>b</sup>	1.73±0.80 <sup>c</sup>	1.40± 0.63 <sup>c</sup>
Aroma	3.67 ±0.62 <sup>a</sup>	3.13 ± 0.74 <sup>ab</sup>	2.80 ± 1.01 <sup>b</sup>	2.73±1.33 <sup>b</sup>
Flavour	3.93±0.46 <sup>a</sup>	3.73±0.59 <sup>a</sup>	3.20± 0.68 <sup>b</sup>	3.20± 0.77 <sup>b</sup>
Texture	3.60 ±0.63 <sup>a</sup>	3.00 ± 0.65 <sup>b</sup>	2.73 ± 0.80 <sup>b</sup>	2.93 ± 0.80 <sup>b</sup>

Suppleness	3.80±0.41 <sup>a</sup>	3.40 ± 0.51 <sup>ab</sup>	3.20 ± 0.86 <sup>b</sup>	3.07 ± 0.88 <sup>ab</sup>
Shape	2.80 ± 0.94 <sup>a</sup>	3.40± 0.63 <sup>b</sup>	3.67 ± 0.49 <sup>ab</sup>	3.47 ± 0.83 <sup>b</sup>

Different superscript in the same line showed a significant different ( $P < 0,05$ )

### 3.1. Color

One of factors that affect meatball color is meat myoglobin. Beef include in red meat categories, so that its color will changes into pale red during cooking process. The result of variance analysis showed that addition of jackfruit seeds flour affected ( $P < 0,05$ ) meatball color. There were a significant different among all treatments, except P3 and P4.

Based on hedonic scores, addition of jackfruit seed flour on beef meatball cause a less bright colors. The scores of meatball colors were ranging from 2,73 to 3,67. Schwedt (2005) also reported similar result, that teh color of beef meatball using jacfruit seed flour doesn't like the color of meatball in general. Sunarlim (1992) and Kurniawati (2008) also reported that using of starch as filler ingredient on beef meatball will affect its final color.

### 3.2. Aroma

The result of variance analysis showed that addition of jackfruit seeds flour gave a significant effect ( $P < 0,05$ ) on meatball aroma. The P1 treatment differ with P3 and P4, but has a same aroma score with P2.

The hedonic score of metball aroma on P1, P2, P3, and P4 were 3,33, 2,73, 1,73 and 1,40. This means the aroma of meatball which use jackfruit seed flour tends to be fairly distinctive smell of meatballs. The result of this research are supported by the result of Schwedt (2005) and Sudrajat (2007), who reported that the panelist response on the aroma of beef meatball using jackfruits seed flour were ranging from quite like to like. The meatball aroma was strongly affected by flour as fillers ingredient, distinctive aroma of meat, and other added ingredients. During meatball making process that started with mixing to boiling, there will be various reaction between filler, added ingredients and meat. These reaction could reduce the distinctive meat aroma.

### 3.3. Flavour

The flavour was ranked first against the acceptance of the consumer against meatballs. Meatball taste was affected by several factors: chemical compounds, temperature, consistency, and interactions with other flavored components as well as the type and time of cooking. The result of variance analysis showed that adding jackfruit seed flour on beef meatball gave a significant effect on meatball flavour. Treatments P1 and P2 differ with P3 and P4. But, there were no significant different ( $P > 0,05$ ) between P1 and P2, and between P3 and P4. Addition of spices such as pepper, garlic and salt could affect the panelist acceptance against meatball (Syam dan Hafid, 2002; Hafid, 2017; Hafid *et al.* 2017<sup>d</sup>).

### 3.4. Texture

Meatball texture was determined by fat and moisture content of meat and type of carbohydrates. The high fat content will produce a meatball with many wholes, so that it can affect the meatball texture, while high moisture content will result in a mushy texture of meatballs (Octaviane, 2002). The result of variance analysis showed that addition of jackfruit seed flour gave a significant effect ( $P < 0,05$ ) on meatball texture. Treatments P2, P3, and P4 have a similar texture scores, but they were different with P1.

The texture score of meatball using jackfruit seed flour were ranging from 2,73 to 3,60. This means addition jack fruit seed flour on meatball cause a pretty rough to pretty smooth texture. This result is similar with Kusnandar (2010) and Hafid *et al.* (2017<sup>b,c</sup>) who reported that protein denaturation could cause a change of texture on food (for example form a gel), or undergoes a wrinkled.

### 3.5. Suppleness

Suppleness is one of the atributes that are determined the consumens like and acceptance to meatball. The chewy meatball would taste rubery when chewed. The variance analysis resulted that P1 treatments differ with P3, but has a similar hedonic scores with P2 and P4. Addition of jackfruit seed flour affected ( $P < 0,05$ ) meatball suppleness.

The average of suppleness score of meatballs of P1, P2, P3, and P4 were 3,80; 3,40; 3,20; and 3,07, respectively. This means meatballs used jackfruits seed flour were chewy. This result is similar

with Djafar (2000) who reported that suppleness score of meatballs were ranging from a bit chewy to chewy.

### 3.6. Shape

The result of variance analysis showed that addition of jackfruit seed flour affected ( $P < 0,05$ ) meatball shape. P1 differ with P3 and P4, but has a similar shape score with P3. Meatballs produced in this research have shape score that are ranging from 2,80 to 3,67. This means that meatball with jackfruit seed flour tend to be round (spherical). Wibowo (2000) and Diah (2011) explained that meatball is a product of processed meat that are formed into round shape. Therefore, meatballs are favored and accepted in round shape.

## 4. Conclusion

It can be concluded that utilizing of jackfruit seed flour as filler ingredient gave a significant effect on color, aroma, flavour, texture, suppleness, and shape of beef meatball.

## References

- [1]. Aberle, D.E., J.C. Forrest, D.E. Gerrard and E.W. Mills. 2001. Principles of MeatScience. Fourth Edition. W.H. Freeman and Company. San Francisco United States of America.
- [2]. Ashari, Sumeru. 2006. Hortikultura Aspek Budidaya. Penerbit Universitas Indonesia. Jakarta.
- [3]. Dewan Standardisasi Nasional. 1995. SNI 01-3818, Bakso Daging. Dewan Standardisasi Nasional, Jakarta.
- [4]. Diah, A. 2011. Pemanfaatan Biji Nangka Pada Pembuatan Bakso. Surabaya: Universitas Negeri Surabaya.
- [5]. Djafar, Titek. F, Sitti Rahayu dan Rob Mudjisihono. 2000. Teknologi Pengolahan Sagu. Kanisius, Yogyakarta.
- [6]. Gasperz, V., 1991. Metode Rancangan Percobaan. Penerbit CV. Armico. Bandung.
- [7]. Hafid, H. 2005. Penerimaan Konsumen terhadap Bakso Sapi dari Bahan Daging dan Tepung yang Berbeda. Fakultas Pertanian Universitas Halu Oleo, Kendari. Buletin Penelitian Sosek 15 (8) : 89-95.
- [8]. Hafid, H., Mujianto, D. Agustina, Inderawati, and Nuraini. 2017<sup>a</sup>. The effect of storage time in the refrigerator to the quality of organoleptic beef. ADRI International Journal of Biology Education. 1(1): 29-36.
- [9]. Hafid, H., N.F. Ranti, Rahman, Inderawati, and Nuraini. 2017<sup>b</sup>. Effect of muscles types on beef quality of Bali cattle from traditional rearing. Proceeding International Conference 14th ADRI. P. 206 – 212.
- [10]. Hafid, H., A. Napirah, L. Meliana, Nuraini, Inderawati. 2017<sup>c</sup>. Organoleptic characteristic of frozen beef on different thawing methods. Proceeding International Conference 10th ADRI. P. 231 – 233.
- [11]. Hafid, H., Nuraini, A. Napirah, Inderawati. 2017<sup>d</sup>. Effect of time of aging and muscle position on organoleptic properties of peranakan ongole beef. Proceeding International Conference 4<sup>th</sup> ADRI. P. 432 – 441.
- [12]. Kurniawati. 2008. Protein chitosan sebagai pengawet alami dan pengaruhnya terhadap protein serta organoleptik pada bakso daging sapi. Skripsi. Fakultas keguruan dan ilmu pendidikan. Universitas Muhammadiyah. Surakarta.
- [13]. Octavianie, Y., 2002. Kandungan gizi dan palatabilitas bakso campuran daging dan jantung sapi. Skripsi. Fakultas Peternakan. Institut Pertanian Bogor, Bogor. <http://repository.ipb.ac.id>. Diakses : 20 Desember 2014.
- [14]. Schwedt, G. 2005. Taschenatlas der Lebensmittelchemie. WILEY-VECH Verlag, Weinheim.
- [15]. SNI. 1995. Standar Nasional Indonesia 01-3818-1995. Tentang Bakso Daging Sapi. Jakarta.
- [16]. Soeparno, 2009. Ilmu dan teknologi daging. Fakultas peternakan universitas gadjah muda. Yogyakarta.
- [17]. Soeparno. 2005. Ilmu dan Teknologi Daging. Universitas Gadjah Mada Press, Yogyakarta.
- [18]. Sudrajat, G. 2007. Sifat fisik dan organoleptik bakso daging sapi dan daging kerbau dengan penambahan karagenan dan khitosan. Fakultas Peternakan. Institut Pertanian Bogor.

- [19]. Sunarlim, R., 1992. Karakteristik mutu bakso daging sapi dan pengaruh penambahan natrium klorida dan natrium tripolifosfat terhadap perbaikan mutu. Tesis. Program Pasca Sarjana IPB, Bogor. <http://www.respository.ipb.ac.id>. Diakses : 21 Desember 2014.
- [20]. Syam, A. dan H. Hafid. 2002. pengaruh pemberian lokasi daging, bahan tepung dan umur sapi yang berbeda terhadap kualitas bakso. Jurnal penelitian Mimbor Akademik Edisi No.18 tahun XII Oktober 2002. Lembaga Penelitian Halu Oleo Kendari.

# Financial Capability Analysis of South Buru Regency in the Era of Regional Autonomy

**Hayati Hehamahua**

Univ. Iqra Buru

E-mail:Nurhayati\_heha@yahoo.com

**Abstract.** In accordance with the provisions of the Regional Autonomy Law, the regional authority is to have the responsibility of providing various services to the community with the principle of openness, participation and accountability to the community. The ability of local governments to manage finances as outlined in the APBD does not directly reflect local capability in financing the implementation of government tasks, development and social services. Regional financial independence is expected to finance economic development implemented through the role of government in optimizing the financial resources of their respective regions.

Measuring the success of regional autonomy is the ability to manage the potential of the region that will be created regional financial independence. One tool to analyze the performance of local governments in managing their regional finances is by the analysis of financial ratios to APBD that has been established and implemented.

**Keywords:** *financial capacity analysis and regional autonomy.*

## 1. Introuction

In accordance with the provisions of the Regional Autonomy Law, the regional authority is to have the responsibility of providing various services to the community with the principle of openness, participation and accountability to the community. The basic principle of autonomy is based on regional considerations that better know the needs and service standards for the people in the region (Hehamahua, 2.2015).

The ability of local governments to manage finances as outlined in the APBD does not directly reflect local capability in financing the implementation of government tasks, development and public social services. The regional financial independence is expected to finance the economic development that has been reforced through the role of the government in optimizing the financial resources of their respective regions. One of the benchmarks of the success of regional autonomy is the ability to manage the potential of the region that will be created regional financial independence.

This is certainly in accordance with the concept of regional autonomy is the right, authority and obligation of the autonomous regions to regulate and manage the affairs of the government and the interests of the local community in accordance with the legislation of the law (Law No. 32 of 2004. Pasal 1: 5).

In this context Regional autonomy is seen as a process that provides professional capacity to local governments to provide fulfillment of public needs on a local scale. Therefore there are some transfers of power among others, authority is submitted to the region, and the implementation of the centralized system which is then replaced by a decentralized system which means the authority is fully given to the region.

In the implementation of Regional Autonomy, there are four important elements that are submitted by the Central Government to the Regional Government. The four elements according to Cheema and Rondinelli (in Anita Wulandari, 2001: 17), are Decentralization of Politics, Fiscal Decentralization, Decentralization of Administration and Economic Decentralization. These four elements become the regional obligation to manage efficiently and effectively. In the implementation of regional development as a subsystem of the Indonesian government, so far development financing for most regions still rely heavily on the source of development financing coming from the central government.

This is reflected in the Regional Budget (APBD), where about two thirds of total local government expenditures are financed from donations and donations from the central government

(Shah and others 1997). One of the elements that the central government handed over to local governments was fiscal decentralization.

Fiscal decentralization is a major component of the decentralization of the implementation of regional autonomy and marks the start of a new chapter in regional development as well as its people in managing resources and (or) the full potential of the region to realize the welfare of the people and the progress of the region.

One of the elements that the central government handed over to local governments was fiscal decentralization. Fiscal decentralization is a major component of the decentralization of the implementation of regional autonomy and marks the start of a new chapter in regional development as well as its people in managing resources and (or) the full potential of the region to realize the welfare of the people and the progress of the region.

South Buru district is a new autonomous region since it broke away from Buru district in 2008. Entering the 17th year after the expansion, the local government is always trying to do various things by digging the sources of income to support the implementation of government wheels, but not optimal in exploring its resources..

The low role of Local Revenue indicates that the regional dependence on central government is still very large, it is certainly a challenge for regions in implementing autonomy, in which regions are required to be independent to manage their local economies, both in financial management and efforts in increasing regional revenues.

Each region must be able to explore sources of income through the availability of natural resources, as is the principle of regional autonomy (Hehamahua 99, -100.2015. ). To be independent in managing its finances for the benefit of the people in the region.

Thus the local government as the party entrusted with the task of running the wheels of government, development and service to the community must submit a report on the accountability of local finances to assess whether the local government successfully performs their duties properly or not. One tool for analyzing local government performance in managing local finances is by analyzing the financial ratio of APBD that has been established and implemented (Hehamahua, 3.2014).

## **2. Literature Review**

### *a. Review of Regional Autonomy*

According to Law no. 32 of 2004 Article 1 paragraph 5. Regional Autonomy is the right, authority and obligation of autonomous regions to regulate and manage their own governmental affairs and the interests of local communities in accordance with the laws and regulations. While Suparmoko (2002: 61) means regional autonomy is the authority of autonomous regions to organize and manage the interests of local communities according to their own initiative based on community aspirations.

In accordance with the explanation of Law no. 32 of 2004, that the granting of regional autonomy and districts / municipal authorities is based on decentralization in the form of broad, real and responsible autonomy. One of the main characteristics of the region capable of implementing regional autonomy according to Yuliati (2001: 22), is located on the financial capacity of the region to finance the implementation of local government with the level of dependence on the central government, has a smaller proportion and it is expected that PAD should be the largest part in mobilizing funds for local government administration.

Implementation of regional autonomy is essentially an effort to improve the welfare of the community by carrying out development activities in accordance with the will and interests of the community. With regard to the delegation of policy decision-making powers, the management of public funds and the regulation of activities in the administration of government and public services, the role of local financial data is urgently needed to identify local financing sources as well as the type and amount of expenditures to be spent for effective financial planning and efficient.

So the objectives of regional autonomy will be answered through the improvement of public services. This is clarified by Mardiasmo's statement that the objective of Regional Autonomy is 'to improve public services and promote the regional economy. Basically, there are three main missions of the implementation of regional autonomy and fiscal decentralization, namely:

- a. Improve the quality and quantity of public services and community welfare.
- b. Creating efficiency and effectiveness of local resource management.
- C. Empower and create space for the public (public) to participate in the development

process..

*b. Review of Regional Finance*

In Government Regulation no. 105 year 2000, states that the regional finance is all the rights and obligations of the region in the framework of the implementation of local government that can be assessed with money including all other forms of wealth related to the rights and obligations of the region within the framework of APBD.

Thus, according to Kiflimansyah (2001: 319), the APBD can be a reflection of the performance and capacity of local governments in financing and managing the implementation of government and development implementation in their respective regions in one budget year.

Conceptually, the pattern of relations between the central and local governments should be done in accordance with the financial capacity of the regions in financing the implementation of governance and development, although the measurement of financial capacity of this region will cause a difference.

So Hersey at all (in Nataluddin, 2001: 168-169) introduces "Situational Relations" in the implementation of regional autonomy as follows: (a). The pattern of Instructive Relation, the role of the government is more dominant than the autonomy of local governments (regions that are unable to implement regional autonomy). (b). The pattern of Consular Relations, the interference of the central government has begun to decline, as the region is considered a little more capable of implementing autonomy. c). The pattern of Participatory Relationships, the role of the central government is diminishing, since the regions concerned have a degree of independence close to being able to carry out autonomy affairs. (d). Pattern Relationship Delegatif, central government intervention is not there because the region has really capable and independent in carrying out the affairs of regional autonomy.

Starting from the above statement, it can be sure the potential of natural resources and human resources are different then there will be differences in relationship patterns and the level of independence between regions. As a guide in looking at the pattern of relationships with local capacity (from the financial side) can be shown in the Table below:

**Table 2.I** Pattern Relationship Level Ability Area

<b>Financial Capability</b>	<b>Independence (%)</b>	<b>Pattern relationship</b>
Very low	0%-25%	Instructive
Low	25%-50%	Consultative
Medium	50%-75%	participative
High	75%-100%	Delegative

*Source: Halim (2002: 169)*

Table 2.1 above shows what Hersey at all describes (in Nataluddin), then the position or financial position (ability) of the district of BuruSelatan is at a low ability level (0% -25%), which is a pattern of instructif relationships.

- *Independence Ratio*

The ratio of self-reliance is indicated by the amount of local revenue compared to the regional income derived from other sources (external parties), among others: Profit sharing, Non-Tax Revenues, General Allocation Funds and Special Allocation Funds, Emergency Funds and Loan Funds (Widodo, 2001: 262).

The higher this ratio means the higher the participation of the community in paying the local taxes and levies which are the main components of local revenue. The independence ratio can be formulated as follows:

Independence Ratio	=	Locally-generated revenue
		Central / Provincial Government Assistance and Loans

### 3. Methodology

- *Types of research.*

This type of research includes descriptive research. According to Nazir (2003: 54) descriptive research is a method that describes a condition or events that occur at this time. Meanwhile, Sukmadinata (2006 in Hehamahua 2014), stated that descriptive research method is a method that tries to describe, interpret something, such as existing condition or relationship, opinion developing, ongoing process, effect or effect take place.

- *Data collection technique*

The method used in data collection in this research is literature study method or library research. Thus data derived from books, documents, articles and others related to this writing.

- *Data Processing Technique*

Data that have been obtained at the time of data collection processed by using descriptive analysis method. That is data derived from the APBD and then analyzed by using several ratios such as the independence ratio, the effectiveness ratio and efficiency.

### 4. Results

#### *South Buru District Overview*

South Buru Regency was originally part of Buru Regency, which in bloom became autonomous region in the year 2008 ago. Being an autonomous region is part of the people's desire in order to improve services in the field of governance, development and provide the ability to manage the potential of natural resources of the region.

- *Analysis of APBD of Buru District*

#### *Independence Ratio*

**Table 4.1** Development of APBD Buru Regency Years 2011- 2013 (in Million Rp)

No	Income	Year 2012	Year 2013	Year 2014	Year 2015
1	PAD	2.250.333.827.233	245.406.084.104	110.799.522.404	1.287.829.035.405
2	Pajak/retribusi daerah	858.154.077	926.542.335	110.837.142.440	1.616.167.392
3	Lain-lain PAD yang Sah	135.160.546.876	1.458.952.861	857.140.725.929	1.126.212.296.205
4	Danaperimbangan	319.662.116.549	378.942.398.809	467.218.168.688	536.142.858.589
5	3agi hasil pajak/bukan pajak	28.463.585.169	23.441.736.621	2.772.238.876	25.926.567.589
6	Bantuan DAU/DAK	294.162.633.000	355.819.479	442.858.262.670	51.021.6291.000
7	Lain-lain Pendapatan yang Sah	18.307.147.650.92	1.622.780.825.564	21266753619.27	4.778.666.019.896
8	Pendapatan Hibah	5.000.000.000	5.000.000.000	4.774.402.834	0,00
9	Sumbangan Daerah Otonom	6.338.118.000	7.643.317.000	13.333.139.000	36.997.369.000
10	Pinjaman	0,00	403664444	446878926.27	0,00
11	Lainnya	3/904/928/031	0,00	0,00	1.078.929.119.896
	<b>Jumlah</b>	<b>340219200702.68</b>	<b>397623569235.93</b>	<b>499560860329.56</b>	<b>596807809142.01</b>

Source: Finance Office of Buru Selatan Regency. data in thought.

Table 4.1 above shows the ratio of self-sufficiency to descent which means South Buru District Government tends to have a very high financial dependence to the central government. This can be seen from the contribution of PAD to the total APBD which is still relatively small and the main source of financing is still sourced from the Central Government Balance Fund.

Sharing the issues that participate in fiscal decentralization has made regional tendencies increasingly dependent on the central government. In fact, today the fiscal decentralization of the central government has given authority to the local government to be creative in exploring the financial resources contained in the region, both in the form of local taxes, user charges, and the results of the management of local wealth.

Thus the birth of the Regional Autonomy law by Nataluddin (2001: 167), bringing consequences for regions that will create differences between regions with one another, especially in terms of local financial capacity, among others as follows:

- a. Areas capable of implementing regional autonomy.
- b. The approaching region is capable of implementing regional autonomy
- c. A small area capable of implementing regional autonomy and
- d. Areas that are less able to carry out the affairs of regional autonomy

In accordance with the above statement, it can be ensured that South Buru Regency is located in an area that is slightly capable of implementing autonomy. It is reasonable to see from the above independence ratio. In terms of service ability in terms of shorten the range of control since the expansion, but from the ability to explore the potential sources of the region has not been maximized.

In fact, if able to explore the potential of regional resources to increase the PAD so it is expected to be a balancer between the central government funds and autonomous regions themselves. As has been previously mentioned that to analyze the performance of local governments in managing their regional finances is done by using some financial ratio analysis of independence ratios, effectiveness and efficiency ratio and Growth ratio.

But in this study the researchers only use the independence ratio, the reason is that if the autonomous regional governments are independent of financial ability, then certainly the efficiency ratio and others will be met. This means that government assistance can be just as a stimulant, because local governments are able to explore the potential of these areas.

## 5. Conclusion

Based on the explanation described above, some conclusions are taken as follows

1. Based on the ratio of local financial independence which is indicated by the average ratio ratio is still low between 0% -25%.
2. Regional financial independence is classified as having an instructive relation pattern which means the ability of the Government of South Buru Regency to meet the funding needs for the implementation of Government Administration, Development and Social Service tasks is still relatively low although from year to year it is increasing.
3. The level of dependence on income sources from the central government is still quite high

## 6. Recommendation

The results of the conclusions that have been presented, then born some suggestions as follows:

1. South Buru District Government needs to optimize local revenue sources through local taxes and taxes.
2. South Buru District Government is expected to explore the potential sources of the region
3. The government is expected to improve the performance of all stakeholders in their respective fields in order to achieve maximum PAD target.

## References

- [1]. *APBD Kabupaten Buru Selatan. media online. Data internet. www.kompastimur.com.*
- [2]. BPS. Kabupaten Buru Selatan
- [3]. Hehamahua Hayati 2015 *Dilema Petani Minyak Kayu Putih Pulau Buru. Penerbit Up Pres cetakan Pertama.*
- [4]. Hehamahua Hayati 2014. *Analisis APBD Kota Surabaya, suatu Kajian Kemandirian dan Efektifitas Keuangan daerah.* Madia Trend. Berkala Kajian Ekonomi dan Studi Pembangunan. Volume 9. Nomor 1 Maret.
- [5]. Halim. 2001. *Manajemen Keuangan Daerah*, Yogyakarta: UPP YKPN
- [6]. Kifliansyah. 2001. *Analisa Realisasi Anggaran Pendapatan Dan Belanja Daerah, Manajemen Keuangan Daerah.* Yogyakarta : UPP YKPN
- [7]. Mardiasmo. 2002. *Akuntansi Sektor Publik.* Penerbit Andin Jogyakarta
- [8]. Natahiddin. 2001. *Potensi dana perimbangan pada pemerintahan daerah di Propinsi Jambi, Manajemen Keuangan Daerah.* Yogyakarta : UPP YKPN.
- [9]. Suparmoko. 2002. *Ekonomi Publik.* Yogyakarta: AND

- [10]. UU RI. 2004. *Undang-Undang Republik Indonesia Nomor 32 Tahun 2004 tentang Pemerintah Daerah.*
- [11]. UU RI. 2004. *Undang-Undang Republik Indonesia Nomor 33 Tahun 2004 tentang Perimbangan Keuangan antara Pusat dan Daerah.*
- [12]. UU RI. 2000. *Peraturan Pemerintah Nomor 105 Tahun 2000 Tentang Pengelolaan dan Pertanggungjawaban Keuangan Daerah.*
- [13]. UU RI. 2004. *Undang-Undang Republik Indonesia Nomor 32 Tahun 2004 tentang Pemerintah Daerah.*
- [14]. UU RI. 2004. *Undang-Undang Republik Indonesia Nomor 33 Tahun 2004 tentang Perimbangan Keuangan antara Pusat dan Daerah.*
- [15]. UU RI. 2000. *Peraturan Pemerintah Nomor 105 Tahun 2000 Tentang Pengelolaan dan Pertanggungjawaban Keuangan Daerah.*
- [16]. Widodo. 2001. *Analisa Rasio Keuangan pada APBD Boyolali, Manajemen Keuangan Daerah.* Yogyakarta: UPP YKPN
- [17]. Wulandari. Anita 2001. *Kemampuan Keuangan Daerah. Jurnal Kebijakan dan Administrasi Publik Vol 5 No 2 November*

# Bureaucracy Culture in Public Service in Indonesia

Heryani Agustina

Email : heryaniagustina28@gmail.com

**Abstract.** Indonesian government bureaucracy culture is formed through long historical process started from traditional kingdom era (patrimonial bureaucracy), Dutch colonial era (colonial bureaucracy), Japanese colonial era, independent revolutionary era, until now (modern bureaucracy). Those traditions from traditional kingdom era, colonial era until now are strengthen and the continuation from the previous era. Historically, bureaucracy in Indonesia has no tradition to put public service as centre of bureaucracy life. Since colonial era until now, public service is always in marginal position. *Priyayi* mentality that wants to be served is still adopted by bureaucracy apparatus in giving public service. The solution is doing bureaucracy reformation that focus on mind set and culture set of bureaucracy apparatus through National Mental Revolution Movement. But, bureaucracy reformation faces many challenges from the bureaucracy body itself.

**Keywords:** *bureaucracy culture, public service, bureaucracy reformation*

## 1. Introduction

The opening of 1945 Constitution of Indonesia Republic paragraph four states that Indonesian country goal is to protect all Indonesian people and soil, to improve public prosperity, and to keep world peace based on independence, peacefulness, and social justice. That Indonesian country goal becomes the government duty that is implemented by giving public service.

Public service in Indonesia in new era of regional autonomy is more important because it becomes regional government goal as stated in Law Number 22 Year 1999 on Regional Government that has changed into Law Number 32 Year 2004 and Law Number 23 Year 2014. According to Law Number 23 Year 2014, regional government practice is directed to accelerate the implementation of society prosperity through service improvement, enforcement, and society participation, and regional competitive improvement by showing democracy principle, equality, justice and regional specialty in Indonesian Country system. That is why, public service improvement is one of the ways to accelerate the implementation of public prosperity that becomes the goal and spirit of regional autonomy.

In order to improve public service, Law Number 25 Year 2009 on Public Service has been decided. The goal of that Law decision are:

1. Implementation of clear limitation and relationship about rights, responsibility, duty, and authority of all parties related to the implementation of public service.
2. Implementation of public service system that proper with governmental public principles and good coordination.
3. Fulfillment of public service implementation suitable with rules of law.
4. Implementation of protection and legal assurance for society in public service implementation.

Along with that, government has done many efforts of public service through many service patterns that is one door or one roof integrated service, online service, and electronic service. Society has felt the benefit of those service pattern. But on the other side, society often complain about public service such as slow service, complex service procedure, unresponsive officer in handling society complain, expensive service cost, discriminative treatment in service, officer mentality who wants to be served not serving society, etc.

This paper will discuss bureaucracy culture in public service in Indonesia with its solution and challenge. The discussion of bureaucracy culture in public serving will be traced from the origin of public service in Indonesia from kingdom era and colonial era until now.

## 2. Research Method

In order to get the data for this paper, the research is done using qualitative approach. Qualitative research is a method to explore and understand the meaning --that by some individuals

and groups--- is considered coming from social or humanity problems (Creswell, 2014). The data in this research is collected from literature study by learning various relevant literature, in the form of books, rules of law, or data from internet.

### **3. Discussion**

#### **3.1. Organization Culture Concept**

Every organization has organization culture that differentiate that organization from other organization. According to Stoner (Suwanto dan Koeshartono, 2009), organization culture is a set of values, norm, attitude and faith that are believed by all members of organization. Robbins (1994) states that four function of organization culture are:

1. Culture has a role to set a limit.
2. Culture means identity for an organization.
3. Culture facilitates commitment.
4. Culture increases social system stability.

While Siagian (1999) states five important functions of organization culture, that are:

1. As the indicator of attitude limits, deciding what could or could not be done, what thing are considered good or bad, deciding what is right or wrong.
2. Creating identity of an organization and its member.
3. Creating commitment to common interest above individual or group interest.
4. As the binding rope for all organization members.
5. As the control device of attitude of the organization members.

In organization culture context, there are strong culture and weak culture terms. Strong culture is values that is held intensively and commonly believed in an organization. Weak culture is values that are not supported by the organization members or forced, so it brings negative effect to the organization because the organization will give wrong direction to its member (Suwanto and Koeshartono, 2009; Ndraha, 2005).

Those values in organization culture then stated in motto or slogan of working culture, such as: "professionalism", "integrity", "commitment", "dedication", "loyalty", "discipline", "responsive", "responsibility", "transparency", "quality first", "customer first", "give the best service", "serve with heart", "friendly", etc. Those values then implemented in attitude of management/organization in daily implementation of organization. This is supported by Ndraha (2005) that values in organization culture will create management/organization attitude.

In the organization that has strong culture, values embraced by organization do not only become motto, slogan or theory but it has believed by all member of the organization and it become the foundation of their attitude. Those values implementation is done through socialization process and internalization in organization since someone become member of organization. On the other hand, organization that has weak culture, the values believed by the organization only become motto, slogan, or theory that the implementation is "the grill is far from the fire".

In organization that has strong culture, the attitude of the organization member is suitable with the values in the organization. While in organization that has weak culture, the attitude of organization member is not suitable with values in the organization. The attitude of the organization member can be seen and felt clearly by the customer when they get the service from the member.

The attitude of organization member will create organization character because attitude shows character. Organization character is organization nature that is formed from values, moral and norm that become the foundation of point of view, thinking, attitude, and the way of the organization member act that differentiate one organization with other organization. Strong organization culture creates strong organization character, while weak organization culture will create weak organization character.

#### **3.2. Public Service Concept**

Human, as long as they live, always needs public service from government. When they were born, human needed service such as birth certificate. Then during their life, human needs many services such as education, health, population and civil registration, various permit, etc. Even when they are dead, human still need burial service and death certificate. The existence and role of government as the one who gives service is important, even though there are many public service done by private sector.

According to Kotler (Lukman, 2000), service is every beneficial activity in a group and offer satisfaction, although the result is not physically bound to certain product. While according to Moenir (2006), service is activity done by someone or group or organization with material factor foundation through certain system, procedure and method in order to fulfill other person interest according to his/her rights.

Public service is service given to public or society. According to Law Number 25 Year 2009 on Public Service, society in public service context is all parties, citizen or individual, group or legal institution that receive the benefit of public service, directly or indirectly.

Public service is serving people or society need who has interest with the organization suitable with decided main rules and regulation (Kurniawan, 2005). Public service is every activity done by government to certain number of people who has every beneficial activity in a group and offer satisfaction, although the result is not physically bound to certain product (Sinambela, 2014).

Public service is public service and product availability, done by government or non government party (Sinambela, 2014). That is why public service also can be done by non government parties. This is suitable with Law Number 25 Year 2009 that public service is activity or series of activity in order to fulfill service needs suitable with rules of law for every citizen and people of products, service, and/or administrative service provided by public service provider. Public service provider is every government practitioner institution, cooperation, independent institution that is formed based on law for public service, and other legal institution formed only for public service.

According to Law Number 25 Year 2009, public service is held based on public interest, legal assurance, equality of rights, rights and duty balance, professionalism, participative, equal treatment/non discriminative, openness, accountability, facility, and special treatment for vulnerable group, timeliness, speed, ease and affordability. Public service covers all service needed by society in their life. Public service consists of three types, namely product service, services, and administrative service.

According to Minister of State Apparatus Empowerment Decree Number 63/KEP/M.PAN/2003, public service is done using three pattern namely functional, centered, and integrated service. Functional service is public service pattern by service provider suitable with duty, function and authority. Centered service is service pattern given solely by service provider based on authority delegation from service provider related to other. While integrated service consists of three patterns namely, one roof integrated, one door integrated and working group. Whatever service pattern implemented, public service wanted by society is qualified service.

According to Garvin (Nasution, 2000), quality in service is a dynamic condition related to product, human labor, process and duty, and environment that fulfill or beyond customer or consumer expectation. The same thing is also stated by Tjiptono and Diana (2001) that service quality is dynamic condition related to service, human, process, and environment that fulfill the expectation. Service quality is dynamic condition because service quality given can change from time to time.

Zeithaml (Hardiyansyah, 2011) states that service quality consists of ten dimensions, namely tangible, reliable, responsiveness, competence, courtesy, credibility, secure, access, communication and understanding the customer. Those ten service quality can be resumed into five dimensions, that are:

1. Tangible, consists of indicators: officer performance in serving customer, serving place comfort, easiness in serving process, officer discipline in giving the service, easiness of customer access in application service, and the use of helping aids in service.
2. Reliability, consists of indicators: officer carefulness in serving customer, having clear standard service, officer ability in using helping aids in serving process, officer skill in using helping aids in serving process.
3. Responsiveness, consists of indicators: respon every customer who wants to get service, officer does the service fast, effectively and with exact time, and all customer complains are responded by officer.
4. Assurance, consist of indicators: officer gives guarantee of on time service, cost guarantee in service, lagality guarantee in service, and cost certainty guarantee in service.
5. Emphaty, consists of indicators: prioritize customer needs, officer serves friendly, politeness, non discriminative, and respect customer.

According to Komarudin (2014), success measurement of service practice is decided by the satisfaction level of service recipient. If the service given is as expected or beyond society expectation, society will be very satisfied. In contrast, if the service given is not as expected or does not fulfill society expectation, society will not be satisfied. This service recipient satisfaction is reached if the recipient gets service as needed and expected.

### **3.3. Bureaucracy Culture in Public Service in Indonesia**

Reformation era in Indonesia started after the fall of Soeharto regime on May 21, 1998. Reformation has six reformation agenda, namely administer justice to Soeharto and his friends, 1945 Constitution amandement, erasing Indonesian Military Forces dual function, broad regional autonomy practice, legal supremacy enforcement, and create the government that is free from Collution, Corruption and Nepotism (CCN).

Reformation also happened in government bureaucracy area. In bureaucracy reformation, Indonesian government has issued Presidential Regulation Number 81 Year 2010 on Grand Design of Bureaucracy Reformation 2010-2025 that described into road map of bureaucracy reformation 2010-2014 and 2015-2019 that decided in Minister of State Apparatus Empowerment Regulation . In those bureaucracy reformation grand design and road map, it is decided three targets of bureaucracy reformation in Indonesia that are implementation of government that is clear from CCN, improving public service quality to society, and improving capacity and accountability of bureaucracy work. Changing area in bureaucracy reformation covers organization, regulation, rules of law, apparatus source, supervision, accountability, public service, and mind set and culture set.

Public service quality improvement is one of target and area of bureaucracy reformation changing in Indonesia. Many efforts have been done by Indonesian government to improve public service quality through bureaucracy reformation by issued many regulation, simplifying service procedure, deciding Minimum Standard Service (MSS), implementation of one roof and one door service pattern, implementation of online and electronic service, etc. But the result of research conducted by Dwiyanto et al (2006) shows that public service in Indonesia in reformation era has not changed significantly. Society often complains about public service, such as slow service, complicated service procedure, unresponsive officer in handling society complain, officer mentality who wants to be served, not serving society, etc.

If we see carefully, the weaknesses in public service in Indonesia recently is resulted in mind set, culture set, mentality, attitude, and behavior of apparatus in giving public service. If we learn more, bureaucracy culture in public service cannot be seperated from historical root since traditional kingdom era in Indonesia. As stated by Santoso (1995), bureaucracy culture of Indonesian government is formed through long historical process, started from traditional kingdom era and continued to Dutch colonial era, Japanese colonial era, independence revolution era, until now. Tradition from traditional kingdom era, colonial era until now basically strengthen each other and is continuation from the previous era.

In traditional kingdom area (patrimonial bureaucracy), kingdom bureaucracy was hold by *abdi dalem*. A king through his bureaucracy that are abdi dalem command his people. By the king, those abdi dalem are given the rights of land, taking tax from people without clear limitation and regulation, that is given to the king later after they took their portion. Those *abdi dalem* later developed into social class that seperated from general society class. That patrimonial bureaucracy system cause the bureaucracy position is only the representatives of king authority. The practice of territorial power, tax, court, security, and religious, is more authoritarive than service (Kunto Wijoyo in Santoso, 1995). Kingdom bureaucracy was formed to serve king and his family needs, not to serve society. Kingdom bureaucracy is king's servant, not society's servant, so the orientation is not serving and making society prosperous, but serving and making the king and his family prosperous (Dwiyanto, 2006).

When traditional kingdom era in Indonesia ended, Dutch colonial government pointed officials from their own country as colonial bureaucracy officials. In some areas the bureaucracy officials is fully held by colonial government and in some other areas are implementing double government that besides colonial bureaucracy, there was also traditional bureaucracy. Generally native people appointed in colonial bureaucracy staff is *priyayi*. *Priyayi* has position as *ambtenaar* (*pangreh praja*) is *priyayi* that has strong position in society (Santoso, 1995). Bureaucracy of this *ambtenaar* sociologically included into *penggedhe* group that in social relationship tend to consider as "master" by *kawulo* that consist of common people (Moertono in Santoso, 1995).

Colonial government built bureaucracy into legal-rational model which is bureaucracy with orientation of discipline, honest, and respect the law known as *beambtenstaat*. *Beambtenstaat* was efficient bureaucracy machine, neat, strong focus on administration, technical skill, and economy development, so *beambtenstaat* in 1900-1942 period is the best bureaucracy in Indonesian history (Castles in Santoso, 1995). But the success of bureaucracy reformation in the form of *beambtenstaat* did not change *pangreh praja* character because the thing changed is only the relationship between *pangreh praja* with colonial authority, while in its structure---especially in its relationship with native people---still in patrimonial condition (Kartodirjo in Santoso, 1995).

Based on the explanation above, culture believed in patrimonial bureaucracy in traditional kingdom era in Indonesia was prioritize service to the king, not public service. This is reflected from *abdi dalem* term that means the maid or king servant, not the maid or public servant. In patrimonial bureaucracy, it was hard or impossible to expect public service because bureaucracy apparatus (*abdi dalem*) was king servant. Beside that, *abdi dalem* were in high social class in society, so they demand to be served and respected by society.

Then in colonial government era, bureaucracy mostly held by *priyayi*. *Priyayi* mentality was not so different from *abdi dalem* because *priyayi* were also the representative of colonial government. *Priyayi* were native people who have high social class that were usually respected and served by society that was *kawulo* (common people). That is why, like *abdi dalem*, *priyayi* orientation service was not to society but to colonial government because *priyayi* were *abdi dalem* of colonial government.

Patrimonial bureaucracy culture that is legacy from traditional kingdom era and *priyayi* bureaucracy that is legacy from colonial era, implemented during new order era (Santoso, 1995). Javanese authority concept has colored the authority of new order government. Indonesian bureaucracy attitude basically rooted from traditional culture custom of palace and kingdom in Java, still bring some of those values until now. Indonesian bureaucracy model that come from tradition, especially the one rooted from traditional Javanese kingdoms, tend to strengthen each other with values of colonial legacy (Setiawan, 1998).

When reformation era happened, mentality of patrimonial bureaucracy and *priyayi* bureaucracy did not change much. In reformation era, mentality of *abdi dalem* and *priyayi* is still believed by official and bureaucracy apparatus. This is shown in public service where official and bureaucracy apparatus still put themselves as *pangreh praja* who demand to be respected and served by society, not as *pamong praja* who serve society. With many reasons, official and bureaucracy apparatus often make the service slow and at the end ask for money, so they know the slogan "if the service can be make harder, why make it easier?" Public service reformation in the form of one door service still inhibited by bad mentality of the apparatus. Even though the service has been done in one door, but the service still can be done through "back door", so the slogan "one door service but with many windows" appear.

Apparatus mentality and attitude that complicate service cause the most sophisticated service is not useful. Online and electronic service that should reduce bureaucracy is also wasted if the apparatus still have mentality and attitude to complicate service. One of the example is in September 2016 when Risma (Mayor of Surabaya) did the unexpected supervision and get angry in Civil Registration Office Surabaya because the service of E-KTP (electronic ID card) that can be faster become more difficult, slower and complicated ([www.regional.kompas.com](http://www.regional.kompas.com)).

#### **4. Solution And Challenge**

Mentality of *abdi dalem* and *priyayi* that is still believed in bureaucracy body in reformation era is an ironic because reformation era should be followed by basic changes in bureaucracy apparatus mentality. Government has done bureaucracy reformation in many ways, but it has not shown the best result. Why all this happens?

Historically, bureaucracy in Indonesia do not have tradition to put society interest as the center in bureaucracy life. Since colonial era until new order era, society interest is always in marginal position. Non democratic political system during new order era is also weaken society bargain position in facing the government and the bureaucracy. Political control also did not run well because the base and source of authority during new order era tend to focus on government and its bureaucracy (Dwiyanto, et al, 2016). Attitude and classical way that never change until now in giving public

service is government apparatus and official arrogance. The service given always oriented from official, authoritative and government interest, not based on desire and needs of served society (Thoha, 2012).

Bureaucracy reformation is seen as the best way to change bureaucracy culture in public service. According to Tamin (2004), generally bureaucracy reformation is reforming on being reformed; the effort for legal enforcement and constitution; a change for better in morals, habits, methods, public sector reform in the effort of creating good governance and clean government, means for creating modern, democratic, and multicultural society; improvement and forming something new; unstopping perfection, etc. Bureaucracy reformation must be done continuously and simultaneously in six work that cover evaluation, regulation, control, improvement, perfection and renewal. Bureaucracy reformation object is all state practising sector in governmental area (institution, human resources apparatus, regulation, accountability, and public service). Bureaucracy reformation process is really done based on principle and existed rules of law, at least there are four target which are related to system, policy, rules of law, and moral personality.

Tuner & Hulme (1996) states that bureaucracy reformation can be done through five strategies which are restructuring, participation, human resources issue, accountability, and combination of public and private sector. But, according to Champy (Thoha, 2014), reformation and changes in government mostly stop in restructuring, reorganizing, and reengineering. Restructuring and reorganizing can be done through new institutions establishment, erasing institution, and institution merger, in local or center level.

According to the writer, bureaucracy reformation in Indonesia is only in "the skin" not in "the body" of bureaucracy. Bureaucracy reformation program only change the face of bureaucracy but it is not able to change values in the form of mind set and culture set of bureaucracy apparatus. In this case, National Mental Revolution Movement that is proclaimed by President Jokowi at the end of 2014 can become the solution to change mind set and culture set of bureaucracy apparatus. National Mental Revolution Movement covers three targets:

1. Change of mindset and paradigm of government apparatus from *priyayi* bureaucracy to bureaucracy that serves society.
2. Government organization structure must be slim, efficient, and does not duplicate function.
3. Change of working set culture that is more discipline, responsible, and prioritize togetherness and cooperation.

It seems that one of the target of National Mental Revolution Movement is the change of mind set and point of view of government apparatus from *priyayi* bureaucracy to bureaucracy that serves society. But the movement has not shown the great result yet, because *priyayi* mentality is still believed in bureaucracy institution of Indonesian government. This movement is streaked by corruption case of state officials in central area. While in regional area, more than half of local head in Indonesia are involved in corruption case.

National Mental Revolution Movement target must be targeted to society as the served party because society---realized or not---get involved in preserving *priyayi* mentality in bureaucracy institution. Apparatus mentality who wants to be served and intentionally make service difficult with the hope that society will give certain reward suitable with the society who wants to be served quickly. Koentjaraningrat (2015) states that society mentality with the term "bypass mentality" is colonial legacy that want to finish all the business fast, so they do all they need, including give a bribe to apparatus.

National Mental Revolution Movement proclaimed by Jokowi is bureaucracy reformation policy that is efficient to erase *priyayi* mentality in bureaucracy institution. But, this mental revolution will face big challenge because *priyayi* mentality has become bureaucracy culture in Indonesia for a long time. The biggest challenge comes from the internal of bureaucracy itself because mental revolution will disturb comfort zone of many official and bureaucracy apparatus who have *priyayi* mentality. They of course will keep status quo and do not want to change because the change is a threat for their comfort zone. That is why, reformation and mental change cannot be done in short time or revolutionarily, but it must be done according to the plan, program, in stages, continuously, consequently, and consistently.

To create mental revolution, strong commitment and political will are not enough, but it must be followed by political action in the form of leader example, firm and bravement, concrete mental

revolution programs, and non discrimination legal enforcement. Besides that, mental revolution as national movement must be supported by all nation components because a national movement demands participation from all parties. Mental education and character education must be held in formal education level start from early education until higher education to prepare students as the candidate of nation leader who has good mental.

## 5. Conclusion

Government main duty is giving public service. Public service become the duty of government as public service provider and become the rights of public (society) as the party that is served. Professional bureaucracy in giving qualified public service is all parties expectation. But that expectation is inhibited by priyayi bureaucracy culture that is believed in bureaucracy institution in Indonesia.

*Priyayi* bureaucracy culture in Indonesia is formed through long historical process, started from traditional kingdom era (patrimonial bureaucracy), Dutch colonial era, Japanese colonial era, independence revolution era, until now (modern bureaucracy). Tradition from traditional kingdom era, colonial era until now basically strengthen and is a continuation from the previous era. Historically bureaucracy in Indonesia does not have tradition to put public service as the center in bureaucracy life. Since colonial era until now, society interest is always in marginal position. Priyayi mentality is still believed by bureaucracy apparatus in giving public service. The solution is doing bureaucracy reformation that focus on mind set and culture set of bureaucracy apparatus through National Mental Revolution Movement, but bureaucracy reformation faces challenge from the internal of bureaucracy institution itself.

## Bibliography

### Books:

- [1]. Cresswell, John W. 2014. Research Design. Pendekatan Kualitatif, Kuantitatif, dan Mixed. Yogyakarta: Pustaka Pelajar
- [2]. Dwiyanto, Agus, dkk. 2006. Reformasi Birokrasi Publik di Indonesia. Yogyakarta: Gadjah Mada University Press
- [3]. Herdiyansyah. 2011. Kualitas Pelayanan Publik: Konsep, Dimensi, Indikator dan Implementasinya. Yogyakarta: Gava Media
- [4]. Koentjaraningrat. 2015. Kebudayaan, Mentalitas dan Pembangunan. Jakarta: PT. Gramedia Pustaka Utama
- [5]. Komarudin. 2014. Reformasi Birokrasi dan Pelayanan Publik. Jakarta: Genesindo
- [6]. Kurniawan, Agung. 2005. Transformasi Pelayanan Publik. Yogyakarta: Pembaruan
- [7]. Lukman, Sampara. 2000. Manajemen Kualitas Pelayanan. Jakarta: STIA LAN Press
- [8]. Moenir, H. A. S. 2000. Manajemen Pelayanan Publik di Indonesia. Jakarta: Bumi Aksara
- [9]. Nasution, M. N. 2000. Manajemen Mutu Terpadu (Total Quality Management). Jakarta: Ghalia Indonesia
- [10]. Ndraha, Taliziduhu. 2005. Teori Budaya Organisasi. Jakarta: Rineka Cipta
- [11]. Robbins, Stephen P. 1994. Teori Organisasi, Struktur, Desain dan Aplikasi. Jakarta: Arcan
- [12]. Santoso, Priyo Budi. 1995. Birokrasi Pemerintah Orde Baru. Jakarta: Raja Grafindo Persada
- [13]. Setiawan, Akhmad. 1998. Perilaku Birokrasi Dalam Pengaruh Paham Kekuasaan Jawa. Yogyakarta: Pustaka Pelajar
- [14]. Siagian, Sondang P. 1999. Organisasi, Kepemimpinan dan Perilaku Administrasi. Jakarta: Haji Masagung
- [15]. Sinambela, Lijan Poltak, dkk. 2014. Reformasi Pelayanan Publik: Teori, Kebijakan dan Implementasi. Jakarta: Bumi Aksara
- [16]. Suwanto, F. X. dan D. Koehartono. 2009. Budaya Organisasi: Kajian Konsep dan Implementasi. Yogyakarta: Universitas Atma Jaya
- [17]. Tamin, Feisal. 2004. Ilmu Administrasi Publik Kontemporer. Jakarta: Kencana Prenadamedia Group
- [18]. ----- . 2012. Birokrasi Pemerintah dan Kekuasaan di Indonesia. Yogyakarta: Thafa Media
- [19]. Tjiptono, Fandy & Anastasia Diana. 2001. Total Quality Management. Yogyakarta: Andi

- [20]. Turner, Mark & David Hulme. 1996. Governance, Administration & Development. Making The State Work. Connecticut: Kumarian Press

**Rules of Regulation:**

- [1]. Undang-Undang Dasar Negara Republik Indonesia Tahun 1945  
[2]. Undang-Undang Nomor 25 Tahun 2009 tentang Pelayanan Publik  
[3]. Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintah Daerah  
[4]. Peraturan Presiden Nomor 81 Tahun 2010 tentang Grand Design Reformasi Birokrasi 2010 - 2025  
[5]. Kemenpan Nomor 63/KEP/M.PAN/2003 tentang Pedoman Umum Penyelenggaraan Pelayanan Publik

**Internet**

- [1]. <http://regional.kompas.com/read/2016/09/20/23302231/ketika.risma.mengamuk.di.kantor.disdukcapil.kota.surabaya>

# Implementation of School Based Management at Hindu Education Institution (Case Study at Sma Kertya Wisata Mataram)

**Gusti Ngurah Ketut Putera**

**Abstract.** School based management has brought progress in education. Through this system the school is believed to be able to manage independently of everything with in the school as an optimization of education services. Through this system the school is believed to be able to manage independently of everything with in the school as an optimization of education services. Methodologically, this research uses qualitative design. Data were collected using technique, interview, observation and document study, and analyzed by descriptive interpretative technique. Data analysis used in this research is qualitative), asuitable analytical technique used for descriptive type is descriptive tactics through three activity lines namely 1) data reduction, data reduction begins by explaining, choosing the things that the product by focusing things that are important tothe content A data obtained from the field, so that the data that has been reduced canprovidea sharper picture of the observation results.The resultof research shows that (1) Implementation of School Based Management in SMA Kertya Wisata. The success of education in educational institutions is determined by the implementation of school management. School management can work well if the entire school system is driven bythe leader (head master) along with the board of teachers.(2) Supporting Factors and In hibitors of Implementation of School Based Management in SMA Kertya Wisata. Supporting the implementation of SBM from school planning to evaluation offacilities and infrastructure is done formally and informally. (3) The role of the Foundation in the implementation of SBM in Kertya Wisata Mataram. His role has implications on the success of schools with improvements to the welfare of existing teachers,in educational developmentin Kertya High School Tourism Mataram to educational services optimally. Yayasan Dharma Laksanain developing educational institutions from kindergarten to intermediate level has been realized well. High schools level like SMA Kertya Wisata Mataram experience very significant. Society recently participated in building SMA Kertya Wisata Mataram from funding toevaluate the quality of education services.

**Keywords** *school based management, Hindu education institution.*

## 1. Introduction

Kertya Wisata High School is the only high school owned by hindus In Mataram City even throughout the West Nusa Tenggara. It is said that because this school was founded by Parisada Hindu Dharma Indonesia of Mataram under the foundation name of “Yayasan Dharma Laksana”. The fact that happened in the field until now people outside Hindu do not want to go to school at SMA Kertya Wisata, because society assumes that school is a special school. Expectations this study of the implementation of education in SMA Kertya Wisata to be able to apply school based management (SBM) in accord ance with it is goal of school self- sufficiency as an optimization of education services.

Government Regulation (PP) No. 25, Year 1999 on Regional Autonomy (Otda) brings fresh air to the world of education, especially in the formal education environment. It is said that with the issuance of the regulation, the regions are given the authority to manage the education budget optimally, while the center only prepares a budget allocation of 20% of the total State Revenue and Expenditure Budget (APBN). Basically the school is an organization, meaning in it there is a group of people who work together in order to achieve the goals of institutions (institutions). The purpose of the institution or the institution that is engaged in education produces to produce qualified graduates

(outputs), which are human (human) products, especially related to superior and quality human products.

The achievement of the goals of a large educational institution is determined by the management of its education management system. As it is known that the principle of a management is in planning, organizing, actuating, and actuating. The four sections on which management is based are dependent on each other in their entirety. School-based management (MBS) is to provide flexibility to the school organization to manage its household optimally in managing its school management from input, process and output management, material and nonmaterial.

School-based management (school-based management) is born with several different names meaning that there is a mention as school-based governance (school-based governance), self-management school, and some call with school-based management. These terms do have an understanding with a slightly different emphasis. However, these names have the same spirit, ie the school is expected to become more independent in management management, especially in the utilization of resources owned such as human, financial, and facilities (man, money, and material).

The success of MBS in schools is greatly influenced by the managers in this case are the foundations and the influencing school citizens. On the basis of views of Lunenburg & Omstein (1991); Gomes Mejia & Balkin (2002) in Suwardani (2015: 33) note that leadership is the process of influencing others to cooperate and inspire, motivate, and direct activities to achieve shared and shared goals. In the leadership process the leader can guide, direct, influence the feelings and behaviors of others, and move his subordinates (staff of the organization) to work toward the desired goals together.

Theoretically, leadership is grouped into three approaches: nature approach, behavioral approach, and situational approach. Meaning (1) Focusing on the leader so that it is called innate theory; (2) the leader has certain traits or traits that cause him to influence his followers; such as intelligent, assertive, confident, initiative, maturity and social relationships, self-motivation and achievement drives, attitudes of human relationships; (3) leadership theory is the generalization of a leader's behavior and leadership concepts. This is done by highlighting the historical background, the causes of the emergence of leadership, the requirements of leaders, the main character of the leader, the main task and function and professional leadership ethics.

## **2. Method**

This study was designed to discuss the implementation of school-based management of Hindu educational institutions, namely SMA Kertya Wisata Mataram. To direct the path of a research required a research design. The design is an overall scheme including research programs. The study design was prepared based on the results of initial observation and serves to provide a general overview of the activities undertaken in the field (Zaenab, S.2015).

Based on this, there are three problems raised in this research, namely (1) How is the implementation of School based management at Hindu education institution SMA Kertya Mataram?, (2) What are the supporting factors and obstacles in the implementation of School Based Management Hindu at SMA Kertya Wisata Mataram?, (3) How is the role of foundation and the citizens of school to the MBS at Hindu education in stitution SMA Kertya Mataram?. Theory used to analyze the data, there are three theories are: (1) Theory of education management by Gregor Douglas, (2) The theory of social psychology by Gabriel Tarde, and (3) structural functional theory by Talcott Parson.

Based on the basic principles of data in the field there are anumber of steps data reduction activities namely; (1) make an accurate summary, (2) develop the coding category, (3) makea memory record, The purposes of the data analysis activities to sharpen, classify, directand discard the unexpressed. The meaning process of data and informationis done by researchers since the beginning of there search done.

This research was conducted at SMA Kertya Wisata Mataram. The approach used in this research is descriptive qualitative approach. The focus of this research is on the implementation of school-based management applied in Kertya Wisata Senior High School. Bogdan and Biklen in Moleong, (2007: 67) is that the qualitative approach has five characteristics, namely (1) done in the natural setting, (2) descriptive research, (3) research features process, not result, (4) use deductive abstract analysis, and (5) disclosure of meaning.

According to Bogdan and Tayler in Moleong (2007: 67), qualitative research is a research process that produces descriptive data, either in the form of written or oral words of people and

behaviors and certain objects that can be observed by researchers. Researchers observe and understand directly by looking for information from people who are able to provide valid information. In addition, there are also explanations from various sources that already exist, such as books and documents that are very relevant as a complement to the data. The data obtained were analyzed by descriptive approach and inductive way of thinking. Further Suprayogo (2001: 9) states that qualitative research aims to understand (understanding) the meaning shown in the behavior of society according to the perspective of society itself. Because the nature of understanding, research data is naturalistic, the method is inductive, and reporting is descriptive.

### **3. Discussion and Result**

These discussions and results are at the core of all previous descriptions so readers can understand the main contents of this paper.

#### ***3.1. Reasons for SMA Kertya Wisata Mataram Implement School Based Management***

Formal educational institutions are often faced with problems related to learning, ranging from the preparation of facilities and infrastructure, learning materials, goals, even to the preparation process. Implementation of school-based management programs apparently not wasted by SMA Kertya Wisata Mataram. That is, with all the limitations of the program is still run as an option to

School-based management to advance school education in Kertya Wisata Mataram is conducted for various reasons. The reasons are as follows.

1. Creating Kertya Sekolah Wisata becomes an effective school. The creation of an effective school by the citizens of the school is a convenience school to advance education at Kertya Wisata SMA in Mataram. Factors affecting the comfort or climate of the school are the relationships or attachments between the school community, the interaction between the school community, the mutual trust, and mutual respect between the school community and the community.
2. Security, sense of comfort, and discipline is the need of SMA Kertya Wisata Mataram. Security, comfort and discipline in schools need to be created so that Kertya Mataram High School students can learn in a conducive manner. In this case not only learn academic skills, but also train students to achieve non-academic things that are also very important for his life. This is done through, efforts to prevent violence in schools and realize the characteristics of the school so that it becomes a school that can compete in achieving the achievement.
3. Identify school comparative advantages. The Kertya High School (SMA) Kadya Wisata Mataram must have a feat worthy to be proud of and acknowledged by the school and community. Comparative advantage emphasizes the advantages associated with the resources provided at SMA Kertya Wisata Mataram. The use of resources needs to be accompanied by the effort to build a Kertya High School Building Mataram land is already available.
4. School community collaboration by promoting education through the implementation of management. To implement the overall MBS implementation in SMA Kertya Wisata Mataram has established a school team as an evaluation. The team is made up of principals and educators, committees, and classrooms. Principal management means principals are key in shaping school culture, driving school management to achieve educational goals. In addition, curriculum management is also implemented throughout the process of planning, organizing, implementing, and controlling the curriculum to achieve the goal of education with emphasis on efforts to improve the quality of learning. In terms of education management, curriculum management is one of the most vital management substances.

#### ***3.2. Supporting Factors and School Based Management Implementation In Kertya Wisata Mataram***

School-based management applied in Kertya Wisata High School is a follow-up of the government program in the framework of equality of education in the country. In the implementation of the principal as a driving force apply the principles of management from the planning process, organizing, leadership, to the control or evaluation.

##### ***1. Internal Support Factors in the Implementation of SBM***

Schools need to be given clear authority to define the vision, mission and educational goals that are appropriate to the needs of students and communities around the school. People's desire to advance education is very high, but in the process of implementation of course supported by the school community as an internal support so that the implementation of management can run well. Supporting SBM internally includes (1) the motivation of parents to send their children to Kertya Wisata High School, (2) school partnership with foundations, (3) having school authority and autonomy, (4) having school facilities, (5) school residents need training, and (6) community environment outside Kertya Wisata Mataram.

## *2. External Support Factors in the Implementation of SBM*

The public's expectation to advance educational institutions is not sufficiently supported by internal factors, it is also indispensable for external support. However, it remains based on and supported by the clear authority of school institutions in the development of educational programs. This includes (1) community contributions to schools, (2) an interest not to be involved outside of its core tasks, (3) confusion in responsibilities related to government regulations, and (4) difficulty coordinating with stakeholders.

## *3. Factors inhibiting the Implementation of School Based Management in Kertya High School Wisata Mataram*

The supporting components in SBM implementation by the principal will not be able to avoid the inhibiting factors. These barriers can come from teachers, learners, the family environment, or the surrounding community. Barriers are caused by deficiencies, either shortage of teachers, lack of school facilities, or lack of management. There are several factors as an obstacle in the implementation of SBM, which is as follows.

### *a. Internal Inhibiting Factors Implementation of SBM*

In the implementation of school-based management in Kertya Wisata Mataram also faced several problems, such as in various related parties must work better than before, less efficient (in the short term because one of the goals of SBM is the occurrence of educational efficiency), uneven school performance, increased staff development needs, confusion due to new roles and responsibilities, difficulties in coordination, and accountability issues. Internal inhibiting factors in the implementation of SBM in Kertya Wisata Mataram include (1) the adoption of SBM only adopted the model, without the creative efforts of the schoolchildren, (2) the principal works on his own agenda regardless of the aspirations of the school board, (3) decision making centered on one side, and tends to be arbitrary, (4) lack of available educators and education staff, and (5) less professional curriculum control. The researcher's interview with the principal related obstacles is internally as follows. "So this ... ..pak, we as principals in implementing the MBS really concentrate on the school, how this school can go forward with the implementation of manajemennya. Well ... so that the work we do in achieving the progress must have an internal obstacle, for example the lack of available educators in accordance with its potential, only some educators who teach are in accordance with the scholarship. Then the use of IT although it is available only a few computers and Wifi, but in applying data is still overwhelmed. This is a very fundamental internal barrier, let alone now a global age. Well despite such circumstances, learning activities continue to run as usual.

### *b. External Barrier Factors Implementation of SBM*

The inhibiting factor in the implementation of school-based management in Kertya Wisata Mataram is the community as a brainware that still needs to increase awareness in the management of school management. Good school management means the principal is able to move the entire school system. The movement of school management to advance its education can not be separated from obstacles. (2) the privatization of the education sector and the dominant foundations of the school, and (3) the use of information technology (IT) as a means of knowledge.

### *c. Implications of School-Based Management to Educational Quotes.*

The implications for the process of education management in Kertya High School Wisata Mataram require good cooperation. This can be done by improving the quality of education management. Improving the quality of education is not a light task because it deals not only with technical management, but also includes complex and complex issues. Thus it is demanded better management of education on the management of education in Kertya High School Wisata Mataram. The implications of the education management process are done through the following matters.

Implications for educational institutions in Kertya High School Wisata Mataram Implementation of school-based management is a process to advance education in Kertya High School Tourism Mataram. The division of tasks and occupations is the basis of the school organization in accordance with the structure adopted. That is, whether it is staff, employees, teachers, or principals.

The division of school work to the school community will result in regulatory or procedural procedures and factors related to the school organization. Everything is needed for planning. School organizations are wanted efficiently with various dimensions. School organizations require working relationships in accordance with the division of labor with all responsibilities and responsibilities to achieve the quality of education (Nurkholis. 2003).

#### *2. Implications for school relationships with communities.*

Schools with the community have been working together to build education in Kertya Wisata High School. In essence it is a very instrumental tool in fostering and developing the growth of learners in school. In this case the school as a social system is an integral part of the larger social system, ie society. Therefore, the school as an educational vehicle is obliged to provide information about community goals, programs, needs, and circumstances.

#### *3. Implications for educators and learners*

The educator is the waiter for the students to grow the students and make them more mature. In this context, educators at Kertya Wisata High School are expected to have faith, well-established scholarship, noble character, and noble personality to carry out learning in Kertya Wisata High School. In addition, it can also work more increased and effective.

In carrying out the tasks of educators or teachers are expected to be more creative and able to motivate students to express themselves in expressing their opinions clearly and polite, in addition, as well as able to think logically, creatively, and innovative in making decisions. In non-academic activities the school always involves the community and at the same time the promotion of schools to encompass students on every school of teachings.

Learners are able to show significant progress. It was proven that proven learners who go to SMA Kertya Wisata Mataram increase every year. The independence of learners in learning has increased. This is evident from the results of study through annual reports. In addition, in sports and religious arts students achieve perestasi at the provincial and district levels in 2015/2016 ie at the performance of Utsawa Dharma Gita provincial level. Other achievements, namely in the field of sports on Porda NTB achieve pencak silat achievement.

Implications of the Foundation in supporting the implementation of SBM in Kertya Wisata High School. The Foundation Dharma Laksana is an organization concerned and concerned in education Nasikun (2003). Concern is realized by establishing educational institutions from the level of kindergarten to high school level (SMA). The educational institution is a very significant contribution to the NTB region. High school has been pioneered since 1990. Kertya Mataram High School in the education sector in the city of Mataram, actually quite positive and useful for Hindus especially and generally for the region and the people of West Nusa Tenggara.

SMA Kertya Wisata Mataram is the only middle school that is fully managed by Hindus so that the nuance of Hindu culture is very dominant. However, advancing education to nourish the nation's children will not hurt. Thus, the development of education to create human resources is the hope of society.

#### *4. Implications of school residents in supporting school-based management in Kertya Wisata Wisata Mataram*

Personally, besides teachers, school residents are also expected by the principal to continue to work together and improve professionalism through education for educators. In addition, also and follow the activities or training related to the world of education. Teacher performance should be improved as there is an increase in professional allowance called teacher certification. For teachers of private schools for the city and the region are given professional allowance. These professional allowances will have an impact on quality performance (Mulyasa, E. 2009).

#### *5. Implications of community supporters of school-based management in Kertya Wisata Wisata Mataram*

The success of education is the support of all the elements, be they school and community residents. Cooperation in building education is actually the hope of society. Progress in the field of education is a form as a manifestation of human resources availability. Education is very important for

people's lives and regional development. This is in accordance with pasal 34, the 1945 Constitution that every citizen has the right to education, without exception. Educational institutions can succeed in developing education, resulting from the implementation of school management. The success was due to cooperation from various schools.

#### **4. Findings of Research Results**

##### **4.1. Theoretical Findings**

Based on the results of analysis, it is known that the implementation of school-based management strategies developed in Kertya High School Wisata Mataram, mainly related to the management of human resources and the process of education. It turned out to have been done with the cooperation between the school and the surrounding community.

This context can be seen from the preparation of the planning to the techniques of evaluation. In terms of leadership the principal seems to approach his subordinates based on the psychological element (psychological). It is shown by the hamioranya approach that is familial.

In organizing and placing someone within the school's organizational structure, it seems that the approach of functional structural theory is always put forward. This is evident in terms of choosing representatives and guardians based on the seniority of experience, and academic ability.

##### **4.2. Temuan Empirik**

Implementation of school-based management in Kertya High School Tourism Mataram has developed significantly in previous years, ie students entering for Kertya Wisata High School in increasing numbers. In addition, several achievements, both through art and sport competitions have been achieved. Some well-structured, meticulous, and conceptualized programs will have significant obstacles when they want to be implemented without support (Zaenab, S. 2012).

This phenomenon makes school-based management in Kertya Wisata Mataram more designed, but some have not been able to be operationalized because it is related to the means. Finally, the management is always oriented to the existing infrastructure strength at that time. As a result, management travel is more tentative and situational (Nanang, 2004).

This condition is very influential to the process of learning and improving the quality of education. It is said that currently Kertya Wisata High School has implemented school-based management as an effort to improve the quality of students. The effort is certainly still close to the expectation, while the financial factor that became the main basis of the implementation of a quality education hall can not be fully fulfilled by the Dharma Laksana Foundation.

So far, the city / district government has played a more monitoring and evaluation role. In other words the central government has not provided much assistance related to the procurement of facilities and infrastructure. The only thing that has been done is to provide financial support for poor students in the form of BOS.

The specific management implications are interrelated in forming a unified system to advance education (Amrin, 2013). Basically organizing Kertya Wisata High School is a process of division of labor vertically and horizontally. The division is vertically based on the determination of the power line by the principal and determines the levels that make up the organization upright. In addition, Agus Dharma, (2003) also to facilitate the flow of communication in advancing education in Kertya High School Tourism Mataram. The division of labor horizontally is based on specialization of work. The basic assumption underlying the division of flat-line work is subordinate by making each worker's tasks detailed for teachers who teach according to their educational qualifications. In this case the school as a social system is an integral part of the larger social system, ie society. Therefore, the school is obliged to provide information about community goals, programs, needs, and circumstances (Ghani, 2008).

#### **5. Conclusion**

The conclusion in the research is the improvement of the implementation of school-based management in Kertya Wisata Mataram education synchronization between the school council and the class forum developer with the school side. 1. For foundation managers, the results of this study are expected to serve as a contribution to establish the field of school-based management in management education that should be more professional. This is important because Hindu education is a place of religious education to increase religious values. 2. Conceptually the results of this study are

expected to enrich the theory of humanistic and sociology and further study materials. In addition, sought and developed alternative patterns and educational services in school-based management that has not been maximally implemented.3. The researcher is then expected to carry out further research with different contexts, such as (a) the performance benefits of educators in providing services in the community, particularly about the readiness of the qualification requirements of advanced education to meet the S1 qualifications of S1 lighting and the like; (b) and development of human resources by the more professional Ministry of Religious Affairs of the Province of West Nusa Tenggara, (c) undertake a more in-depth review of the focus on other field cases to enrich the research findings already achieved. Thus, a more in-depth assessment of the implementation of school-based management can be obtained. Kertya Wisata High School as a partner in the Ministry of Religion West Nusa Tenggara Province quality and quality in the future to West Nusa Tenggara compete

## References

- [1]. Abdullah,. *The Relation Between School Based Management and Principals Effective School towards School Improvement*. Journal of Universiti Sains Malaysia: School of Educational Studies.
- [2]. Abu Duhou, I. 2002. *Manajemen Berbasis Sekolah*. Terjemahan Noryamin Aini, dkk. Jakarta: Logos.
- [3]. Agus Dharma, 2003. *Manajemen Berbasis Sekolah Belajar dari pengalaman orang lain*. Penerbit Rosda Karya.
- [4]. Akinola, O. B. 2012. *School Based Management Committees: The Nigerian Experience*. The International Journal of Learning, Volume 16, Issue 8.
- [5]. Amrin, 2013. *Konsep Manajemen Mutu Pendidikan Sekolah Dasar dan Menengah*, Jakarta: Rineka Cipta.
- [6]. Arifin, I. 1998. *Rancang Bangun Studi Kasus: Kasus Tunggal, Multi Situs, dan Multi Kasus dalam Penelitian Kualitatif*. Malang: Universitas Negeri Malang, bahan ajar untuk mahasiswa.
- [7]. Arikunto, S. 2002. *Edisi ke-lima. Prosedur Penelitian*. Jakarta : Rineka Cipta
- [8]. Bogdan, R. C & Biklen, S.K. 1982. *Qualitative Research for Education: An Intruduction to Theory and Methods*. Boston: Allyn and Bacin. Inc.
- [9]. Bogdan, R. C., & Biklen, S.K. 1992. *Qualitative Research*. Needham Height, MA: Alln & Bacon.
- [10]. Departemen Pendidikan Nasional. 2001. *Manajemen Peningkatan Mutu Berbasis Sekolah*. Jakarta: Depdiknas Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Sekolah Lanjutan Tingkat Pertama.
- [11]. Fatah, Nanang. 2004. *Konsep Manajemen Berbasis Sekolah (MBS) dan Dewan Sekolah*. Bandung: Pustaka Bani Quraisy.
- [12]. Kementerian Pendidikan dan Kebudayaan. 2013. *Buku I Panduan MBS di Sekolah*. Jakarta: 2013.
- [13]. Lincoln & Guba 1985. *Metodologi Penelitian Kualitatif*. Bandung: Remaja Rosda Karya.
- [14]. Miles, M. B., & Huberman, A.M. Tanpa Tahun. *Analisis Data Kualitatif*. Alih bahasa Rohidi, T. R. 1992 Jakarta: UI Press.
- [15]. Mulyasa, E. 2009. *Manajemen Berbasis Sekolah*. Bandung: PT Remaja Rosdakarya.
- [16]. Mulyasa, E. 2006. *Manajemen Berbasis Sekolah*. Bandung: Rosda
- [17]. Nasikun. 2003. *Sistem Sosial Indonesia*. Jakarta: PT. Raja Raja Grafindo Persada.
- [18]. Nurkholis. 2003. *Manajemen Berbasis Sekolah*. Jakarta: PT Gramedia Widiasarana Indonesia.
- [19]. *Pemerintah Nomor 19 Tahun 2005 tentang Standar Nasional Pendidikan*. 2007.
- [20]. *Peraturan Pemerintah Nomor 19 Tahun 2005 Tentang Standar Nasional Pendidikan*.
- [21]. *Postmodernisme dan Studi Kultural*. Jakarta: Penerbit Buku Kompas.
- [22]. Riduwan, 2008. *Manajemen Sekolah*. Bandung; Alfabeta.
- [23]. Riyanto, Y. 2003. *Penelitian Kualitatif*. SIC. Surabaya.
- [24]. Sujana, dkk. 2002. *Manajemen Berbasis Sekolah (Edisi I)*. Tangerang: Universitas Terbuka.
- [25]. Supriono, 2015. *Strategi Implementasi Manajemen Berbasis Sekolah pada tiga Sekolah Dasar, MI (studi multikases pada tiga sekolah SDN Sedatigede 2, MI Khoirul Huda, SD Hang Tuah 10 Sidorajo)*. Disertasi yang tidak dipublikasikan di Universitas Negeri Malang Jawa Timur.

- [26]. Titi I Made, 1996. *Veda Sabda Suci* Pedoman Praktis Kehidupan. Penerbit Paramita Surabaya.
- [27]. Undang Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional.
- [28]. *Undang-undang No 20 Tahun 2003. Tentang Sistem Sekolah Nasional*. Bandung: Citra Umbara.
- [29]. *Undang-Undang No. 14 Tahun 2005. Tentang Guru dan Dosen*, (Online). (<http://advokad-rgmitra.com/>,pdf), diakses 13 Januari 2011.
- [30]. Undang-Undang Nomor 32 Tahun 2004. Tentang Desentralisasi Pengelolaan Pendidikan.
- [31]. *Undang-undang Otonomi Daerah 1999: UU No. 22 Tahun 1999 tentang Pemerintah Daerah, UU No. 25 Tahun 1999 tentang Perimbangan Keuangan antara Pemerintah Pusat dan Daerah, UU No. 28 Tahun 1999 tentang Penyelenggara Negara yang Bersih dan Bebas KKN*. Jakarta: Restu Agung.
- [32]. Volansky, A. 2003. *School-Based Management: An International Perspective*. Jerusalem: Publication Department, Ministry of Education.
- [33]. Yin. R.K. 1996. *Studi Kasus: Desain dan Metode, Terjemahan oleh M. Djauzi Mudzakir*. Jakarta: PT Raja Grafindo Persada.
- [34]. Zaenab, S. 2012 Manajemen Sumber Daya Manusia pada tiga PAUD di Kota Mataram (Studi Kasus PAUD Rinjani). **Disertasi** tidak di Publikasikan Universitas Negeri Malang (UNM) Jawa Timur.
- [35]. Zaenab, S.2015. *Metodologi Penelitian Sekolah Kualitatif perspektif Kekinian*. Penerbit Selaras Malang Jawa Timur.

# Speech Directives in Novel *Harmony in Tanya Tanya (?)* By Melvy Yendra & Andriyati

I Ketut Suar Adnyana and Wadu Suryani

Indonesian and Local Language Department  
Faculty of Teacher Training and Education, Dwijendra University  
Address Jalan Kamboja No 17 Denpasar, Bali, Indonesia  
Email: suara6382@gmail.com, ooppssainy@gmail.com, wadoesuryani@yahoo.co.id

**Abstract.** This research is a qualitative research. The study focused on acting in the directive directive in Harmony's novel in *Tanda Tanya (?)* By Melvy Yendra and Andriyati. The purpose of the study was to describe the form of speech acting directive in the novel "*Harmony In Tanda Tanya (?)*" The work of Melvy Yendra & Andriyati. The approach used in this research is pragmatic approach. The source of this research data is novel "*Harmony In Tanya Tanya (?)*" The work of Melvy Yendra & Andriyati. The research data is written data in the form of conversation data between characters that contain act directive speech . The data were excavated by the method of record and analyzed by using qualitative descriptive method. Based on the results of the study can be determined that the form of speech acts directive contained in the novel is form orders, suggestions , requests, prohibitions, granting permits, inquires and invitations .

**Keywords :** *Speech acts, Directive*

## 1. Background

Novel is a kind of prose. The reader's understanding of a novel depends on the way the reader understands the novel dialogues. That understanding depends on the reader's ability to understand the context of the conversation . It is very different from the daily dialogue . The meaning of dialogue is largely determined by the context of the situation in which the dialogue takes place. In addition, the meaning of the content of the conversation is also determined by the gestures of speech participants so as to facilitate the speech participants to interpret the speeches delivered by the participants of the speech.

Kridalaksana, (2008: 24) states that bahasa is a sound symbol system used by members of a society to cooperate and interact . Meaning of a conversation can be interpreted not only based on utterances produced by the participants, but the meaning is also determined by the linguistic strategies used by participant. According to Spencer and Oatey (2001: 2) the purpose of communication can be achieved if the communication participants can mutually transform information and can maintain mutual social relations. This is in line with Brown and Yule's opinion (in Spencer and Oatey (2001: 2) the function of language as a function of transactional and interactional functions. Transactional function emphasizes on how information is conveyed accurately so that what is meant by the speaker is well received by the speaker. The function of interactional emphasis on how the communication participants are mutually maintain social relationships so that the process of communications go well.

In this transactional function the speaker is expected to be able to interpret the level of text and context (Fairclough, 1989: 142).. At this stage the participants decode the sounds so that they are understood the meaning of collection of words, phrases and sentences. The next step is the meaning utterance . Speakers determine the meaning of the utterances by combining the meanings of each word, grammatical information, capturing the hidden meaning behind the sentences and in the end the speech participants can grasp the meaning of the whole utterance. Purwo (1990: 16) states that utterance is a sentence expression in the real context. How the language is spoken in the context of a real situation. The studies are the pragmatics domain.

Understanding the dialogues in the novel requires carefulness of the reader. Readers are not only able to interpret the dialogues delivered by each character in written form but the reader must also interpret the meaning of the dialogue implicitly conveyed. Based on the authors' observations, no

ovel " *Harmony In Taqda Tanya (?)* " By Melvy Yendra & Andriyati contains implicitly implied meanings and use various sentence forms. The purpose of this study determines the directive speech acts in this novel.

Research on speech acts directive has been done by Muhartoyo and Kristani (2013). The source of the data is the conversation contained in the movie "Sleeping Beauty". The purpose of the study was to identify speech acts in the film by calculating the percentage of speech act directive. This study used qualitative methods with data obtained from watching movies, and analyzing the dialogue in the film. The results of the study shows that ordering directive is the most commonly used (21.6%) and directive invitation is the least used (0.7%).

The second study, conducted by Ardianto (2013). Ardianto examines the speech acts of teacher's directive in the discourse of deaf children class interaction. There are two findings of this study. First, The directive speech acts are realized in the declarative mode, interrogative mode, and imperative mode. Second, the meanings of directive speech acts are governing, requesting, banning, allowing, suggesting, expecting, and inviting. Third, the strategy for the realization of speech acts of teacher directive in the discourse of the deaf children's class interaction includes direct strategy and indirect strategy. The direct use of the strategy is done by the teacher to govern, request, ban, allow, suggest, expect, and reprimand. In other cases, indirect strategies are also used to express the directive functions of governing, soliciting, banning, reprimanding, and fishing. In other words, the form of directive representing a particular directive function is realized by the teacher in various ways according to the context behind the classroom conversation discourse and the needs and objectives to be achieved in classroom communication.

## 2. Research methods

This type of research is qualitative research. The data are collected by analyzing every dialog contained in the novel. The study focused on the forms of the directive speech contained in the novel. The results of the review are recorded in the data card. Furthermore, the dialogue is analyzed by qualitative descriptive method. The results of the study are presented in an informal way by interpreting the directive speech acts contained in the novel " Inner Harmony Question (?) " By Melvy Yendra & Andriyati

## 3. Discussion

Speech is one form of strategy in communicating. Understanding of the strategy is influenced by the culture and values held by the community. One can use direct directive acts to ask someone to do something but some people use another strategy. The use of directive speech acts on the novel "Harmony In Tanda Tanya (?) " By Melvy Yendra & Andriyati very varied. The following is the use of speech acts directive on the novel.

### 3.1. Requestions

It means that the speaker requests the hearer to do an act as shown in the conversation 1.

#### Conversation 1

Hendra : "Baiklah...Tapi kamu belum menjawab dan menerima bunga dariku ya, Nuk."

'Well ... But you have not answered and received my desire.Nuk.'

Menuk : Apa Mas, Menuk pura-pura tidak mendengar.

"What *Mas*? Menuk pretends not to hear.

Hendra : "Dengarkan sekali lagi Nuk, terimalah cintaku Nuk..."

Listen once again Nuk, accept my love Nuk ...'(p. 51)

The utterances are classified as a form of request speech acts. This can be examined from the phrase "Terimalah cintaku Nuk." Speakers express their desires in order to accept his desire. The use of particle *-lah* give the politeness effect of the speech. Goffman (1981) states that a person in communication should pay attention to the concept of "face" or called interpersonal relationships. Hendra asks Menuk to accept his love by not insisting. This is done by Hendra to anticipate face threat against him. If Menuk rejects his love, Hendra will not feel disappointment.

The following conversation is also a form of follow tu r directive request

### Conversation 2

- Commander : “Kamu baru bergabung, sudah bertindak semena-mena.”  
‘You are just joining just have been acting arbitrarily’
- Soleh : “ Iya Mas, saya minta maaf.”  
‘Yes, *Mas*, I’m sorry,
- Commander : “ Maaf saja tidak cukup. Berdasarkan peraturan kamu akan diberi sanksi.”  
‘Sorry not enough. Based on the rules that apply here, you will get sanction. ‘(p: 316)

In the conversation above the requesting function is used by Soleh to apologize to his commander. The commander had actually forgiven Soleh but the commander still sanctioned Soleh. Wouk (2006) states that apology is strongly influenced by the culture of society. The results of the study conducted Adnyana (2012) there are two ways to apologize, directly and indirectly. Apology is directly done by saying "I am asking for forgiveness" as Soleh did in the dialogue. An indirect apology can be done using a silent strategy.

### 3.2 *Advisories*

A directive speech act with suggested functions can be analyzed in conversation three as below.

### Conversation 3

- Fatimah : “ Jika kamu dan Soleh setuju, tidak ada salahnya jika kalian bertunangan dulu”  
‘If you and Soleh are agree, it is better to you to get engaged ...’
- Menuk : “ Apa ? Ibu, Menuk belum siap...”  
‘What Mom ? Menuk has not been ready ... ‘
- Fatimah : “ Ini untuk menjaga relasi keluarga kita dengan keluarga Rahma. Nuk. Mereka telah banyak membantu keluarga kita”  
‘This is for the sake of our relation with the family of Mr. Rahma, Nuk. They have helped us so much.’(P. 66)

In conversation 3 is a suggestion from Fatimah ( Menuk’s mother) in order to Menuk soon engaged to Soleh. Fatimah did not use a coercive method. Fatima only suggested Menuk. This is done so that Menuk does not feel forced to get engaged. The suggestion Fatimah used to save her face. If Menuk refused, Fatimah did not feel disappointed. The Fatimah’s suggestions are not fulfilled by Menuk because Menuk feel not ready to get engaged. The rejection of the suggestion did not make Fatimah stop to suggest Menuk. Fatimah argues that by getting engaged, these two families will keep their relationship. According to Scollon and Scollon (2001), an order that does not give a requirement for those who are ordered to do so is a command that has a degree of decency. The speaker does not feel compelled to follow what the other person wants. Fatimah chose a directive form with the function of suggesting in order to Menuk don not compel to fulfill Fatimah's wishes.

Suggestions are usually non-binding. A speaker can give advice in the hope that his opponent should follow his advice. The suggestion should not be accepted by the opponent .

### Conversation 4

- Fatimah : “ Sebaiknya kamu tidak usah terlalu dekat dengan Hendra.”  
‘ You better not to get too close to Hendra’
- Menuk : “Maksud Ibu? Menuk dan Hendra sama sekali tidak dekat kok.”  
‘You mean, Mother? Menuk and Hendra is not close, Mother ... ‘(p. 63)

Fatimah suggested Menuk is not too close to Hendra. Fatimah suggested Menuk by using the word *sebaiknya* ‘should’. The use of words *should be* a form of advice that should not be followed. Fatimah gave alternative choice to the Menuk. It depends on whether or not Menuk will obey.

### 3.3. *Requirements*

Allan (1986: 199) states that the requirements aim to ask someone to do something. One form of requirement is an order as the conversation bellow.

#### Conversation 5

Miranda : ” Mas! Mas! Duh, bagaiman sih. Tunggu dulu! Jangan pukul dia. Mas ini salah paham.”

‘Mas! Mas! Duh, how the hell! Wait a minute! Don not hit this man. This is a misunderstanding’

Sutradara (director) : “Cut! Cut! Sialan! Tolong singkirkan orang itu dari sana! Joni ? Mau gue pecat lu sekarang !”

‘Cut! Cut! Cut! Shit! Please get rid of that guy from there! Joni? You want me to fire you?’ (P. 86)

This conversation takes place on shooting area. At the time of filming there was a man who wanted to rape a woman. Surya beat the man. Seeing the incident Miranda tried to intervene by saying that there was a misunderstanding. The director asks the crew to get rid of the man by saying *Tolong singkirkan orang itu dari sana*. ‘Please get rid of that person from there ‘ Use a word of *tolong* to refine the command so that the ruled does not feel that he is being governed. According to Spencer and Oatey (2001: 22), the choice of strategy gives the effect of politeness to the command. The use of the word please by the director because the command is not yet clear to whom the order is addressed.. Finally the director ordered Joni to get rid of the man. The order given by the director is coercive and threatening.

#### 3.4. Prohibition

Prohibition are a ban (Allan 1986: 199) Prohibition which the speaker told his opponent not to do something. The use of restrictions can be analyse in the following conversations.

#### Conversation 6

Miranda : ” Mas! Mas! Duh, bagaiman sih. Tunggu dulu! Jangan pukul dia. Mas ini salah paham.”

‘Mas! Mas! Duh, how the hell! Wait a minute! Don not hit this man. This is a misunderstanding’

Sutradara (director) : “Cut! Cut! Sialan! Tolong singkirkan orang itu dari sana! Joni ? Mau gue pecat lu sekarang !”

‘Cut! Cut! Cut! Shit! Please get rid of that guy from there! Joni? You want me to fire you?’ (P. 86)

As explained earlier, Miranda forbids Surya to hit the man by saying *Jangan memukul pria itu* ‘ Do not hit the man’ The word *jangan* ‘don not’ is a form of prohibition. Miranda forbid Surya to hit the man because of misunderstandings between them.

#### 3.5. Permissition

Permissition means that the speaker permits the hearer/ addressee to do an act. Permission permissions actions can be seen in the following data:

#### Conversation 7

Sun : “Saya .. Saya ingin main sinetron, Mas.”

‘I ... I want to play role in *sinetron*, Mas .. ‘

Meng : “Sudah pernah jadi figuran sebelumnya?”

‘Have you ever been an extras before?’

Sun : “Oh , belum Mas”

‘Oh, not yet, Mas’

Meng : “Ya udah.”

‘Ok’

This conversations take place in the filming location. Surya wants to play *sinetron*. His desire tell to the the director (Meng). Although Surya has never played role in *sinetron*, but Meng gave permission to Surya.

The following conversation is a conditional permissive form. This means that the speaker gives permission to the addressee with requirement

#### Conversation 8

- Abi : “Bu, Abi boleh ikut Om Surya?”  
‘Mom, Abi may come with uncle Surya?’
- Rika : “Apakah kamu bisa pulang sendirian?”  
‘Can you go home by yourself?’
- Abi : “Om Surya akan menemani Abi ke rumah.”  
‘Uncle Surya will accompany me to back home’
- Rika : “Ya sudah. Jangan nakal di sana.”  
‘It is Ok but do not be naughty’ (p : 282)

Abi expressed his desire to go to the house of Ustadz Wahyu with Surya. Rika allowed Abi but Abi should not be naughty. The permission given by Rika to her child is binding. Abi must not violate the requirements of his mother.

#### 3.6. Questions

It means that the speakers questions the hearer/ addressee to get information.

#### Conversation 9

- Surya : “Mbak, saya mau tanya tapi jangan tersinggung ya.”  
‘Mbak, I want to ask, but no offense.’
- Rika : “Tergantung pertanyaan kamu, Ayo gak usah takut.”  
‘Depending on your question, come on, do not be afraid’
- Surya : “Mmm... Mbak beragama kristen?”  
‘ Mmm ... Mbak is christian ?’ (P. 12)

Surya uses a question with the aim to obtain information from Rika. Surya stated clearly that he wanted to ask something to Rika. Surya asks Rika not to be offended by his question. Rika invites Surya to ask. Surya ask to Rika to get information about the religion of Rika. Asking question about the religion of someone is a sensitive issue. Therefore, Surya asks Rika for permission to question about it.

#### 3.7. Invitation

Invitation is a speech act with the aim of inviting someone to attend an event like the following conversation bellow.

#### Conversation 11

- Surya : “ Oh ya, nanti malam jangan lupa ya. Ada acara peresmian pasar kita oleh Pak Camat. Sudah tahu kan?”  
‘Oh, yes, tonight do not forget it. There is our market opening ceremony by Bapak Camat . You already know, right?’
- Menek : “Ya Mas. Saya sudah mendapat undangan langsung dari Pak Camat  
‘Yes, Mas, I have received an invitation directly from Bapak Camat., (P: 342)

The invitation form in the above conversation is done in two ways. First, Surya reminded Menek to attend the inauguration of the market. Surya is actually still doubt whether the Menek has got an invitation. These doubts can be analyzed from the questions conveyed by Surya to the Menek “ sudah tahu kan ? ‘ you have already known?

#### 4. Conclusion

Based on the analyse to the directive speech acts in the novel "Harmoni Dalam Tanda Tanya (?) " by Melvy Yendra & Andriyati. There are seven kinds of directive speech acts namely requests, advisories, requirements, prohibition,permissions questions, and invitations.

#### Bibliography

- [1]. Adnyana, I.K.S. (2012). Tuturan masyarakat matrilineal (suku Tetun) Belu, Nusa Tenggara Timur (disertasi). Denpasar: Program Studi Linguistik, Program Pascasarjana Universitas Udayana.

- [2]. Allan, Keith. 1986. *Linguistic Meaning* (volume two). London: Routledge & Kegan Paul plc.
- [3]. Ardianto. 2013. *Litera*. Volume 12. Nomor . Halaman 11.
- [4]. Fairclough, N. 1989. *Language and Power*. London and New York: Longman.
- [5]. Fairclough, N. 1992. *Discourse and Social Change*. Cambridge: Polite Press
- [6]. Fairclough, N. 1995. *Critical Discourse Analysis: The Study of Language*. London and New York: Longman.
- [7]. Goffman. 1981. *Form of Talk*. Philadelphia: University of Pennsylvania Press.
- [8]. Kridalaksana, Harimurti. 2008. *Kamus Linguistik*. Jakarta: PT Gramedia Pustaka Utama.
- [9]. Muhartoyo, Keilly Kritani. 2013. *Humaniora*. Vol 4. Halaman 950.
- [10]. Purwo, Bambang Kuswanti. 1990. *Pragmatik dan Pengajaran Bahasa*. Yogyakarta: Kanisius.
- [11]. Scollon, R, Scollon, Suzanne Wong. *Intercultural Communication*. Massachusetts: Blackwell Publishers.
- [12]. Spencer, H and Oatey. 2001. *Culturally Speaking: Managing Rapport through Talk across Culture*.
- [13]. Wouk, Fay. 2006. Strategies of Apologizing in Lombok Indonesia dalam *Journal of Politeness Research* Vol. 2, 277-311

# The Role of Religious Harmony Forum in Keeping Inter-Religious Harmony Ahead of Local Elections Simultaneously in Bali

I Wayan Kotaniartha

Communication Studies Program Study, The Faculty of Communication  
University Dwijendra Denpasar  
E-mail : wayankotaniartha@gmail.com

**Abstract.** The general election of regional heads, namely the Governor, Regents and Mayors is one of democratic development in the reform era. The elections simultaneously in 2018 in Indonesia and in Bali in particular is a manifestation of democracy and is a national agenda that became the essence of the state in Indonesia. One potential disruption in the election of regional heads in this political year is the disruption of interfaith harmony as a result of the strengthening of political tension during the political campaign. Without the anticipation of religious conflict, it will disrupt democracy and endanger the existence of the Indonesian nation. All components of society have responsibilities and contribute to the successful elections of regional heads simultaneously. In Bali Province the role of Forum for Harmony of Religious (FKUB) is very important. Based on the research result, it is known that in maintaining inter-religious harmony before the elections simultaneously, the FKUB of Bali Province has performed several roles as follows: (1) conducting peace dialogue among religious believers in FKUB in Bali Province (2) Participating in socializing the provisions of law regulation election (3) Provide political education with a religious approach (4) Coordinate with the government in Bali to keep the spirit of nationality in welcoming the local elections in Bali Province (5) undertake joint social service activities to give vibration peace of religious antagonists.

**Keywords:** *Role, FKUB, Harmony among religious believers, PILKADA*

## 1. Introduction

The era of Indonesian democracy is now colored by the holding of Regional Head Election (Pilkada) simultaneously on 27 June 2018. There are 171 regions that will choose the leader. Of the 34 provinces in Indonesia, there are 17 of them will hold elections, followed by 39 cities and 115 districts. The simultaneous pilkada system is expected to have a positive impact on Indonesia's democratic system. This moment will be a good time for the community to choose a regional head who certainly has the capability, integrity and quality to advance their respective regions.

A strategic national political agenda that has broad governance and social aspects with all its consequences for the future of Indonesia's political system is the Implementation of the Regional Head Election (Pilkada) simultaneously. Not only to pursue the target of candidacy of nomination, campaign dynamics, and its inauguration, but also its journey with the dynamics in the region with the central development agenda in order to achieve the target with maximum results (Dahlan, Thaib, 1989: 37).

Pilkada in Indonesia is a form of implementation as a democracy. Literally democracy comes from the Greek language, the word "demos" which means the people and "kratein" which means government. While in term, democracy is the foundation of state life that puts the people in a position of power (governmentor role by people) so that in the last level the people give the provisions about their life, including in assessing state policy, because the policy determines the people's life. Democracy can be justified as government of, by, and for the people (Bagir Manan, 2003: 11).

There are two approaches to democracy: the normative approach and the empirical approach. The normative approach emphasizes the basic idea of democracy: sovereignty is in the hands of the people and hence governance is organized from, by, and for the people. In its development, the idea of the people's sovereignty is totally opposed, the people are also difficult to collect for the administration of daily government. Hence the idea of a concrete democracy arose within the

representative institutions, both executive, legislative and judicial branches whose members were elected from political parties or individuals as an aggregation of the interests of the people. While the empirical approach emphasizes the realization of democracy in political life as a set of procedures that govern the people to vote, seize and hold accountable representatives in representative institutions. These representatives then make and run public decisions.

Anders Uhlin points out the existence of two different approaches to the concept of democracy, namely as a goal and as a label for the existing political system. Normative theory deals with democracy as a goal (prescriptions of how democracy should be), while empirical theories pertain to the existing political system (a description of what democracy is now). (in Rofik Suhud 1998: 33).

Franz Magnis Suseno in examining the basic notions of democracy, distinguishing between what he calls "political ethical studies" on the one hand and "political discourse" on the other. According to him, "political discourse" can be interpreted as applying direct judgments, criticisms and demands to political realities aimed at assessing, influencing, defending or changing circumstances within the state and responding directly to the arguments and legitimacy proposed by various actors on the political stage. While the study of "political ethics" includes the study of philosophy whose object is the principles as a basis to be able to question the terms, consistency and implications of the question of political discourse in terms of ethical principles. In relation to democracy in terms of political ethics, democratic states have five clusters of essential characteristics, namely: the rule of law; the principle of real community control over the government; the principle of representation through elected representatives through free elections; principle of majority; and the principle of guarantees of democratic rights (Franz Magnis Suzeno 1997: 87-92) Whereas democratic states linked to political discourse have five elements: participation, in which people are involved in political decision-making; a contest equalizing among the people; the degree of liberation and freedom guaranteed to or by the people; the existence of a representative system; and one electoral system.

The constitutional democracy applied in Indonesia, is the idea that a democratic government is a government that is limited in its power and does not act tyrant against its citizens. The limitation of the power of government is embodied in the constitution which is made on the basis of democratic procedure so often referred to as constitutional government. The elections of the Governor and Vice Governor, Regent and Deputy Regent, and Mayor and Vice Mayor, respectively, are the implementation of the people's sovereignty in the provinces and districts to elect the Governor and Vice Governor, Regent and Deputy Regent, and Mayor and Deputy Mayor directly and democratically (Article 1 Sub-Article 1 of Law No. 8 of the Year 2015).

Pilkada is an effort to create local accountability, political equity and local responsiveness. Thus, democratization at the local level is closely linked to the level of participation, and the power relations established on the basis of the implementation of the principle of popular sovereignty. In addition, pilkada results should also be able to deliver people to better social, political and economic conditions. A good elections will give birth to good governance. A more professional, democratic, regional election will have a real impact on political change. Nevertheless, in practice Pilkada spawned various conflicts, among which could be triggered by the problem of voter data administration, the neutrality of election organizers, and the lack of compliance of election participants and political parties to the prevailing regulations, as well as the emergence of issues related to SARA issues. Pilkada simultaneously as a national political agenda towards democratization is expected to run in substance and not merely procedural rituals.

The implementation of Pilkada which in the campaign period has many issues of SARA is very dangerous for the survival of the state and society, as happened in the Regional Head Election in Jakarta Capital City Special Region (DKI). As a country with the ideology of Pancasila and possessing *Bhinneka Tunggal Ika*, the state organizers should be able to put pressure on the executors or participants (political parties) so that Pilkada goes according to the rules and has been agreed not to do dirty methods. The use of SARA issues in democratic events in Indonesia is often done by each group to achieve victory without thinking about the social impacts of society and the unity of the Unitary State of the Republic of Indonesia (NKRI). Moreover, many groups utilize the sophistication of social media to spread propaganda in cyberspace, whether in the form of violent narrative, hate speech, or hoax. The advancement of science, especially internet (cyberspace) is a phenomenon that can not be avoided. However, unfortunately not yet properly utilized, there are even some people who make it as an opportunity that leads to contradictions. There are various parties who deliberately abuse the virtual

world for a particular interest. The gap continues to be used to conduct negative propaganda in the implementation of general elections, especially elections.

In order for the public to have immunity from propaganda or black campaigns in the elections simultaneously, one way is to give trust to organizations and non-formal leaders in the community such as community leaders, traditional leaders, religious figures and others to strengthen the values and tradition to its citizens.

In the elections in conjunction 2018, in Bali region will be elected Governor of Bali, and election of Regent in two districts namely Regent of Gianyar and Klungkung regency. The utilization of the Forum of Religious Harmony in the province of Bali in realizing the peaceful elections is very important, considering that Bali is one of Indonesia's storefronts that can give effect to the conducive democracy and security of travel in Indonesia. On the basis of the above description then the formulation of the problem in this article is: how is the Role of Forum of Harmony of Religious in Keeping Harmony among Religious Atrocities Along the Pilkada Simultaneously in Bali.

## **2. Discussion**

### ***2.1. At a Glance Existence Forum of Religious Harmony of Bali Province.***

Before FKUB Bali Province was formed based on Joint Decision of Minister of Religious Affairs and Minister of Home Affairs No. 9 and No. 8 of 2006, on 5 January 1998 when the reformation period, religious leaders, religious leaders from five religions namely Islam, Catholic, Protestant Hindu and Buddhists held a deliberation of religious leaders in Bedugul agreed to form FKAUB (Interfaith Communication Forum). This is based on the critical situation at that time of the reform era and ahead of the 1999 election, where religion is very vulnerable to practical political tools and if the packaging leads to conflict, it is likely to become a pack of religious conflict.

This joint venture which is then confirmed based on the Joint Decree of the Minister of Religious Affairs and Minister of Home Affairs (PBM) Number: 9 and Number: 8 of 2006 on Guidance on Implementation of Duties of Regional Head / Deputy Head of Region in Maintaining Religious Harmony, Empowerment of Forum Kerukunan UMat Religion, Establishment of the House of Worship, becomes very important to be realized in the area, in the form of Forum Kerukunan Umat Beragama or abbreviated as FKUB. After 2006 the Confucian Religion officially became a member of FKUB Bali Province during the reign of President Abdurahman Wahid so that since 2006 FKUB members become six religions, namely Islam, Protestant, Catholic, Hindu, Buddhist and Confucian.

The vision of FKUB Bali Province is: fostering harmony in preventing religious radicalism on earth Pancasila. The missions include: (1) facilitating the empowerment and enhancement of the role and function of the Religious Harmony Forum as a forum for the elements of society established in the context of maintaining and maintaining religious harmony, particularly in Bali (2) assisting local governments in fostering inter-religious harmony 3) issuing recommendation of Building Establishment Permit (IMB) place of worship in wilyah of Bali Province.

### ***2.2. FKUB Holds Peace Dialogue***

Since the beginning of 2018 the political machinery of parties in Bali has started to move and apply various strategies to win the candidate pairs carried in the contest elections. Some of these ways include through campaigns in social media as a form of socialization to seek evil couples other candidates. With so many areas to hold elections simultaneously, it is difficult to dismiss concerns about the potential emergence of a black campaign.

The fear of the resumption of political frenzy as in the elections of DKI Jakarta is also a concern in the implementation of elections in Bali. That's why FKUB Bali Province held a Peace Election dialog in every district in Bali. The main message raised in these dialogues is to highlight the politics of ideas. It must be admitted that the debate over the politics of ideas and development programs is still small. In fact, the program and idea politics is the main capital that must be owned by every candidate for regional head.

The political ideas and debates surrounding development programs are more useful to be discussed than the politicization of SARA. Such a debate should also be nurtured in a sustainable way so that it is expected to shift SARA issues that can trigger intolerance. Every party is essential to realize peaceful elections that are free from black campaigning. One of them is by continuing to spread healthy messages, which are not provocative, and not cornering as a common commitment in this political year. On the other hand, we also expect that every speech and behavior that the political

elite will be able to cool its supporters. In addition, every pair of candidates who advanced in the elections are also required to demonstrate political maturity by putting forward the political ideas and the program.

Head of FKUB Bali Province, Ida Penglingsir Agung Putra Sukahet, stated that, it is time we spread peace in democracy celebration. Do not just because the desire to rule, then every party to justify any way that can create a nation split. As a political creature, it is natural to have different political views and choices in the elections simultaneously. However, such differences can not be used as an excuse for mutual hatred and hostility, much less to cause horizontal conflicts. Whatever the reason, unity and unity must stand above all else. Let's make pilkada as a vehicle to mature us in politics, nation, and state. Pilkada is also expected to accommodate a wide range of interests, not as a means to hit those who are in disarray. Harmony and harmony must be preserved in this country. Because Indonesia was built not for a year two years, but for ever (interview, April 2, 2018).

### **2.3. FKUB Participation in Socializing the Election Commission Regulation.**

There are several factors that could lead to conflict potential of simultaneous elections. The first factor that could cause conflict is the socialization of the Election Law, the Regulation of the Election Supervisory Board (Bawaslu), and the KPU Regulation. There are still many organizers and election supervisors in areas that do not understand the contents of the Election Law, Perbawaslu, or PKPU. Second, conflicts can arise from the actions of petahana officials who want to re-run. The third factor causing the conflict is the involvement of the State Civil Apparatus (ASN) in the Pilkada. Many ASNs are deliberately taking sides in Pilkada in the hope of getting promotions from candidates for supported regional heads.

The fourth factor is the involvement of TNI and Polri. It is possible that TNI and police participate in the elections through support to certain candidates for regional heads. In the process of democracy, TNI and Polri as a defense and law enforcement tool should be neutral and impartial. Fifth, conflicts due to money politics are also possible threats. Money politics can occur both on a retail scale through the distribution of money and basic needs from house to house, even on a large scale by 'buying' at polling stations. The sixth conflict risk factor is miscalculation and recapitulation of the voting result.

The seventh factor is the conflict caused by the elements of KPU and / or Bawaslu in favor of the regional head candidate. Finally, the conflict may occur if there is a conflict between the political party and the candidate. This possibility is great if there is a strong local head candidate from an individual point in an area.

In order to avoid potential conflict FKUB Bali Province in cooperation with provincial and regency / municipal KPUD intensively participate to socialize various KPU regulations including :

1. KPU Regulation no. 1 Year 2017 on Stages, Programs and Schedule of the Governor and Deputy Governor, Deputy Governor, Regent and Deputy Regent, and / or Mayor and Vice Mayor Convention 2018.
2. KPU Regulation no. 2 Year 2017 on Data Updates and Compilation of Voters List in the Election of Governor and Deputy Governor, Regent and Deputy Regent, and / or Mayor and Deputy Mayor.
3. KPU Regulation no. 3 of 2017 concerning the Candidate of the Election of Governor and Deputy Governor, Regent and Deputy Regent, and / or Mayor and Deputy Mayor.
4. KPU Regulation no. 4 of 2017 on the Election Campaign of Governor and Deputy Governor, Regent and Deputy Regent, and / or Mayor and Deputy Mayor.
5. KPU Regulation no. 5 of 2017 on Funds for Election of Governor and Deputy Governor, Regent and Deputy Regent, and / or Mayor and Deputy Mayor.

### **2.4. Provide Political Education with Religious Approach.**

Direct election of regional heads directly by the people to be implemented on June 27, 2018 certainly can not be separated from the state of political, social, cultural and other aspects. The atmosphere, both before the voting and after voting, will be very stressful which drains a lot of money, energy and mind. For that reason, the rule of rule (rule of game) that has been established must be followed and obeyed. In addition to the need for the rule of law or the rules of the game, the readiness and good political awareness of the organizers, supervisors, candidates for regional heads and voters (the people) must be improved. Both aspects (good rules and political awareness) are very important to be fulfilled in order to meet the objectives of local elections directly to achieve the ideal goals.

In order to increase people's political awareness, FKUB Bali Province held various political education activities through various seminar activities with material substance about: citizen's rights and obligations, increasing citizen participation in election, and socialization of four pillars of national and state life. This political education activity involves all components of religious communities in Bali province.

### **2.5. FKUB Bali Province coordinates with the Government.**

Beware of the circulation of negative issues that develop in society today, FKUB Bali is very intensive in coordinating with the government of Bali Province and Regency / City. Coordination is done through the Regional Leadership Coordination Forum (Forkompinda) as well as all religious leaders to jointly maintain conduciveness and security in Bali Province. Communication with the government is very important to do with anticipation of conflict that may arise between ethnic, religious and statements that are currently often developed in society through social media and print media that disturbs the community.

For the government, coordinating meetings with various components of society including FKUB will benefit: first, build and establish partnerships and harmonious relationships between government and FKUB and other community components. Second, affirming commitment kebangsaan religious leaders in implementing ethics of religious life.

### **2.6. FKUB Organizing joint social service activities.**

To foster the spirit of togetherness FKUB Bali is presenting various interfaith community service activities involving youth, students, students of different religions. Concern for the community should be continuously grown unrestricted by differences in religious background, ethnicity, and other social differences. Interfaith social work activities conducted by FKUB Bali include: (1) blood donation activities (2) cleaning the river (3) social visits to orphans and nursing homes. Through this social activity activity FKUB inserted various information about the importance of maintaining mutual security, peace and also persuasive appeal so that all community components contribute maximally to maintain harmony related to the implementation of elections simultaneously to be held on 27 June 2018, both before and after the implementation of activities general election.

## **3. Closing**

Based on the above description it can be concluded that, in maintaining inter-religious harmony before the elections simultaneously, FKUB Bali Province has performed several roles as follows: (1) conducting Peace Dialogue dialogue between FKUB members in Bali Province (2) Participating in socializing regulation provisions (4) Provide political education with religious approach (4) Coordinate with the government in the Bali region to participate in maintaining the spirit of nationality in welcoming the pilkada in Bali Province (5) Conducting joint social service activities, to give vibration peace of among religious people.

## **References**

- [1]. Adeng, Muchtar Ghazali, 2011, Antropologi Agama (Upaya Memahami Keragaman, Kepercayaan, Keyakinan dan Agama) Alfabeta, Bandung
- [2]. Bagir Manan, 2003, Teori dan Politik Konstitusi, Fakultas Hukum UII Press, Jogjakarta
- [3]. Dahlan, Thaib, 1989, Implementasi Sistem Ketatanegaraan menurut UUD 1945, Liberty, Jogjakarta
- [4]. Frans Magnis Suseno, 1997, Mencari sosok demokrasi ; sebuah telaah filosofis, Gramedia Jakarta
- [5]. Ismail, Faisal, 2014, Dinamika Kerukunan Antarumat Beragama (Konflik, Rekonsiliasi, dan Harmoni), PT Remaja Rosdakarya, Bandung
- [6]. Peraturan bersama Menteri Agama dan Menteri Dalam Negeri No.9 dan No. 8 Tahun 2006 tentang pedoman pelaksanaan tugas Kepala Daerah/Wakil Daerah dalam pemeliharaan kerukunan umat beragama, pemberdayaan forum kerukunan umat beragama, dan pendirian rumah ibadat
- [7]. Sri Soemantri, 1981, Pengantar perbandingan antar hukum tatanegara, Rajawali, Jakarta.

# Effectiveness of CCDP-IFAD Program to Through Fishermen's Incomes of Fish Smoked in Ternate City and The Right Strategy (Case Study fish Smoked Industri Group at Village Faudu, Hiri Island)

**Ibnu Wahab Laitupa**

Muhammadiyah University of North Maluku

Email : Ibnulaitupa3@gmail.com

**Abstract.** Coastal Community Development Project–International Fund for Agricultural Development (CCDP-IFAD) program presents to effort economic empowerment, one of the industrial development effort of smoked fish. The city of Ternate is located in a geographical area and wide in North Maluku, two great potentials that can be optimized for the development of fishermen's economy. So that, this research was conducted as evaluative research and expected useful to its industrial development. The aims of this research is fathom of; (1) the program effectiveness of CCDP-IFAD through fishermen's incomes of fish smoked in Village Faudu Ternate City and (2) to formulate the right strategy in fish smoked industrial development in Kelurahan Faudu. The research method was qualitative and quantitative research. Inference analyses sampling in pairs to compare revenue value before and after doing the program, and SWOT analysis to formulate right strategy. The result of the research showed that (1) inference analyses sampling test concluded that the program was not significantly effect to fishermen's revenue. (2) the result of SWOT analyses had the best strategy was optimization the power of resources both natural or human resources and supporting institutions and the chance Such as high market absorption, tourism and still open diversity to prevent the weakness and threatens. Those strategy was evaluated to stimulate quality of life through developing business aspects.

**Keywords:** *The effectiveness of CCDP-IFAD, fish smoked industry, development strategy*

## 1. Introduction

North Maluku is an archipelago with a total area of 140,255.32 km<sup>2</sup>. Where most of the area is dominated by marine waters, which is 106,977,32 km<sup>2</sup> 76.27% (BPS, 2015). The potential of marine is very large but not yet good impact for the fishermen economy in Ternate City. In addition to fishing fishermen, in Ternate City there are also fishermen processing fishery. These processed fishermen certainly have the potential for the development of product quality as well as wider marketing access in order to improve the fishermen's economy. This development can be achieved if done strategic empowerment.

The Coastal Community Development Program - The International Fund for Agricultural Development (CCDP-IFAD) is present as an effort to empower the economy, one of the efforts to develop the Fishing Industry. The city of Ternate is at the forefront of the vast and central trade of North Maluku, two great potentials that can be optimized for the development of fishermen's economy (Laitupa, 2017)

The existence of this program is expected to nurture fishermen to berdaya ekonomi. Untuk support it conducted research on the effectiveness of CCDP-IFAD Program to Fishermen Fishery Income Rate in Ternate City and Development Strategy (Case Study of Industry Group of Fungi Kelurahan Faudu Kecamatan Pulau Hiri)

The purpose of this research is to Analyze the Effectiveness of CCDP-IFAD Program to Fisherman Fish Fill Rate in Ternate City and Development Strategy.

## 2. Research Method

Data Analysis to determine the effectiveness of CCDP-IFAD program to increase the income of fisherman using paired samples t test in paired samples t test to see the difference of income level of fisherman between before and after receiving program. Furthermore, to analyze and formulate coastal community empowerment strategy, especially fisherman smoke fish processing is done SWOT analysis.

### 2.1. Time and place

The research was conducted in Faudu Village, Kecamatan Pulau Hiri Kota Ternate, December 2016 until January 2017.

### 2.2. Data Collection Tools and Methods

The tool used in the form of questionnaires for interviewing the level of income of fishermen, stakeholder interviews to mengumpu data that will be used in SWOT analysis and media recording video and audio.

The income level data was obtained by interview method to 6 fishermen from three groups of Fish Smoke Fishers in Faudu Sub-district. Next Collect data that will be factors in the points of strategy formulation with SWOT analysis, obtained by interview, discussion, observation, literature study on the object of research, related institutions, program implementers and other parties who can provide valid data and can be accounted for.

### 2.3. Data analysis

The effectiveness of the program to increase income is analyzed using paired samples t test to see the difference of income level of fishermen before receiving after receiving program. The t calculation formula in paired sample inference is :

$$t = \frac{\bar{d}}{s_{\bar{d}} / \sqrt{n}}$$

SWOT analysis is done by weighting and scoring based on interview result, then justified by researcher in the form of weight and score. Based on what was put forward by Rangkuti (2013), the steps undertaken in this SWOT analysis begin with the data collection phase. The data collection stage is an activity of classification and pre-analysis, first dividing the two data distinguished by external data and internal data. External data is data in the form of opportunities and threats and internal data is data which is a fact that can be a strength and weakness. Factors that are expected to be external and internal factors include:

## 3. Result And Discussion

### 3.1. Income Level

Fishermen processing fish smoke recipient of IFAD CCDP program in Faudu urban village of Ternate have entrepreneurial potential through development of home industry that already exist. Some potentials that can be utilized include high market absorption, innovation ideas and continued diversification, and availability of raw materials. The CCDP-IFAD program is expected to provide benefits to the fish-processing fishermen in the form of increased income. Empowerment is the first step for a powerless society to be empowered where people can have the power, capability and control of something that is able to empower their lives, both personally, family and in society (Tanggelingi et al., 2012).

The results show the income level as in table 1 (Laitupa, 2017).

**Table 1.** Income levels before and after receiving the program

Members Of The Program Acceptive Group	Income	
	Before (Rp)	After (Rp)
1	800.000	800.000
2	750.000	800.000
3	1.000.000	1.100.000
4	850.000	850.000
5	600.000	650.000
6	900.000	900.000

Based on statistical analysis inference paired samples found that Hypothesis Ha (significant increase) is rejected because t-count is smaller than t table so that the conclusion that the effect of the program does not show significant increase in income. The conclusion demands the formulation of program effectiveness strategy to increase income as a goal of empowerment (Laitupa, 2017).

### 3.2. Development Strategy

SWOT analysis can be displayed in the form of SWOT matrix in table 2.

**Table 2.** Interaction matrix of internal and external factors

<p style="text-align: center;"><i>Internal</i></p> <p style="text-align: center;"><i>Eksternal</i></p>	<p><b>STRENGTH (S)</b></p> <ol style="list-style-type: none"> <li>1. Potential Fisheries Resources are great</li> <li>2. The existence of institutional support such as fishermen group and CCDP IFAD</li> <li>3. Potential human resources as a businessman of hereditary smoked fish and a strong motivation to develop the business</li> <li>4. The existence of related agencies</li> <li>5. The existence of financial institutions in Ternate City such as banks and cooperatives</li> </ol>	<p><b>WEAKNESSES (W)</b></p> <ol style="list-style-type: none"> <li>1. The processing technology is still simple and the marketing creativity is still minimal</li> <li>2. Durability and quality of fumigation products has not been improved</li> <li>3. Low level of education and mindset less responsible for the consequences of program participants</li> <li>4. Difficulties capital</li> <li>5. Transportation</li> </ol>
	<p><b>OPPORTUNITY (O)</b></p> <ol style="list-style-type: none"> <li>1. High availability of raw materials and awareness of coastal environment quality</li> <li>2. Innovation and diversification of products are still wide open</li> <li>3. Absorption of market / consumer konsumtifitas Ternate</li> <li>4. Tourism development in the island of Hiri and Ternate City in general</li> <li>5. The existence of supporting institutions such as universities, fish quarantine centers and others</li> </ol>	<p><b>STRATEGY (SO)</b></p> <ol style="list-style-type: none"> <li>1. Optimizing SDP</li> <li>2. Increased production capacity by utilizing market absorption</li> <li>3. Development of innovation and difersivikasi products for the development of marketing through the tourist route</li> <li>4. Cooperate with supporting institutions</li> <li>5. Utilizing the existence of related agencies to optimize marketing opportunities and increase production</li> </ol>
<p><b>THREAT (T)</b></p> <ol style="list-style-type: none"> <li>1. Can not be released from escort personnel</li> <li>2. Depletion of capital resulting from the sudden arrival of large quantities</li> <li>3. Prices of fish raw</li> </ol>	<p><b>STRATEGY (ST)</b></p> <ol style="list-style-type: none"> <li>1. Increasing the capacity of human resources to improve managerial skills</li> <li>2. Utilizing financial institutions to address the</li> </ol>	<p><b>STRATEGY (WT)</b></p> <ol style="list-style-type: none"> <li>1. Economic empowerment</li> <li>2. Socialization and intervention from stakeholders to overcome the threat of capital and raw materials</li> </ol>

materials fluctuate 4. The sea weather is erratic	needs of capital 3. Existence of related offices to help overcome price fluctuations 4. Utilizing a strong motivation to strengthen the independence of fishermen in advancing the business.	3. Build supporting facilities that are better able to increase the quality of products and transportation facilities
--	--	---

The strategy directives shown in the SWOT matrix in Table 2 outline the strategy through a suitable approach to the existing fishing conditions. The existence of opportunities for fishery resources and market absorption and supported by the potential of human resources and related institutions is very possible to provide extensive job opportunities and efforts to improve living standards.

Increasing the production rate is still very necessary considering the market absorption is so high, which if done optimally then by itself will overcome the problem of capital even transportation. The technology used by fishermen is generally still simple, resulting in low productivity and ultimately low income. Efforts to increase revenues are made through technological improvements in an integrated manner, from production technology to post production. In the context of smokers fish processing fishermen is certainly a quality improvement to be the main factor must be considered in order to increase sales and revenue. Increasing the quality of smoked fish would lead to higher selling prices and the income of fishermen and craftsmen of smoked fish would increase (Handayani et al., 2014).

Improvement and improvement of technology is also an important factor if you want to diversify the product as one of the opportunities that are considered still very wide opportunity. Nevertheless, community empowerment through technological improvement must also take into account the nature, character, capability, and readiness of coastal communities to enable the implementation of technology to be sustainable (Sipahelut, 2010). Of course this needs to be supported with financial management capabilities. This step needs to be enhanced by IFAD's CCDP program implementers to enable fishermen to look closely at the problems faced by exploiting their own potentials as well as external factors, such as the ability to access capital through financial institutions such as banks and cooperatives. This is a good opportunity, but sometimes conventional banks find it difficult to provide capital assistance because of uncertain sea weather factors that affect the availability of raw materials, or it can be difficult because of the lack of collateral provided by banks. It is also necessary for institutional strengthening such as establishing fishermen cooperatives or other institutions in other forms that can support economically.

The difficulty of access to capital is one aspect that needs to be considered, one of the alternatives is developing self financing mechanism. The form of this system is the development of micro institutions and the future is expected to grow into a macro, which is devoted to support capital business in the field of fisheries (Nikijuluw 2001 in sipahelut, 2010)

Ternate Island is seen from a very strategic marketing aspect as it is a market and export center of North Maluku Province which already has supporting facilities and infrastructure such as: Ahmad Yani port, Fishery Harbor Nusantara Bastiong, and Dufa-dufa fish landing center. Its airport baabullah airport also supports the accessibility of fishery commodities and other products from the center of production to the market interinsuler and export.

External factors such as opportunities for supporting institutions should be optimized with improved partnerships. Besides the existence of tourism activities such as Hiri island festival needs to be utilized by making the fishery products as a typical high-value culinary icon. In addition it is necessary to strengthen the independence of fishermen, this is possible because of the motivation owned by the fishermen so that in turn later the fishermen do not always have to depend on existing programs.

The government as stakeholders as well as policy makers is required to contribute directly to improve the economic power of coastal communities in the island of Hiri in the form of a rill program

with facilities and infrastructures that support fisheries production activities, reach fishermen community with the help of production facilities with the latest technology, training education, on product development, fishermen's economic power, development of market access, institutional strengthening.

#### 4. Conclusion

The income level was slightly increased but uneven and the paired sample inference test results showed no significant improvement. Based on the SWOT analysis, it can be concluded that the most appropriate strategy is to maximize the existing strength and opportunities by exploring all internal potentials and optimizing the best available opportunities for raw materials availability, capital access, market absorption, institutional support, and tourism.

#### References

- [1]. BPS Provinsi Maluku Utara (2015) Data Penduduk Miskin Maluku Utara. Diambil 2 Januari 2017, dari website BPS Maluku Utara. <http://malut.bps.go.id/linkTableDinamis/view/id/73>
- [2]. Handayani, D., Laila, F. Margareth, dan Arifan, F. (2014). Meningkatkan Pendapatan Nelayan dan Masyarakat Pengolah Ikan Panggang dengan Memanfaatkan Asap Cair. *Jurnal Metana*, vol. 10, no. 2, hal. 30
- [3]. Laitupa, W.L. (2017). efektivitas program *Coastal Community Development Project (CCDP-IFAD)* terhadap industri Pengasapan ikan di Kota Ternate yang pada penelitian ini mengambil studi kasus kelompok industri pengasapan ikan Kelurahan Faudu Kecamatan Pulau Hiri. *Jurnal Agrikan UMMU-Ternate*, vol. 10, no. 1
- [4]. Rangkuti, F. (2013). *Analisa SWOT, Teknik Membedah Kasus Bisnis*. Jakarta: PT. Gramedia Pustaka Utama.
- [5]. Sipahelut, Michael. (2010). *Analisis Pemberdayaan Masyarakat Nelayan di Kecamatan Tobelo Kabupaten Halmahera Utara*. Bogor: Tesis Sekolah Pascasarjana IPB
- [6]. Tanggelangi, R. Arkwright, D. (2012). Strategi Program Pemberdayaan Masyarakat di Desa Koloray Kecamatan Morotai Selatan. *Jurnal Uniera*, vol. 1, no. 2, hal. 2.

# Application of Premium Revenues and Claims Charges Based on PSAK No. 28 At PT. Bosowa Insurance Branch Ternate

Irman Mamulati<sup>1</sup> and Djamila Abbas<sup>2</sup>

*Accounting Study Program, Muhammadiyah University of North Maluku*  
Email : <sup>1</sup>irmanmamulati@gmail.com, <sup>2</sup>djamilaabbas129@gmail.com

**Abstract.** Nowadays the insurance industry, especially the loss insurance, is growing in harmony with the development of the business world and the improvement of the economic capability of the community. Insurance is considered important as one way to minimize the risk of loss that may occur. PT. Bosowa Ternate Insurance Branch as one of the general insurance companies that already have various insurance products, where one of them is surety bond insurance product. As an insurance company, the main income is derived from insurance premiums while the main expense is claims expense. This study aims to analyze the application of premium income and claims expense based on PSAK No.28 at PT. Bosowa Insurance Branch Ternate. The method used in this research is quantitative descriptive. The results of this study indicate that insurance transactions become relatively complicated because the income comes from premiums that are known and occur first, while the main load is the burden of claims has not occurred and covered by uncertainty both time and number. Revenue and claims recognition base accrual basis. Revenue is recognized at the time of the transaction even if cash has not been received. In this case income is recorded and recognized at the time of policy insurance. Claims expenses are recognized upon an obligation to fulfill the claim.

**Keywords:** *Revenue Recognition, Claim Expense, Insurance Accounting*

## 1. Preliminary

PT. Bosowa Insurance Ternate Branch is one of the companies engaged in the insurance of losses, where the product offered is surety bond. Surety bond is a form of Guarantee that usually the obligee party (project owner) asks for warranty or surety bond from the principal (contractor) with a view to express the seriousness of the principal in carrying out its work in accordance with the agreed contract/agreement. The guarantee is provided by a surety issued by a Non Bank Financial Institution, an Insurance Company which has a bond surety program (Simanjuntak 1986; Abbas 2007; Darmawi 2008; Djojosoedarso 2008).

Financial Accounting Standards Number 28 is a guideline for loss insurance companies in preparing, and presenting financial statements related to surety bond in the form of premium income and claim costs. Where premium income is recognized during the contract period and the estimated premium amount is adjusted per period to reflect the actual premium amount. While the premium amount can not be estimated properly, the premium is treated using the deposit method until the premium amount can be reasonably estimated (IAI 2012: 28).

In addition to the premium income that is the obligation of the customer, the company also has responsibility to fulfill the burden of insurance claim by the customer as their right. Where the claims expense relating to the occurrence of any eventual loss to the insured object includes settled claims, outstanding claims, claims incurred but not yet reported, and claims settlement expenses, as claims expense at the time of the obligation to fulfill the claim (IAI 2012: 28).

This research was conducted at PT. Bosowa Ternate Branch Insurance established since 2009, and has twice received claims submission from CV. Linda Karya for the construction work of retaining waves of Orimakurunga Village of South Halmahera Regency and CV. Gamalama Indah for the construction work of the bridge Asombang District. Bacan Kab. South Halmahera. That is, with such claims accounting is required in relation to such claims. This study aims to examine the application of revenue recognition and clay loads based on PSAK No. 28 at PT. Bosowa Ternate Branch Insurance engaged in insurance losses or surety bond.

## **2. Research methods**

This research was conducted at PT. Bosowa Insurance located in Ternate City, North Maluku. Methods of data collection conducted in order to obtain data that can be tested truth, relevant and complete, then in this research using data collection method that is literature research and field research.

This research uses quantitative descriptive method. quantitative descriptive is an analytical technique that describes the state of a symptom that is then processed according to its function, and the results of processing are then presented in the form of numbers so easily captured its meaning by the recipient of information (Sarwono 2006; Sugiyono 2010). Descriptive quantitative analysis in this study, namely:

1. Reveal the recognition of income and expenses on the financial statements of PT. Bosowa Insurance Branch Ternate.
2. The application of revenue recognition to SFAS No. 28 on loss insurance.
3. Application of recognition of premium income and claims expense of PT. Bosowa Ternate Branch Insurance is in accordance with the rules of PSAK No. 28 on loss insurance.

## **3. Results and Discussion**

### ***3.1. Revenue Recognition PT. Bosowa Insurance Branch Ternate***

In conducting business PT. Bosowa Ternate Branch Insurance is engaged in surety bond which will be recognized as revenue when signing the contract. As for some surety bond products include:

#### ***1. Bid Security***

This bidding warrant is the first step that the obligee hints to the contractors who will follow the auction in accordance with the design specifications and so on the project that will be planned to be built / done. Each contractor of the auction must complete / provide a guarantee of an offer from a bank or non-bank financial institution licensed to issue a bid guarantee.

The bidding function of the bidding project is to assure the good faith of the bidder that if the bidder wins the can in a specified time he will sign the execution by completing the requirement of the obligee to provide assurance of the execution of the bailer. If the company that has secured the project but is unable to perform the work for various reasons, the surety is liable to pay compensation based on the amount of the tender guarantee.

#### ***2. Performance bond***

This warranty is issued by the guarantor to the contractor as a continuation of his / her designation as the winner of the auction. With this guarantee means they are able to carry out the job properly until finished in accordance with the promised. If it is not suitable then the guarantor will compensate the obligee due to negligence or failure of the contractor to complete the work.

#### ***3. Advance payment guarantee***

Advance payment between the contractor and the insurer to assist contractors who are technically sound but financially weak in implementing construction projects. The guarantee works if the principal fails to fulfill its obligation to perform the work according to the contract, then the principal concerned shall pay off the remaining advance which has not been returned to the obligee.

#### ***4. Maintenance Guarantee***

After the work is done usually the obligee holds 5% of the contract payment, the amount of which is called the retention money and the reserve fund for the repair cost if there is damage arising after the first handover. The funds are usually disbursed if there is a guarantee from a surety company called as a guarantee of voting.

### ***3.2. Claim Load Acknowledgment PT. Bosowa Insurance Branch Ternate***

Expenses incurred when the insured experiences unexpected events (such as losses due to project offerings, project implementation, advance payment and voter guarantees) which are then reported to PT Bosowa Insurance Branch of Ternate ie the insurer. The claim report will be reviewed by PT Bosowa Insurance Branch of Ternate and if it is approved it will incur debt or decrease of assets in the form of cash disbursement and recognized as expense, in other words the claim expense is recognized and recorded together with the incurrence of liability to the insured / the achievement of compensation agreement to the insured. Claims relating to the occurrence of any eventual loss to the insured object, including an approved claim, claims in progress, claims incurred but not yet reported, and claims settlement expense, are recognized as claims expense at the time an obligation arises to

fulfill the claim. Subrogation rights are recognized as deduction of claims expense upon realization. The Company recognizes the claim charges using the accrual basis method, ie when the loss report is certain to be issued.

The process of claim insurance claim by the customer at PT. Bosowa Insurance has the following terms and conditions:

1. Claim Receipt
2. Claims handling procedures
3. Claim Report Issuance

### **3.3. Discussion of Revenue Recognition and Claim Expense PT. Bosowa Insurance in Relation to PSAK No. 28 About Insurance Losses**

One of the main sources of income at PT. Bosowa Ternate Branch Insurance is the premium income from surity bond. Recording of revenue recognition is based on the accrual basis method in which income is recognized at the time of the event / when the contract is effective not when the receipt of cash or cash equivalents is then directly dentry into the computer system because of PT. Bosowa Insurance Ternate Branch does not do manual recording. By using base accrual method at PT. Bosowa Ternate Branch Insurance then the recording of revenue recognition has been in accordance with the Financial Accounting Standards that guide the feasibility of the presentation of financial statements.

While the burden that occurred at PT. Bosowa Ternate Insurance Branch consists of claims expenses, Reinsurance expenses and Commission Expenses. The Company recognizes the claim charges using the accrual basis method, ie when the Loss Report must be issued and approved by the company which is then directly entered into the system on the computer.

With the existence of accounting system that can manage the transaction data and other financial data on a regular basis, it can be said that the management of PT. Bosowa Insurance Branch of Ternate and head office of PT. Bosowa Insurance has prepared the financial statements well in accordance with PSAK No.28 on Accounting for Loss Insurance.

### **4. Conclusions and Recommendations**

Recording revenue recognition at PT. PT. Bosowa Ternate Branch Insurance uses the accrual basis method, that is, the income is recognized based on the effective contract or calculated in accordance with the useful life. The recognition of the proceeds from the sale of this insurance shall be recognized legally after the period when the principal activities of the service have been completed. Revenues from the sale of services can be said to have been recognized if the transaction has occurred and the company will receive some cash.

Recognition of load recognition at PT. PT. Bosowa Ternate Branch Insurance has been using accrual basis method that is:

- a. Claims expenses relating to the occurrence of any eventual loss to the insured object, including the approved claims, claims in progress, claims incurred but not yet reported, and claims settlement expense, are recognized as claims expense when an obligation arises to fulfill the claim or when the loss report published.
- b. The Commission's expenses are incurred and are recorded in accordance with the recognition and recording of the premium concerned.
- c. Recording and bookkeeping at PT. PT. Bosowa Ternate Branch Insurance already using computerized process in which journal recording is not done manually but directly input into computer according to transaction happened.

Revenue and expense recognition at PT. PT. Bosowa Ternate Branch Insurance has been in accordance with the provisions of Financial Accounting Standards, which are PSAK No. 28.

### **5. Suggestion**

Overall revenue and expense recognition at PT. Bosowa Ternate Branch Insurance has been in conformity with Financial Accounting Standards. 28 on Insurance against Losses. So the author's suggestion is:

1. In order for PT. Bosowa Ternate Branch Insurance continues to keep the work system to continue well and in accordance with the applicable provisions.

2. For the public that let's insurance and share the risk to the insurance company because of the many benefits that we will get by having insurance.

### **Bibliography**

- [1]. Abbas, Salim. 2007. *Insurance and Risk Management*. Indonesia: Jakarta. PT Raja Grafindo Persada
- [2]. Darmawi, Hermawan. 2008. *Insurance Management*. Indonesia: Jakarta-Bumi Aksara.
- [3]. Djojosoedarso, Soeisno. 2008. *Principles of Risk Management and Insurance Second Edition*. Indonesia: Jakarta-Salemba Empat.
- [4]. Ikatan Akuntan Indonesia. 2012. *Statement of Financial Accounting Standards*. Indonesia: Jakarta-Salemba Empat
- [5]. Simanjuntak, Emmy Pangaribuan. 1986. *Forms of Warranty (Surety Bond, Fidelity Bond) and Crime Coverage (Crime Insurance)*. Indonesia: Yogyakarta-Liberty
- [6]. Sarwono, Jonathan. 2006. *Quantitative and Qualitative Research Methods*. Indonesia: Yogyakarta- Graha Ilmu
- [7]. Sugiyono, 2010. *Qualitative and Quantitative Research Methods*. Indonesia: Bandung-Alfabeta
- [8]. Rosalie dan Budiarmo. 2017. *Analysis of revenue and expense recognition under PSAK No. 28 at PT. Asuransi Tri Pakarta Branch Manado*. Indonesia: University of Samratulangi-Jurnal Accountability. Volume 06. Nomor 01, 2017, 81-91

# The Indonesia Legal Politics on Mining that Reduced the Environmental Sustainability

Jarot Digdo Ismoyo<sup>1</sup>, Supanto<sup>2</sup>, I.G. Ketut Ayu Rachmi H<sup>3</sup>

<sup>1</sup>Doctoral of Law Program, Sebelas Maret University, Surakarta.

<sup>2</sup>Faculty of Law, Sebelas Maret University, Surakarta.

<sup>3</sup>Faculty of Law, Sebelas Maret University, Surakarta.

**Abstract.** Indonesia is a country rich in natural resources. Since the independence of Indonesia in 1945, government tried to manage the natural wealth through mining law. Natural wealth is expected to increase state income to be development capital. Since the legalization of Law No. 1 of 1967 on Foreign Investment and Law No. 11 of 1967 of Mining, the natural wealth began to be exploited. In addition to bringing positive impacts, this exploitation also brings negative impact, such as customary land grabs, human rights violations and environmental pollution. Pollutions of the river, sea, air and the absence of mine reclamation resulted in great damage to the earth. This is exacerbated by weak law enforcement by the government. Mining company left severe damage. The mining law's political future should keep environmental sustainability. The method used is normative juridical that is relying on the study of literature as basic data. Secondary data serves as the main data for qualitative analysis.

**Keywords:** *Enviromental Sustainability, Legal Politics, Mining.*

## 1. Introduction

Indonesia is endowed with abundant natural wealth such as forests, plantations, agriculture, maritime wealth and various minerals contained in the earth body. However, Indonesia has not been able to properly manage mining due to lack of human resources, high technology mastery and funding to manage the mining sector.

In the period of independence, the mining sector is still controlled by foreign companies Dutch colonial relics. Furthermore, Indonesia nationalized in 1958 until 1960. As a result foreign companies were nationalized. Furthermore, To manage the mines, Law No. 15 of 1960 of Foreign Capital Investment and Law No. 37 of 1960 of Mining was enacted. In this law the government manages investments through Production Sharing patterns where the government holds the greatest investation. In this concept foreign capital loans will be returned from the production of the relevant minerals. This effort turned out to be unattractive to foreign investors.

To overcome this, Indonesia opens opportunities for foreign investment to manage mining. The government subsequently adopted the economic model of developmentalism by providing a number of policies that enable investors in the mining world to invest and operate in Indonesia. So the Indonesian government enacted Law Number 1 Year 1967 regarding Foreign Investment and Law Number 11 Year 1967 About Minimum Provisions of Mining. According to Article 8 of the new law, foreign investment in mining is based on a partnership called contract of work. In this work contract the operations management is entirely in the hands of the contractor, so the contractor has the absolute right and authority to manage and prioritize the interests of his company.

In the 1970-1980 period, the policy have significant results. Indonesia recorded a rapid rate of economic growth that is considered one of the five "Asian economic tigers". In this period, Indonesia also known by the world as one of the producer of oil, mineral and coal minerals leading in the world. In the reform era, several laws in the mining sector were enacted : (1) Law Number 22 of 2001 on Oil and Gas, (2) Law Number 25 of 2007 on Investment and (3) Law No. 4 of 2009 on Mineral and Coal Mining.

However, the existence of mining in Indonesia has been widely questioned by various circles having positive and negative impacts such as (Salim, 2014):

1. Destruction of forests in the mine's area;

2. Sea contamination;
3. Outbreaks of disease for people living in mining areas;
4. Conflict between mining communities and mining companies.

The mining industry in Indonesia is exploiting nature by destroying the environment, causing forest degradation, environmental pollution, contributors to global warming. In addition, the mining industry often violates human rights and women's marginalization, induces adat lands, takes over natural resources and suppresses the rights of local communities.

Even Wahana Lingkungan Hidup (WALHI) the Indonesia Non Governmental Organization, states that areas of mining operations often overlap with forest areas and indigenous peoples' territories have led to conflicts over the rights and rights of local communities. The absence of government recognition of the rights of indigenous peoples to their area of life leads to arbitrary concessions being granted without public consent. Community groups should be expelled and deprived of their livelihoods, either due to land deprived of pollution and environmental damage caused by waste mining operations.

## **2. Material and Methods**

### **2.1. Method of Approach.**

The approach used in the research problem is normative approach. In this type of research, the law is conceived as what is written in the law in the book. In the study of normative law, library material is the basic legal material in research classified as secondary legal Material. The study documents consists of legislation and various policies relating to the subject matter studied

### **2.2. Types and Sources of Data**

The data used in this study can be classified into two types:

#### a. Primary Data

Primary legal materials consist of legislation, official records or treatises in lawmaking and judgmental decisions.

#### b. Secondary Data

In addition to research resources in the form of legal materials, law researchers may also use non-legal materials when deemed necessary that have relevance to the research topic.

### **2.3. Methods of Data Collection**

To analyze the legal material, first inventory / collection of primary and secondary legal materials used in this study. Collecting or inventorying of legal materials is first by clarifying the legal material on the subject matter discussed, namely the legal material on mineral and coal mining, and the development of the state administration.

### **2.4. Data Analysis**

These steps are in accordance with the character of legal science as a prescriptive or applied science. As a prescriptive science, the science of law studies the objectives of law, the values of justice, the validity of the rule of law, the concepts of law and legal norms. In conducting legal research, steps are taken: Identifying legal facts, Collection of relevant legal materials, reviewing legal issues, drawing conclusions, providing prescriptions.

## **3. Results and Discussion**

### **3.1. Legal politics Based the 1945 Constitution**

In the book "Corpus Juris Scundum" volume 16, the definition of the constitution is formulated as follows: "A constitution is the original law by which the system of government must be established for all their power and authority ". The Constitution may also be interpreted as follows: "A constitution as a form of social contract joining the citizens of the state and defining the state itself" (Taufiqurrahman, 2002). The true purpose of the state is good life and it is a common interest to achieve it. In the 1945 Constitution, the objectives of the state of Indonesia are listed in paragraph 4 of the 1945 Constitution which states in order to form a Government of the State of Indonesia which shall protect the Indonesian nation and the whole Indonesian welfare, to develop the intellectual life of the nation, and to participate in implementing world order based upon independence, eternal peace and social justice. This objective is translated in Article 33 paragraph (3) The land and water and the natural resources contained therein shall be controlled by the state and shall be used for the greatest prosperity of the people. So Founding Father we already have a clear vision in drafting the Constitution. So that

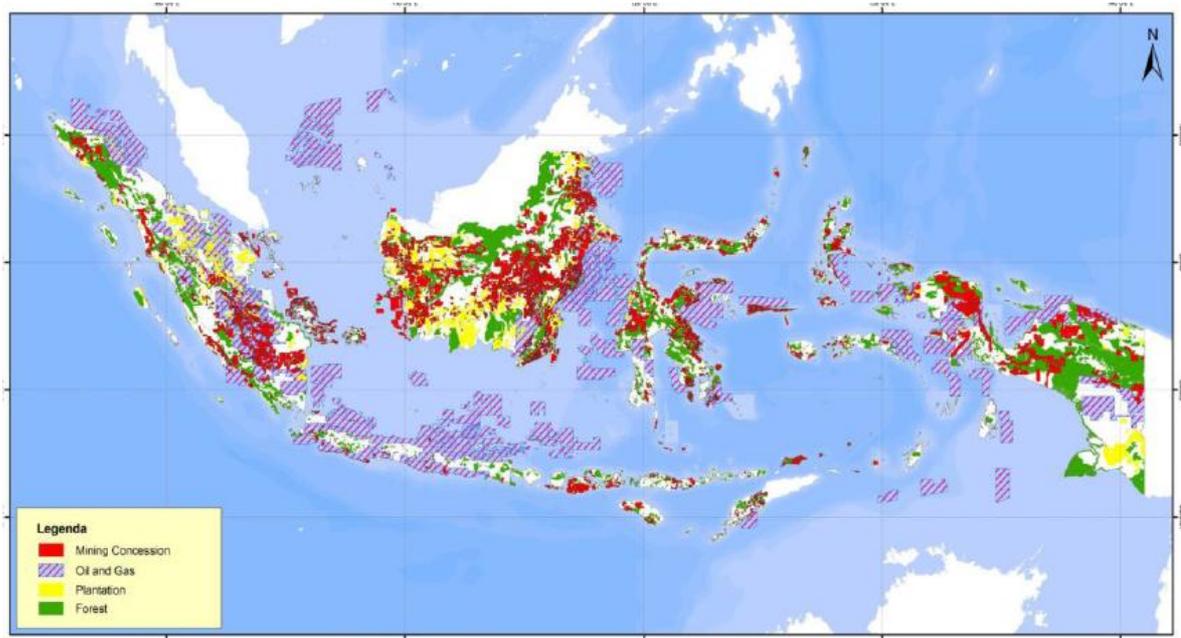
Indonesia is not re-trapped in colonialism, by implementing the Constitution in the management of Natural Resources.

But since 1967 until 2018 this paradigm of governance of Natural Resources seemed to ignore the constitution. natural resources are managed under the principle of cutting-export (for timber), cultivation-exports (for mines), Suction-export (for oil and gas), catch-export (for marine products). In the field of mining, raw materials containing nickel, copper, and gold are dredged and directly exported at low cost. Upon arriving in the export destination country, the material is processed in a smelter, absorbing thousands of workers in the country, producing a declining result. Indonesia lost the opportunity to use the Natural Resources mine for the prosperity of its people, which once again prospered the people of other countries. According to The Global Review the control of the mining sector through 2012 is as follows:

**Table 1.** Foreign Mining Percentage by 2012

<b>Jenis tambang</b>	<b>Penguasaan asing</b>
Minyak bumi dan gas alam	85 %
Mineral (emas, perak dan tembaga)	95 %
Batubara	85 %

**Table 2.** Concession Map Minerals, oil and gas and plantations that account for almost 45% of the total area of Indonesia.



Source : Jatam, 2014

Both data states that the management of natural resources is done by neo colonialism and leave Article 33 of the 1945 Constitution.

**3.2. The Legal Politics of Law No. 4 of 2009 on Mineral and Coal Mining is pro mining entrepreneurs but abandon the environment sustainability**

The substance of Law No. 4 of 2009 on Mineral and Coal Mining adopting the neo liberalism system, capitalism, and individualism. This can be seen in :

1. Article 38 stating that the Mining Business License is granted to:
  - a. business entity;
  - b. cooperative; and
  - c. individual.

Article 38 point c on individual may lead to debate in its interpretation, as it may also be granted to all persons including foreign private. If given to individuals, of course, contrary to the spirit of

Article 33 of the 1945 Constitution because it leads to the interests of individuals (individuals) who are the soul of capitalism.

2. Article 90 :

"Holders of Mining Business License (Ijin Usaha Pertambangan) and Special Mining Permit (Ijin Usaha Pertambangan Khusus) may perform part or all of the mining business stages, both exploration activities and production operations".

This Article provides the flexibility of concentration of power to the holder of a contract permit with a large investment to monopolize the entire mining process from upstream to downstream. This chapter is dangerous because it can remove the interference of the government and the people.

3. Article 105 paragraph (1) and (3) as follows:

(1) A non-moving business entity in a mining business intending to sell the excavated minerals and / or coal shall first have a Production Operation IUP for sale.

(3) Mineral or coal excavated and to be sold as referred to in paragraph (1) shall be subject to production dues.

The provisions of this article state that mineral mining and coal are commodities. This article sells natural resources to the market and only huge mining entrepreneurs run this business.

**3.3. Environmental Damage as a negative impact of Mining.**

Mining has several characteristics, among others: non-renewable, relatively high risk, and its exploitation has a relatively high physical and social environmental impact compared to other commodities in general.

The existence of the mine brings positive impacts such as increased foreign exchange, increasing state revenues, accommodating labor and improving the socio-economic conditions of communities around the mine. But mining also brings negative impacts such as forest destruction, environmental pollution, disease outbreaks for communities around the mine, conflicts between communities and mining companies as well as human rights violations. The negative environmental impacts caused by improper mining management result in damage to the environment, other natural resources and harm to the surrounding community.

Adverse impacts on the land include Mining requiring large areas to be excavated. Consequently, forests are logged for mining, offices and are home to employees. The deforestation leads to the destruction of a large number of animals. and risking the survival of large numbers of species and the destruction of vegetation in the surrounding area.

The Pollution due to hazardous waste chemicals such as mercury, cyanide, sulfuric acid, arsenic and methyl mercury are used in various mining stages largely released into nearby streams. The release of toxic chemicals into the water is clearly harmful to the flora and fauna in the water.

Disease spread. Remnants of liquid waste dumped in the pit will be inundated. It is a breeding ground for water-borne diseases, which cause insects and mosquito-like organisms to thrive.

Mining is the extraction of minerals and other geological materials of economic value from deposits on the earth. The potential loss of biodiversity, erosion, contamination of surface water, ground water, and soil. The formation of sinkholes is also possible. The other environmental damage, contamination caused by the leakage of chemicals (Chepkemoi, 2017).

The following chart details on how these contaminants enter the environment during mining and refining. Current mining and refining techniques make common contaminant release (MIT, 2016). Note: The two columns that involve waste rock and the column labeled, "No site rehabilitation after cease of mining operations" are all involve mining specifically.

Risk	Affected compartments	Relevant toxic compounds
Overtopping of tailings dam	groundwater, surface water, soil	<b>Water emissions:</b> <ul style="list-style-type: none"> <li>• in most cases radionuclides, mainly thorium and uranium;</li> <li>• heavy metals;</li> <li>• acids;</li> <li>• fluorides;</li> </ul> <b>Air emissions:</b> <ul style="list-style-type: none"> <li>• in most cases radionuclides, mainly thorium and uranium;</li> <li>• heavy metals;</li> <li>• HF, HCl, SO<sub>2</sub> etc.</li> </ul>
Collapse of tailings dam by poor construction	groundwater, surface water, soil	
Collapse of tailing dam by seismic event	groundwater, surface water, soil	
Pipe leakage	groundwater, surface water, soil	
Ground of tailing pond not leak-proof	groundwater	
Waste rock stockpiles exposed to rainwater	groundwater, surface water, soil	
Dusts from waste rock and tailings	air, soil	
No site-rehabilitation after cease of mining operation	land-use, long-term contaminated land	
Processing without flue gas filters	air, soil	
Processing without waste water treatment	surface water	

In Indonesia, mining companies are expected to adhere to rehabilitation and environmental codes, making sure that the area mined is eventually transformed back into its original form, or at least as much as it is possible. Mining operations have environmental responsibility include the protection of land, water, and air.

#### 4. Discussion

The mining sector is one of the industries that the Indonesian government relies on to bring in foreign exchange, increase state revenues and recruiting mass employment. But there are also negative impacts of mining is the destruction of the environment. Mining creates an environmental disaster. Many impacts due to mining operations include natural disasters, landslides, floods, droughts, animal genetic conflicts, pollution and many others. Mining also damages the livelihoods of communities where forests are felled, communities are expelled from their customary territories. People also often experience various diseases caused by waste disposal directly into the river or land. In addition, mining often creates conflicts with indigenous peoples that trigger violations of human rights. Moreover, the mining law does not accommodate the rights of indigenous peoples. Only the rights and obligations of the holder of mining permit are regulated. The mining operations in Indonesia often involving police and military security forces as security. When mining companies begin exploration, indigenous peoples are often forcibly removed. Protests or objections are often addressed in violent ways that violate human rights. People who demand their rights are also often criminalized by the police.

Indonesia's mining legal policy opens wide opportunities in the mining industry. In addition to providing revenues for the state, massive mining exploitation brings impacts on the destruction of the environment throughout Indonesia. The Mining Law ignores Law no. 32 of 2009 on Environmental Protection and Management which is a series of systematic and integrated efforts undertaken to preserve the environmental function and prevent the occurrence of pollution and / or environmental damage including planning, utilization, controlling, maintenance, supervision and law enforcement. The government seems to fail to protect the community and environmental sustainability. For that the state must enforce environmental laws with supervision. Ex-mine holes should not be left open, but reclamation must be done, ie the closure or burial of the post-mining pit. The main problem that will arise in the ex-mining area is the occurrence of environmental changes, especially impact on ground water and surface water, physically morphological changes and land topography.

The biggest contributor to forest destruction is the mining sector. In addition, Indonesia experienced various environmental pollution caused by mining companies such as gold mining Newmont Minahasa Raya Inc, disposing of toxic wastes, such as arsenic and mercury to Buyat Bay of North Sulawesi in 2000, Kao bay, senunu bay. The tailings operation contaminated 35,820 hectares of land and the bay of Buyat was 84,158 hectares (Jatam, 2006). As a result fish population in the bay dropped dramatically. People surrounding area can no longer eat fish. They also suffer from various diseases such as persistent headaches, skin diseases, tumors, and difficulty breathing. However, the mining law can not provide a solution to these problems.

The mining corporations Crime are common in Indonesia, such as Freeport, Sape, Mandailing Natal, Batang Toru, Bangka, children victims of mining pits, PT. Cement Indonesia in Rembang to the shooting of citizens in Wawonii, the case of environmental pollution by PT NHM in North Halmahera, and many more that continue to occur throughout Indonesia but always forgotten. On the contrary, the law enforcement against environmental perpetrators by corporations has not been implemented. Most cases ended with a police interruption. The government is trying to save the company on behalf of development or investment. If it happens then it is not in accordance with the mandated in the 1945 Constitution.

The carrying capacity of nature is crucial for human survival, so the ability of the natural carrying capacity must be maintained so as not to be damaged and bad for human beings. If there is damage to the carrying capacity of nature, which is shaped through a very long process, hundreds or even thousands of millions of years, it is impossible to wait for its recovery naturally (Wardhana, 2004). Indonesia will experience an environmental crisis if the carrying capacity of nature is not maintained its balance.

In the future, every mining business and activity that impact on the environment needs to be analyzed from the beginning of its planning, strictly controlled its safety and safety so that it can be controlled by negative impacts. No mine protecting the environmentally, otherwise destructive as landscape changes, the use of hazardous chemicals that cause pollution and thus must be strictly controlled.

The new paradigm of the mining industry is an environmentally sustainable mining process, includes; 1) Prospecting, 2) Exploration: preliminary exploration, detailed exploration, 3) Feasibility study: engineering, economics, environment ; 4) Production preparation, 5) Mining (Demolition, Loading, transportation, stockpiling), 6) Reclamation and Environmental Management, 7) Mineral dressing, 8) Refining / metallurgical extraction, 9) Marketing, 10) Corporate Social Responsibility (CSR), 11) Mine Termination.

From the above discussion can be drawn conclusion:

1. Politics The Indonesian mining law only exploits the natural resources of mining, but does not favor environmental sustainability.
2. Mining practices in Indonesia cause many problems and in the long run result in environmental crisis.
3. Indonesia should implement a new mining paradigm that is environmentally sound and sustainable.

## References

### *Book*

- [1]. H.S, Salim, *Hukum Pertambangan Indonesia*, Ed 1, Cet 7, Rajawali Press, Jakarta, 2014, hlm. 6
- [2]. Jaringan Advokasi Tambang (Jatam), 2006, *Tambang dan Penghancuran Lingkungan, Kasus-Kasus pertambangan di Indonesia 2003-2004*, Jatam, Jakarta, hlm. 13
- [3]. \_\_\_\_\_, 2015, *Negara Absen Ketika Kejahatan Tambang Merajalela, Presiden harus berpihak pada keselamatan Rakyat. Kertas Posisi Jatam.*
- [4]. Wardhana, Wisnu Arya, *Dampak Pencemaran Lingkungan*, (Yogyakarta: CV Andi Offset, 2004), hlm. 15.

### *Information from Internet*

- [1]. Chepkemoi, Joyce, 2017, *What Is The Environmental Impact Of The Mining Industry?*, <https://www.worldatlas.com/articles/what-is-the-environmental-impact-of-the-mining-industry.html>
- [2]. MIT, 2016, *Environmental Risks of Mining. How they arise and how their effects can be mitigated*, <http://web.mit.edu/12.000/www/m2016/finalwebsite/problems/mining.html>
- [3]. *The Global Review*, 2012, [http://www.theglobal-review.com/content\\_detail.php?lang=id&id=14378&type=6](http://www.theglobal-review.com/content_detail.php?lang=id&id=14378&type=6).

### *Proceeding*

- [1]. Taufiqurrahman, A. S, "*Negara Konstitusional Bukan Sekedar Memiliki Konstitusi*", 2002, makalah Komisi Yudisial, hlm. 1.

# Students' Writing Difficulty in Composing a Descriptive Text

La Ode Nggawu

Halu Oleo University, Kendari, Indonesia  
Email : awu\_fan@ymail.com

**Abstract.** The fact that writing was considered as difficult for most students still remained an unresolved issue. Yet, some teachers still continued disregarding what was going on with students' writing difficulty in their teaching of writing. Thus this study was aimed at finding out students' writing difficulty in composing a descriptive text of the Eleventh Grade Students in an SMK in Kendari, South east Sulawesi. This study employed quantitative descriptive analysis to describe students' writing difficulty. One class of eleventh grade students in this SMK took part in this study. The data were gathered through writing test that was done on November 6<sup>th</sup>, 2017. The finding showed that students had significant difficulty in composing a descriptive text. It was proved by the mean score of students' writing quality, i.e. 46 or classified as *very poor* based on the criteria suggested by Jacob (1981). Therefore, it was imperative for the English teacher in this SMK to encourage the learners to give more emphasis on items seen difficult by the students in composing the text.

**Keywords:** *students' writing difficulty, teaching writing, descriptive text*

## 1. Introduction

One of the most challenging and cumbersome skills to be mastered by students in learning English and still continue to be problematic skill for teacher to teach in the classroom is writing skill (Nunan, 1991). To know more deeply about such difficulty, it is imperative to conduct a research on students' writing difficulty. This was in line with the statement from Troia and Graham who suggested that one crucial step in elevating the status of writing instruction and its associated research is to identify what we know and where we need to invest further effort for the field to flourish and draw the attention it deserves from various stakeholders (Troia & Graham, 2003).

Parallel with the above thinking, then, this kind of research is exigent enough to employ on the ground that writing skill is very crucial for students to master and comprehend. This has been stated in the decree of the Minister of Education No. 22 (2006) that teaching English is targeted to develop students' oral and written communication competence. Owing to this respect, writing has always become primary consideration to be incorporated in the syllabus in teaching English (Harmer in Wahyudi, 2009) such as what has been applied in the two newest curriculum namely Competence-based Curriculum (from 2004-2006), and Curriculum 2013 until now. Therefore, teachers' responsibility is absolutely necessary not only to offer the learners support and encouragement but also to serve and provide appropriate guidance to the new invention of knowledge and information particularly in writing.

In reality, however, writing continues to be one of the most difficult areas for the teachers and learners of English to be tackled because it covers some skills that should be mastered by the learners. Allen (1981:1) assures that writing may truly be considered as the most difficult skill of those four skills. Furthermore, developing writing skills has always been the most complex and difficult aspect of language teaching (Shaughnessy, 1977).

Consistent with the above thinking, there have been some previous researches related to what aspects in students' writing difficulty being faced by students. Firstly, as reported by Graham and Harris, papers written by poor writers are shorter, more poorly organized, and weaker in overall quality (Graham, 1990; Graham & Harris, 1991). In addition, these students' compositions typically contain more irrelevant information and more mechanical and grammatical errors that render their

texts less readable (Graham & Harris, 1991). Furthermore, the problems experienced by these poor writers are attributable, in part, to their difficulties with executing and regulating the processes underlying proficient composing, especially planning and revising (Graham & Harris, 1994a, 1997; Graham, Harris, & Troia, 1998). As a result, poor writers either “dive in” to writing assignments with little forethought or become immobilized when faced with a blank page and no conception of their final product (Bereiter & Scardamalia, 1987; Elbow, 1981; Torrance, Thomas, & Robinson, 1991). However, these researches do not address comprehensively about specific aspects of writing as suggested by Jacob (1981) that are also crucial in determining students’ writing difficulty.

Accordingly, with regard to the above fact, the researcher considers that it is exactly essential to conduct this study under two basic reasons. Firstly, most EFL teachers still do not realize the appropriate ways in approaching language teaching of writing. Thus, by considering the result of this study, the teacher will focus on what is assumed as the weaknesses side of the learners’ writing difficulties. Secondly, some researchers find difficulties to determine the crucial problem to be treated that is experienced by the learners in writing. Therefore, this study will become basic source for further research because they have gotten prior scientific data from this study.

With respect to the aforesaid reason, this research is aimed to describe students’ writing difficulty in composing a descriptive text of eleventh grade students in an SMK in Kendari.

Based on the above description, the research question of this study is: what is the difficulty of students’ writing in composing a descriptive text of the Eleventh Grade Students in an SMK in Kendari?

This research is expected to make the following contributions:

- 1) Give a meaningful contribution for English teaching at the concerned general;
- 2) Become useful information especially for English teacher in performing learning and instructional process of writing to improve and increase the quality of students’ writing ability.

## **2. Review of Writing**

Related to the better understanding of writing, the writer presented some basic theories about writing suggested by some experts. According to Harris (1993: 10), writing was a process that occurred over a period of time, particularly if the writer took account the sometimes extended periods of thinking that preceded initial draft. In writing, the writer needed a time to do some processes inside. The length of the time was different among writers. Some needed a longer time to just think about what to write before making the initial draft.

Meanwhile, according to Byrne (1988) writing was producing a sequence of sentences arranged in a particular order and linked together in certain ways. Bell and Burnaby in Nunan (1999, p.36) said that writing was an extremely complex cognitive activity in which the writer was required to demonstrate control of a number of variables simultaneously. At the sentence level, these included control of content, format, sentence structure, vocabulary, punctuation, spelling, and letter formation. In writing, there were numbers of aspects that had to be considered to make the information inside the paragraphs and text was cohesive and coherent.

From the above explanation, it could be concluded that writing was a process which occurred over a period of time to produce a sequence of sentences arranged in a particular order and linked together in certain ways that was cohesive and coherent.

## **3. Current Research on Writing Quality**

In line with the statement that writing is considered as a difficult skill to be comprehended by the learners, especially for EFL learners, actually there had been some current researchers who tried to identify the basic reason of why this problem occurs. Most of the researchers focused on identifying students’ writing difficulty in term of grammatical point of view. Meanwhile, other researchers tried to look into more general perspective as suggested by Jacob (1981).

Firstly, there was a correlational study in 2011 conducted by Wai Yan et. al. on students’ writing difficulty in Chinese children. It just concerns on two aspects namely content and

organization. The result showed that children in general made few mistakes (M=1.17). Yet, most (84.11%) of them wrote characters incorrectly in the writing task. Only one student made an exceptionally large number of dictation mistakes, with 12 incorrectly written characters out of a total of 27 characters. In addition, their findings on writing composition in boys and girls demonstrated that girls wrote more and scored higher on overall writing quality.

In addition, there was a case study in 2005 conducted by Msanjila in Tanzania. It attempts to describe writing problems in Kiswahili in Tanzanian secondary schools. The study involved 60 students from three schools at the Kigurenymbe and Morogoro Secondary Schools. The study reveals that there are six glaring writing problems, namely: capitalization and punctuation problems, inexplicitness or fuzziness, poor organization or illogical sequence, spelling problems and grammatical errors. Also, it argues that most of these writing problems arise from pedagogical reasons. Since, this was just a case study, there was no clear statistical number of students' problem in the assumed aspects of writing

By looking at these two studies, the researcher believes that EFL learners still experience with less writing proficiency. This fact is reflected upon the result of the above studies. Those showed that most students made mistakes on grammatical aspect, organization and content. Therefore, it is quite necessary to carry out the study about students' writing difficulty in composing a descriptive text with emphasis on five aspects of writing as suggested by Jacob (1981) to describe overall writing quality of the students comprehensively.

#### 4. Methods

This study used descriptive quantitative analysis. Quantitative analysis meant that the data of students' scores that were obtained in composing a descriptive text were analyzed quantitatively by computing their scores to determine the difficulty faced by students in their writing which ranged from excellent to very poor writing quality. While, descriptive analysis meant that the students' writing difficulty would be commented and presented descriptively.

This study was done in an SMK in Kendari involving eleventh grade students of Jasa Boga 2 class which consist of 30 students taken purposively.

This study used writing test as the main instrument to measure students' writing difficulty in composing a descriptive text. The instrument included students' compositions from the test conducted by the researcher in Class XI in an SMK in Kendari.

##### 4.1 Marking Scheme of Students' Writing Quality

In scoring students' writing result, the researcher used the criteria suggested by Jacob (1981: 90) which covered five components. They were content, organization, vocabulary, language use, and mechanism. Specifically, these five components were summarized below:

**Table 1** Interval Score of Students' Writing Quality

No	Components of Assessment	Interval Score	Indicators
1	Content	30-27	<b>Excellent to very good:</b> knowledgeable, substantive, thorough development of thesis, relevant to assigned topic
		26-22	<b>Good to average:</b> some knowledge of subject, adequate range, limited development of thesis, mostly relevant to topic, but lack detail
		21-17	<b>Fair to poor:</b> limited knowledge of subject, little substance, inadequate development of topic
		16-13	<b>Very poor:</b> does not show knowledge of subject, non substantive, not pertinent, or not enough to evaluate
2	Organization	20-18	<b>Excellent to very good:</b> fluent expression, ideas clearly stated/supported, succinct, well organized, logical sequencing, cohesive

		17-14	<b>Good to average:</b> Somewhat choppy, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing
		13-10	<b>Fair to poor:</b> non fluent, ideas confused or disconnected, lack logical sequencing and development
		9-7	<b>Very poor:</b> does not communicate, no organization, or not enough to evaluate
		20-18	<b>Excellent to very good:</b> sophisticated range, effective word/idiom choice and usage, word form mastery, appropriate register
3	Vocabulary	17-14	<b>Good to average:</b> adequate range, occasional errors of word/idiom form, choice, usage but meaning not obscured
		13-10	<b>Fair to poor:</b> limited range, frequent error of word/idiom form, usage, meaning confused or obscured
		9-7	<b>Very poor:</b> Essentially translation, little knowledge of English vocabulary, idioms, word form or not enough to evaluate
		25-22	<b>Excellent to very good:</b> effective complex construction, few errors of agreement, tense, word order, articles, pronouns, preposition
		21-18	<b>Good to average:</b> effective but simple construction, minor problems in complex construction, several errors of agreement, tense, number, word order/function, articles, pronouns, preposition but meaning seldom obscured
4	Language Use	17-11	<b>Fair to poor:</b> major problem in simple/complex construction, frequent error of negation, agreement, tenses, number, word order /function, articles, pronouns, preposition and/or fragment, run-ons, deletion, meaning confused or obscured
		10-5	<b>Very poor:</b> virtually no mastery of sentence construction rules, dominated by errors, does not communicate, or not enough to evaluate
		5	<b>Excellent to very good:</b> demonstrate mastery of conventions, few errors of spelling, punctuation, capitalization, and Paragraphing
		4	<b>Good to average:</b> occasional error of spelling, punctuation, capitalization, Paragraphing, but meaning not obscured
5	Mechanics	3	<b>Fair to poor:</b> frequent error of spelling, punctuation, capitalization, Paragraphing, poor handwriting, meaning confused or obscured
		2	<b>Very poor:</b> no mastery of convention, dominated by errors of spelling, punctuation, capitalization, Paragraphing, handwriting illegible, or not enough to evaluate

Based on the above marking scheme, the researcher used criteria below to assess students' writing quality that range from Excellent to Very Poor writing quality:

Score	Classification
100 – 88	Excellent to very good
87 – 75	Good to average
74 – 64	Fair
63 – 49	Poor
48 – 34	Very poor

*Adopted from Jacob (1981)*

#### 4.2 Rater

In giving score to the students' writing, two independent raters assessed the students' written product independently without recognizing their name because every piece of drafting was given numeric score. Every rater put students' score in a piece of ESL composition profile provided by Jacob (1981). These two independent raters were the researcher herself and her colleague from the same postgraduate program in Indonesia University of Education. To measure the inter-rater agreement from the two raters, the students' scores of each rater were correlated by using product moment formula as follow:

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2][N \sum y^2 - (\sum y)^2]}}$$

Where:

- r<sub>xy</sub> : coefficient correlation of inter-rater agreement
- x : students' scores from the first rater
- y : students' scores from the second rater
- N : number of respondents

The criteria of coefficient correlation were as follows:

1. If  $r_{xy} > r_{table}$ , it means that there is a significant correlation of inter-rater agreement or it can be accepted.
  2. If  $r_{xy} < r_{table}$ , it means that there is no significant correlation of inter-rater agreement or it is rejected.
- (Arikunto, 1997: 71)

By applying the above formula, the result of  $r_{xy}$  was 0.9 higher than  $r_{table}$  (0.63) and the significant level 5 % (0.05) with N was 10 respondents. It meant that there was a significant correlation of inter rater agreement from the two raters in assessing the students' writing result.

## 5. Findings and Discussion

These findings answered the research question of this research namely: what is the difficulty of students' writing in composing a descriptive text? This involved some points that refer to the students' writing scores. The researcher assessed students' composition in a piece of ESL composition profile provided by Jacob (1981). After the assessment of students' writing quality from the two independent raters had been accomplished, the results were averaged by the writer to get final score of each student.

### 5.1 Descriptive Statistic of Students' Writing Difficulty

Descriptive statistic was used to investigate the whole description of students' writing difficulty in composing a descriptive writing in terms of content, organization, vocabulary, language use, and mechanic. Here, all students' scores were calculated into statistical description that consisted of mean, range, median, mode, maximum score, and minimum score. For more clearly, the descriptive statistics of students' writing quality were shown in the following table:

**Table 2.** Data of Descriptive Statistic of Students' Writing Quality

Mean	Median	Mode	Max. Score	Min. Score	Range
46,28	42.5	40	73	34	39

From the above table, we can see that the mean score of students' writing quality in composing a descriptive text was 46,28. It was obtained by dividing the total of students' score (1388.5) with 30 students as the total respondents. Therefore, according to the criteria suggested by Jacob (1981) about classification of students' writing quality, the researcher interpreted that students' writing quality in composing a descriptive text was categorized as *very poor*. It meant that there were any significant difficulties faced by the students in composing a descriptive text. It could be limited knowledge of subject in term of content, lack logical sequencing in term of organization, frequent errors of words in term of vocabulary, major problems in simple/complex construction and tense in term of language use, or frequent error of spelling, capitalization, and punctuation.

In the same way, the median score of students' writing quality was 42.5 and it was nearly the same as the mean score. It meant that most students got score that ranged from 34-48 and were classified as *very poor* quality. Another fact, the table showed that the most frequently occurring score of students' writing quality or so-called *median score* ranged from 34-48 (*very poor* classification), i.e. 40.

Meanwhile, the range of students' writing quality was 39. It was obtained by reducing the maximum score (73) to the minimum score (34). The range showed that there was still a wide gap between the students who got *average* grade with the students who got *very poor* grade. Below was the summary of all five components of students' writing quality:

No	Writing Components	Mean score	Level of Writing Quality
1	Content	15.36	Very poor
2	Organization	9.4	Very poor
3	Vocabulary	9.5	Fair to poor
4	Language use	9.7	Fair to poor
5	Mechanic	2.1	Very poor

### 5.2 Discussion of Students' Writing Difficulty on Content

Content of writing referred to the students' ability which covered knowledgeable, substantive, thorough development of thesis and relevant to assigned topic as suggested by Jacob (1981). From the above findings, the researcher found that students' writing quality on content was categorized as *very poor*. It meant that students' composition still had significantly limited development of subject and mostly irrelevant to the topic. Respondent 24 for example, in describing about her pet animal namely dog, she still involved some sentences that were not pertinent to the topic sentence. Below was the example of the paragraph:

My pet animal is dog (topic sentence)

*Like pusy very much for its good nature when i call it pusy, it comes to me mewing. (p.3, l.1-2).*

*Like* here did not have reference or subject, so we did not know who liked pusy. *Mewing* was also not pertinent word to the topic sentence because *mewing* referred to a cat while the writer was talking about a dog. So, there was no relationship between the topic and the word used.

Another case of content can be seen from respondent 5, for instance.

*Someone (topic sentence). Brown eyes, Hair curly, she face is so cute. Hair long, Skin white.(p1) you are beautiful, she was my type. You Always's in my heart. I like you someone.(p.2)*

The student's writing above was very lack of substantive matter in content aspect. The content was highly not clear because the lack of many aspects anywhere such as the lack of subject in *Brown eyes* (line 1), .. *Hair long* (line 2). Accordingly, the content was hard to understand.

### 5.3 Discussion of Students' Writing Difficulty on Organization

Organization referred to students' ability in organizing their ideas which covered fluent expression, ideas clearly stated/supported, succinct, well organized, logical sequencing and cohesive (Jacob, 1981: 90). Based on the above findings, students' writing quality on organization was

categorized as *very poor*. It meant that in composing a descriptive text, most students were still loosely organized. We could see example from respondent 21 below (the topic was: Interesting place I have ever visited):

*At house my grandmother. In grandmother house it has a big garden with with lots of colourful flower and a tennis court. and scenic railway, We went to shopping some antique shops and i tried on some old hats*

By seeing the above description, we may get confused. In the above paragraph, it was obvious that the writer did not use any transition element to relate every statement that had connection. Also, the writer did not state clearly the topic sentence of the paragraph being discussed. Hence, the readers felt confused to investigate the main idea that wanted to be conveyed by the writer.

We could also see other example as follow:

*I want to Describe a interesting place that I've visited and time name is "Tangkuban Perahu", is a mountain with a lot of hIstory. much touris visited. Mountain Tangkuban Perahu.*

*Mountain Tangkuban Perahu the air is fresh . even the weather is very Hot, a lot of touris, for taking picture.*

That was a writing from respondent 6. After seeing this writing, it was really hard to understand. The organization was very low. The ideas seemed to be overlapping without having any clear transition to follow or to connect one idea with one another. Besides, some words just appeared suddenly without having clear purpose why it appeared or to what sentence it was connected like **much touris visited**. "**is a mountain**" was also a starting sentence that was confusing because it did not have subject. The usage of wrong punctuation also really damaged the unity and the organization of the above paragraph that made the reader was getting harder to catch the meaning.

#### 5.4 Discussion of Students' Writing Difficulty on Vocabulary

Vocabulary referred to the students' ability in applying English vocabulary which covered sophisticated range, effective word/idiom, word form mastery and appropriate register (Jacob, 1981: 90). From the above findings, the researcher found that students' writing quality on vocabulary was categorized as *fair to poor*. It meant that in composing descriptive text, most students' writing still conveyed limited range of ideas, frequent errors of word and even the meaning was mostly obscured or was not clear.

Take students' writing from respondent 2, for instance as can be seen below:

*I love someone, He is have body high and he have skin brown. He have slant eys, and pointed. Be side that, he have a sweet smile. Have brown hair. Sometime he drawing hair become black or colourful. And he very handsome.*

Throughout these sentences, there were many unsuitable words being used that really obscured the meaning being conveyed. **Body high**, for example, did not show the compound word formation correctly. **High** itself was *not suitable* to be used with **body**, except for things such as *high building* and *high tree*, or for score such as *high score*. The suitable one should be tall. Then "**is have**" was not appropriate word here, even it made the sentence wrong. It should be **has** not **have** because it follows third singular person. Then, the word **be side** should not be separated, instead it was one word. So, it should be **beside that**. Again, "**sometime he drawing hair**" seemed to be essentially translated from Indonesian and it was actually hard to understand. The appropriate statement, then, should be "**his hair's colour**".

#### 5.5 Discussion of Students' Writing Difficulty on Language Use

Language use referred to the students' ability in applying the English grammar correctly on their writing which covered effective complex construction, agreement, tense, number and word order/function, article, pronoun and preposition as suggested by Jacob (1981: 90). Based on the above findings, students' writing result on language use was categorized as *fair to poor*. It meant that students' writings were still dominated by major problems in simple/complex construction, confusing meaning, and frequent error of agreement and tense.

To enlighten this point, student's writing from respondent 1 can be taken as an example:

*He's come from South Korea. (P.1, L.3) He profession like model, singing, presenter, actor, and he have group name is Super Junior. (P.1, L. 4-5)*

In using the verb, the writer really showed a very limited knowledge. Since, this was descriptive text, so the verb being used should be present tense. In his writing, the writer stated *s* as contraction of *is* instead of just putting the *s* at the end of the word *come*. So, the correct verb should be “*He comes from*”. Then, “*he profession like*” also seemed essentially translated and thus did not produce sentence that was grammatically correct. The effective one should be “*his professions are*” since the professions are plural it should be ended by *s*. *Singing* here was not parallel with others. Because *singing* was a verb while others are noun, it should be turned into noun to be *singer*. “*He have group name*” was not a correct word order. The correct one should be “*his group’s name*”.

#### 5.6 Discussion of Students’ Writing Difficulty on Mechanic

Mechanics referred to the students’ ability in applying mechanic correctly on their writing, which covered spelling, punctuation, capitalization, paragraphing, and handwriting, as suggested by Jacob (1981: 90). Based on the above findings, students’ writing quality on mechanic was categorized as *very poor*. It meant that in composing descriptive text, most students still made significant errors either in spelling, punctuation, capitalization, paragraphing, handwriting, or frequently confusing meaning.

Respondent 12 for example, made many errors in these points. Below were the examples of the errors:

- Spelling : *thas* (paragraph 1, line 1), *taurist* (paragraph 2, line 1), *clos* (paragraph 3, line 1), *vactory* (paragraph 3, line 1).
- Capitalization : *Describe* (paragraph 1, line 1), *InterestIng* (paragraph 1, line 1), a *Beach* ( paragraph 1, line 3), *In* (paragraph 1, line 3), *Sand* (paragraph 2, line 2), to *Make* (paragraph 2, line 2),
- Punctuation : *the name is Anyer Beach*, (paragraph 1, line 2), *is a Beach in Banten*, (paragraph 1, line 3), *to Make a castle* (paragraph 2, line 2).

The word “*thas*” should be changed into “*that*”, *taurist* → *tourist*, *clos* → *close*, *vactory* → *factory*. In terms of capitalization, all the above words were not proper nouns and were found in the middle of the sentence thus all should be written in small case. Therefore the correct written form will be *describe*, *interesting*, *a beach*, *in*, *sand*, and *to make*. Next, in terms of punctuation, “*the name is Anyer Beach*,” and “*is a Beach in Banten*,” as well as “*to Make a castle* “ should be ended by full stop. So, it will be “*the name is Anyer Beach.*” and “*is a Beach in Banten.*” as well as “*to Make a castle.*”.

## 6. Conclusion

Based on the presentation of the above findings and discussion, the researcher concluded that students in the concerned SMK in Kendari had *significant difficulty* in composing a descriptive text. It was proved by the mean score of students’ writing quality, i.e. 46 or classified as *very poor* based on the criteria suggested by Jacob (1981). It meant that most of the students still faced many problems, either limited knowledge of subject, non fluent organization of ideas, frequent errors of word, major problems in simple/complex construction and tenses, or frequent error of spelling and punctuation.

## ACKNOWLEDGEMENT

The author would like to thank to the Teacher Training and Education Faculty of Halu Oleo University Kendari who give permission and help in this project, and all who contributed so much of their time and ideas. Remaining errors are all mine.

## References

- [1]. Allen, W.P. 1981. A controlling frame for paragraph development. Washington: ESL Reporter
- [2]. Arikunto, S. 1997. *Prosedur penelitian suatu pendekatan praktek*. Jakarta: PT. Adi Mahasatya.
- [3]. Bereiter, C., & Scardamalia, M. 198). *The psychology of written expression*. Hillsdale, NJ:Erlbaum.
- [4]. Byrne, Donn. 1988. *Longman handbooks for language teacher. Teaching writing skills*. UK: Longman Group UK Limited.
- [5]. Elbow, P. 1981. *Writing with power: Techniques for mastering the writing process*. Oxford: Oxford University Press.

- [6]. Gerot, L. & Wignell, P. 1995. *Making Sense of Functional Grammar*. Australia: Antipadean Educational Enterprises (AEE).
- [7]. Grabe, W. & Kaplan, R. B. 1996. *Theory and practice of writing*. London: Addison Wesley Longman.
- [8]. Graham, S. 1990. The role of production factors in learning disabled students' compositions. *Journal of Educational Psychology*, 82: 781-791.
- [9]. Graham, S., & Harris, K. R. 1991. Self-instructional strategy development: Programmatic research in writing. In B. Y. L. Wong (Ed.), *Contemporary intervention research in learning disabilities: An international perspective* (pp. 47-64). New York: Springer-Verlag.
- [10]. Graham, S., & Harris, K. R. 1994. The role and development of self-regulation in the writing process. In D. Schunk & B. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications* (pp. 203-228). Hillsdale, NJ: Erlbaum.
- [11]. Graham, S., & Harris, K. R. 1997. It can be taught, but it does not develop naturally: Myths and realities in writing instruction. *School Psychology Review*, 26, 414-424.
- [12]. Graham, S., Harris, K. R., & Troia, G. A. 1998. Writing and self-regulation: Cases from the self-regulated strategy development model. In D. H. Schunk & B. J. Zimmerman (Eds.), *Developing self-regulated learners: From teaching to self-reflective practice* (pp. 20-41). New York: Guilford Press.
- [13]. Hammond, Jenny. 1992. *English for Social Purposes*. Sidney: Macquarie University Sydney.
- [14]. Harris, J. 1993. *Introducing writing*. London: Penguin.
- [15]. Jacobs, H. L., Stephen, D. V., & Faye, Jane. 1981. *Testing ESL composition profile: A practical approach*. London: Newbury House Published.
- [16]. Khusnun, M. 1996. A study of students' errors on essay English writing of the semester sixth of the English department of FKIP Unhalu. Unhalu: Undergraduate Thesis
- [17]. Msanjila, Y. P. 2005. Problems of writing in Kiswahili: a case study of Kigurunyembe and Morogoro secondary schools in Tanzania. *Nordic Journal of African Studies*, 14(1): 15-25.
- [18]. Nunan, D. 1991. *Language teaching methodology*. London: Prentice Hall.
- [19]. Nunan, D. 1999. *Second language teaching and learning*. Boston: Heinle & Heinle publisher.
- [20]. Nurudin. 2007. *Dasar-dasar penulisan*. Malang: UMM Press
- [21]. Reid, J.M. 1993. *Teaching ESL writing*. United States: Prentice Hall
- [22]. Shaughnessy, M. 1977. *Errors and expectations: A guide for the teacher of basic writing*. New York: Oxford University Press.
- [23]. Sudarso. *Panduan Belajar Bahasa Inggris 10 SMA*.
- [24]. Sudarso & Brata, P. D. *Panduan Belajar Bahasa Inggris 12 SMA IPA*.
- [25]. Sudjana. 1992. *Metode statistik*. Bandung: Tarsito
- [26]. Sugiyono. 2007. *Metode penelitian pendidikan (pendekatan kuantitatif, kualitatif, dan R & D)*. Bandung: Alfabeta.
- [27]. Torrance, M., Thomas, G. V., & Robinson, E. J. 1991. Strategies for answering examination essay questions: Is it helpful to write a plan? *British Journal of Educational Psychology*, 61: 46-54.
- [28]. Troia, G. A., & Graham, S. 2003. Effective writing instruction across the grades: What every educational consultant should know. *Journal of Educational and Psychological Consultation*, 14, 75-89
- [29]. Wahyudi, Didi. 2009. *Students' Narrative Texts in Bahasa Indoensia and English: Correlation and Textual Features*. Bandung: Universitas Pendidikan Indonesia.
- [30]. Yan, C. M. W., et. al. 2011. Writing quality in Chinese children: speed and fluency matter. *Read Write*, (2012) 25: 1499-1521.

# Perception of Rice Farmers on The Role of Agriculture Extension Field : (Case Study in Dodaga Village East Wasile District East Halmahera Regency)

**Linda Umasugi**

Agribusiness Study Program, Faculty of Agriculture, Muhammadiyah University of North Maluku

**Abstract.** This study aims to determine the behavior of rice farmers on the performance of agricultural extension field in Dodaga Village, East Wasile District, East Halmahera Regency. And the method in this research by using descriptive method, population in this research are all of rice farmers which amounted to 30 farmer. Data analysis concurrent with data collection process starting from reduction, presentation, and verification or in conclusion by using behavior scale that is liker scale to measure agriculture extension field performance. From these measurements can be explained that the performance of agricultural extension field in Dodaga Village East Wasile District East Halmahera Regency with very good category. The performance of an agricultural extension field in performing his duties and functions is very good, which means it can reflect the performance of extension workers as a guidance for the progress of farmers, performance extension workers as guidance score of 103% with very good category, while educators get 99% score with very good category, and leaders scored 99 with good category, while consultants scored 99 with good category.

**Keywords.** *Presentation, Roles, Agricultural Extension*

## **1. Preliminary**

### **1.1. Background**

Agricultural Extension Field plays a role to support the work of rice farmers. Therefore to increase the active role of farmers needed of a guidance which is form counseling held by PPL. The performance of PPL is very important in helping farmers to solve the problems of the farmers. More better the performance of PPL in carrying out its duty then better the results earned by farmers. To earn a good performance PPL must be supported by several factors. To improve the performance of PPL in doing counseling are motivation, appreciation from government, facility given to PPL and also training done by PPL.

The PPL in East Wasile district is 12 people spread in 8 PPL villages in East Wasile district is a mixed PPL polivalen or PPL in fields, agriculture, farms and fishery. Farms PPL are 4 people PPL, While the fishery PPL there are 3 people. Farming PPL is the most much as 5 people PPL, the activity of counseling in every Village doesn't active all especially in field of fishery. Agricultural extension activities are often done by PPL is in Dodaga Village who rice farmers found there.

### **1.2. Formulation of the problem**

Based on the above description, the problem that can be formulated in this research is how the perception of rice farmers on the role of PPL in Dodaga Village East Wasile District East Halmahera Regency?

### **1.3. Research purposes**

The purpose of this research is to know the perception of rice farmers on the role that has been done by PPL in Dodaga Village, East Wasile District

### **1.4. Research Benefits**

The benefits of this research are:

1. For the government as the policy maker, can determine the appropriate policy to improve the Performance of agricultural extension.
2. For the government can be made as input to take decision in improving Performance extension worker in conducting their programs.

3. for the role of extension counselor in high up in carrying out his duties as an agricultural extension, which mainly the application of technology because rice farmers most of the less understand the new technology.
4. To be a driver or motivation for further study to develop a of extension workers performance in a broader range.

## 2. Research Methods

### 2.1 Place and Time of Research

This research was conducted in East Wasile District in Dodaga Village of East Halmhera Regency, which began on January 20, 2018 until February 2018

### 2.2 Sampling Method

The population of wetland paddy farmers in the village of East Wasile District is 30 people, for that all used as samples, the way sampling is done by observation, by doing wawacara with rice farmers.

### 2.3 Data Analysis Method

**Table 1.** Matrix Instrument Researcher

Variable	Dimention	Indicator
	The role of extension worker as a farmer's guide	<ol style="list-style-type: none"> <li>1. Guiding/visiting extention worker</li> <li>2. Provide guidance of farming techniques to farmers</li> <li>3. Having opinion/idea</li> </ol>
	The role of extention worker as educator	<ol style="list-style-type: none"> <li>1. Expert on matrial</li> <li>2. The material of counseling appropriate to the farmers needed</li> <li>3. Giving information and briefing</li> <li>4. Extention worker giving the information to the farmer</li> </ol>
	Perception of rice farmers on the role of Agriculture extention field	The role of extention worker as leader
The role of extention worker as consultan		<ol style="list-style-type: none"> <li>1. Hold a discussion/consultation</li> <li>2. Introducing the new information and technology</li> <li>3. Cooperation of farmer groups with related institution/</li> <li>4. Exchanging idea about the constraints faced by farmer</li> </ol>

### 2.4 Stages of Data Analysis

From the data that has been through the analysis phase is done scoring stages based on data sourced from respondents research referred. Scoring is done by item in the Appendix.

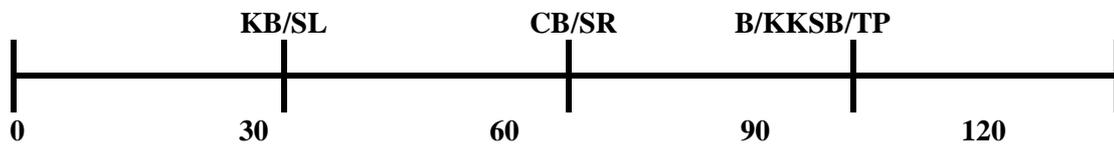
The research instrument is filled with the stipulation that each indicator is assessed with a score of 1- 4, with the following research

- a. Very good (SB)/Always (SL) value = 4
- b. Good (B) / Often (SR) value = 3
- c. Good enough (CB) / Sometimes (KK) value = 2
- d. Less good (KB) / Never (TP) nilanya = 1

The criteria for assessment are as follows:

- a. Number of scores ideal for item 1 =  $4 \times 30 = 120$  (SB / SL)
- b. Total score =  $3 \times 30 = 90$  (B / SR)
- c. Total score =  $2 \times 30 = 60$  (CB / KK)
- d. Number of lowest scores =  $1 \times 30 = 30$  (KB / TP)

The next step is measured using quantitative.



### 3. Result And Discussion

#### 3.1. Gender

**Table 2.** Respondent Spread by Gender of Dodaga Village of Wasile Timur District

No	Gender	Soul Amount	Presentation (%)
1	Male	25	83
2	Female	5	17
<b>Amount</b>		<b>30</b>	<b>100</b>

Primary data source in 2018

Table 2. shows that the respondents located in Dodaga Village, East Wasile District are more dominated by men because men are more around 25 people or 83% and female 5 people or 17%.

#### 3.2 Age

**Table 3.** Distribution of Respondents According to farmer age of dodaga village East Wasile

No	Age	Person Amount	Presentation (%)
1	30—38	13	43
2	40—45	9	30
3	50—67	8	27
<b>Amount</b>		<b>30</b>	<b>100</b>

Primary data sources in (2018)

Table 3 then the lowest age of rice farmers is 30 years old whereas the oldest is 67 years old and most of them are farmers aged 36-46.

#### 3.3. Education

**Table 4.** Distribution of Respondents According to Formal Education Level of Dodaga Village

No	Education	Last Person Amount	Presentation (%)
1	SD	15	50
2	SMP	8	27
3	SMA	7	23
<b>Amount</b>		<b>30</b>	<b>100</b>

Primary data source in 2018

**Table 5.** Identity of respondents Based on Number of Dependents rice farmers in Dodaga village East Wasile District East Halmahera Regency

No	Dependents Amount	Person Amount	Presentation (%)
1	2—3	26	87
2	3—4	4	13
<b>Amount</b>		<b>30</b>	<b>100</b>

Primary data source in 2018

**Table 6.** Respondent Identity Based on Rice Farmer income/monthly in Dodaga Village, East Wasile district, East Halmahera Regency.

No	Farmer Income/Month	Person Amount	Presentation (%)
1	1.000.000—2.000.000	24	80
2	2.000.000—3.000.000	6	20
<b>Amount</b>		<b>30</b>	<b>100</b>

*Primary data source in 2018*

### 3.4 Discussion

Perception of rice farmers on the role of agricultural extension field (Case Study of Dodaga Village, East Wasile District) is measured by using Likert scale by giving question to farmer respondents. This behavior is measured with scale 1—4 on four aspects that is the role of extension worker as supervisor, the role of extension worker as an educator, the role of extension worker as a consultant, the role of extension worker as a leader.

### 3.5. Agricultural Extension Performance

Agricultural extension is a policy tool that can be used by the government to encourage agricultural development, on the other hand, farmers have the freedom to accept or reject the facilities provided by agricultural extension field. Thus the extension agent can only achieve its goal if the desired change is in accordance with the interests of farmers. The performance of an extension worker is a reflection for farmers to raise awareness to do their farming, for farmers.

#### a) Performance of extension worker as guide

An extension worker is a guide and teacher for farmers in non-formal education, extension workers have a high idea to overcome obstacles in agricultural development from the farmers and their families. So the performance of extension workers is shown to the farmers as a true extension worker can guide the farmers well and extension workers should be familiar with the agricultural system, sympathetic to the life of farmers and decision making in the farmers both in theory and practice.

The performance of extension workers as a guidance of farmers in Dodaga Village East Wasile District East Halmahera Regency, can be seen in table 7 below:

**Table 7.** Performance of counselor as mentor.

No	Indicator	Score	Category
1	Guiding/visiting extension worker	102	Very Good/Always
2	Provide guidance of farming techniques to farmers	101	Very Good/Always
3	Having Opinion/Idea	106	Very Good/Always
<b>Average</b>		<b>103</b>	<b>Very Good/Always</b>

*Processed Data 2018*

Table 7 can be seen that the performance of extension worker as a guide can have an average value obtained is 103 with categories Very good / always. From all indicators for the performance of extension worker who is in Dodaga village East Wasile District who get the highest score is how the extension worker provide guidance of rice field cultivation technique that is with score 106 with category very good / always. Which means the extension worker is not fully present every day but at least the active extension worker gives the counseling when the rice farmers get problems about the cultivation of rice crops.

#### b) Performance of extension worker as educator

Agricultural extension workers are at war as educators for farmers, so that the performance shown is really mandidik the farmers and able to lead the farmers towards the better and the extension is also a means of learning process by facilitating farmers to instill a sense of beneficial behavior toward active use refers to the practice of technology package more modern agriculture from central government, regency and district policy programs to farmers. Performance extension worker as a farmer educator in Dodaga Village East Wasile District can be seen in table 8 below:

**Table 8.** Performance of extension workers as educators

No	Indicator	Score	Category
1	Expert on material	99	Good/ often
2	The material of counseling appropriate to the farmers needed	97	Good/ often
3	Giving information and briefing	96	Good/ often
4	Extension worker giving the information to the farmer	104	Very Good/always
<b>Average</b>		<b>99</b>	<b>Good/ often</b>

Primary data source in 2018

Table 8 shows the performance of extension workers as educators can get an average value of 99 dengn categories very good / often. Of all the indicators for kinirja counselors as educators who are in the Village District East Wasile District East Halmahera who get the highest score is How the extension provide information and mengarakan to farmers with a score of 104 with the category very good / always. Which means the material extension that is conveyed at the time of a counselor to the farmers mengedi rice farmers on target and in accordance with what is needed by farmers for this and educate rice farmers to remain independent and not dependent on the extension in implementing the farm.

c) Performance of counselor as a leader

Extension worker are guided to have the ability of knowledge and skills are quite good performance in communicating with farmers to provide explanations that can eliminate to the consideration of farmers in the application of new technology information that conveyed related to the farming. Performance of extension worker as a leader is able to reflect good ethics and behavior when communicating with farmers both when giving field schools to farmers and direct interaction.

Performance extension worker as a leader of rice farmers in Dodaga Village District East Wasile District East Halmahera regency, can be seen in table 9 below:

**Table 9.** Extensionist performance as a leader

No	Indicator	Score	Category
1	Guidance and motivation	98	Good/often
2	Discipline of work in conducting counseling activities	100	Very good/always
3	Good communication	98	Good/often
<b>Average</b>		<b>99</b>	<b>Good/often</b>

Primary data sources in (2018)

Table 9 shows the performance of extension worker as a leader can get the average value of 99 with good / often category. From all indicators for the performance of extension workers as a leader which located in Dodaga Village East Wasile District East Halmahera Regency who get the highest score is how the performance of extension workers in carrying out conseling activities with a score of 100 with the category very good / always, which means extension worker not only able to provide conseling materials but an extension worker in the guidance to provide the best and able to be sampled by rice farmers with high discipline behavior and present on time in carrying out conseling tasks.

d) Performance of extension worker as consultant / consultation

The success of the extension worker to reach the target stage, the extension worker should be able to provide clues to some examples of work which in the end the extension worker can generate confidence to the farmer. One of them uses the method of field demonstration so that the behavior of the farmer's desire can arise, the extension worker should be able to apply the performance of concern to the farmers by consulting what problems faced by farmers now, sometimes farmers are very difficult to discuss with extension worker so that the extension worker should have shared a way for apply to the farmers. To immediately apply a material extension that conveyed extension to the farmer who eventually the farmers are able to pay attention to what is disuluhkan in helping farmers overcome the problems it faces.

Performance of extension worker in Dodaga Village, East Wasile District, East Halmahera Regency, can be seen in table 10 below:

**Table 10.** Extension Worker Performance As a consultant

No	Indicator	Score	Category
1	Hold a discussion/ consultation	100	Very Good/always
2	Introducing the new information and technology	99	Good/often
3	Cooperation of farmer groups with related institution/ related institutions	95	Good/often
4	Exchanging idea about the constraints faced by farmer	100	Very Good/always
<b>Average</b>		<b>99</b>	<b>Good/often</b>

*Primary data source in 2018*

Table 10 shows the extension worker performance as a consultant can be obtained an average value of 99 with good / often category. From all indicators for the performance of extension worker in Dodaga Village, East Wasile district, who obtained the highest score is the extension worker in holding discussions / consultants with farmers with a score of 100 and the category very good / always, which means a extension worker also requires input or advice from farmers instead of just extension worker who provide input to farmers.

#### 1. Recapitulation of Agricultural Extension Role

No	Extension Worker's Role	Score	Category
1	Extension worker as guidance	103	Very Good/always
2	Extension worker as educator	99	Good/often
3	Extension worker as leader	99	Good/often
4	Extension worker as consultan	99	Good/often
<b>Average</b>		<b>100</b>	<b>Very Good/always</b>

The table above can be seen that the role of extension worker as a guide can have an average value obtained is 103 with the category very good / always. While the role of extension worker as an educator to get the average value of 99 with good / often category, and extension worker as a leader get the average value of 99 with good / often category, while the latter as a consultant to get the average value 99 with good / often category. The role of extension worker as guide, educator, leader, consultant, the average value obtained is 100 with the category very good / always.

## 4. Conclusions And Suggestion

### 4.1. Conclusion

Performance of an agricultural extension field in performing their duties and functions are considered very good which means can reflect the performance of extension workers as a guidance for the progress of farmers, performance extension worker as guiding score 103 with the category very good / always, while educators get score 99 with category very good/always, and the leader scored 99 with good category, while the consultant scored 99 with good / often category.

### 4.2. Suggestion

The performance of agricultural extension field in Dodaga Village, East Wasile District is very good, because the performance is shown to farmers starting from the performance of extension workers as educators, guidance, leaders, as well as consultants in communicating with the rice farmers are very good in carrying out their duties a PPL.

1. For that the extension worker must maintain its performance for better more. In the effort to implement performance discipline not good.
2. For that the necessity of a extension worker before the counseling set time and agenda work.

## References

- [1]. Adjid, a.d. 1994. *Kebijakan Swasembada dan Ketahanan Pangan. Proseding Symposium Penelitian Tanaman Pangan III. Puslitbang Tanaman Pangan*. Balibang Deptan
- [2]. Bimo Walgito. 1994. *Psikologi Sosial*. Yogyakarta
- [3]. Deptan 2007. *Peraturan Menteri Pertanian No.37/Permentan/OT.140/3/2007 tentang Pedoman Pembinaan Tenaga Harian Lepas Tenaga Bantu Penyuluh Pertanian*
- [4]. Desminiarti. 1991. *Theory of Planned Behaviour* Dalam Penelitian Sikap, dan perilaku. Kelola No. 18 VII/1998. MM UGM. Yogyakarta
- [5]. Erlangga . 1989. *Teori-Teori Belajar*. Jakarta
- [6]. Kartasapoerta.g. 1991. *Tenologi Penyuluhan Pertanian*. Bumi Akasara: Jakarta
- [7]. Mardikanto dan Surtarmi. 1993. *Petunjuk Penyuluhan Pertanian*. Usaha Nasional : Surabaya
- [8]. Mardikanto 1993. *Petunjuk Penyuluhan Pertanian*. Usaha Nasional: Surabaya
- [9]. Murniati, K., Aviati, Y. 2005. *Kinerja Penyuluh Pertanian Dalam Penerapan Teknologi Pertanian Padi Sawah Di Lampung Selatan*. Jurnal SosioEkonomika. Fakultas pertanian, Universitas Lampung. Bandar Lampung.
- [10]. Notoatmodjo, Soekidjo. 2003. *Pendidikan dan Perilaku Seseorang*. Rineka Cipta. Jakarta.
- [11]. Notoatmodjo. 2003. *Pendidikan dan Perilaku* . Rineka Cipta Jakarta
- [12]. Notoatmodjo. 2007. *Ilmu Perilaku* . Jakarta
- [13]. Nurjanah. 2012. *Kinerja Penyuluh Pertanian Lapangan (PPL) dan Produktivitas Usahatani Padi di Kabupaten Tanggamus (Kasus di Wilayah BP3K Model dan Non Model)*. Skripsi. Bandar Lampung. Unila.
- [14]. Poerwadarminta 1976 . *Kamus Besar Bahasa Indonesi Tentang Perilaku*. Jakarta
- [15]. Samsudin U.S. 1997. *Dasar Dasar Penyuluhan dan Modernisasi Pertanian* Usaha nasional : Surabaya
- [16]. Suhardiyono, L. 1992. *Penyuluhan : Petunjuk Bagi Penyuluh Pertanian*. Erlangga. Jakarta.
- [17]. Sugiyanto. 1996. *Perilaku Masyarakat Tentang Penyuluhan Pembangunan dalam Pembangunan Masyarakat Pedesaan*. Disertasi Program Pasca Sarjana IPB : Bogor.
- [18]. Kartasapoetra, A.G. 1988. *Teknologi Penyuluhan Pertanian*. Bumi Aksara. Jakarta.
- [19]. Van den ban, A. W., Hawkins, H.S. 1999. *Penyuluhan Pertanian*. Penerjemah; Herdiasti, A.D. Yogyakarta: Kanisius.: Yogyakarta
- [20]. Walgito 2006. *Psikologi Sosial (suatu pengantar)*. Yogyakarta

# Pasraman as A Media For Establishing A Leader

Made Sila

Faculty of Teacher Training and Education, Dwijendra University-Bali

Email: madesila909@gmail.com

**Abstract.** The Reformation initially gave great hope in building a constitutional democratic life in building a leader who is free from corruption, collusion and nepotism called KKN. KKN practice is not getting worse and even growing. The coveted democratic democracy turns into a democracy that goes too far and leads to anarchism. To overcome the problem and to be able to form a clean and authoritative leader should we start from the lowest formal and informal education, in Bali one of the informal education developed is *Pasraman*. Education of *Pasraman* is expected to be able to form a young generation who have good character as a basis to become leaders in the future. The purpose of this study is to determine the role of pledge in inculcating the soul of leadership in the young generation is clean and authoritative.

The approach used in this research is qualitative with descriptive method, Data collection using research instrument in the form of questionnaires given to respondents consisting of *Bendesa adat (Head of traditional village)*, *Majelis desa pakraman (the assembly of traditional village)*, head of establishment of *pasraman* at the regency and provincial levels.

The research findings show that *pasraman* education that emphasizes attitude and skill by instilling knowledge can be an example in the formation of learner character and with more systematic debriefing will be able to cultivate the leadership spirit of the young generation. Researchers recommend to the manager of *Pasraman* to improve the form of coaching and in cooperation with related parties, such as traditional village, the assemblies of traditional villages at the regency and provincial levels and government. *Pasraman*, therefore, can be a media of education that can solve the problem of emotional and spiritual crisis of intelligence in order to form a clean and authoritative young generation leader.

**Keywords:** *Pasraman, young generation, education, traditional village, and government*

## 1. Introduction

Clean governance that will be realized after the reform is the practice of administration that can institutionally prevent and maintain the desire, and the will to benefit personal, family, groups and certain groups. the practice of execution of government should be able to keep the government from all forms of corruption, collusion and nepotism (*KKN*) practice. Clean government means prioritizing the interests of the people compared with the interests of individuals, groups and certain groups, especially in terms of carrying out the main tasks and functions that are based on the spirit and spirit as a servant to the people, not to serve.

Clean government is only done by enforcing the rule of law, accountable to the people, developing public participation, transparent to the public, effective and efficient utilization of resources and institutions, professional public services, and future-oriented. In this case, laws and regulations should be upheld without favoritism, accompanied by efforts to develop local values, norms and ethics as a source of law in a clean society in this view is preserved from the various practices of corrupt, collusive and nepotism (*KKN*) administration. This paradigm shift that needs to be grown in the soul of every leader of this nation, which is systematically developed in the planning and practice of state administration. Reforms that have been rolled in hope to build a constitutional democratic life and build a clean and dignified leader toward *KKN*. So the nation's character builders continue to be blazed along with the emergence of political euphoria as the dialectic of the collapse of the New Order regime. The desire to be a democratic nation, free from Corruption, Collusion, and Nepotism (*KKN*), respect and obey the law are some of the desirable character of the nation's leaders

in the life of society, nation and state. However, after almost twenty years of reality, the reality shows the opposite phenomenon. KKN practice is not getting worse and even growing. The coveted democratic democracy turns into a democracy that goes too far and leads to anarchism. Reform has opened the nuances of freedom, but in reality it has been misunderstood so that the meaning of reform becomes something without form.

To overcome these problems, it is necessary to commit all components of the nation to build the power of the nation in order to grow and develop in accordance with the expectations and meaning of the reform. But because of our leader's recruitment pattern, it is now very difficult for us to set ideal requirements. In the present pattern almost all of our elected leaders are not guided by good, righteous or ideal but by winning and being elected. Therefore the world of education, both formal and informal, should try to prepare, the ideal future leader / generation who not only possess knowledge, intelligence and ability both socially and materially but also have the character, glory and spirit to serve for the benefit of the people .

The establishment of *Pasraman* (a educational institution) in Bali related to national education is to help balance the national education that emphasizes the intelligence aspect of the students more than the emotional and spiritual intelligence. The national education system focuses too heavily on learning patterns to produce children with great brainpower. However, this educational system is simultaneously plunging the generation into a ravine barren of moral values. Leaders are not just smart and clever but also must have a good heart and character. Such conditions clearly endanger the future of the younger generation, as the heir of this nation. Because *Pasraman* can be a place of education to build a young generation as a candidate leader who has intellectual, emotional and spiritual intelligence. In the relation to the above background, this paper will examine the problem can the *Pasraman* as a vehicle for the formation of leaders who have character ?. The purpose of this is to give information and study developing the role of *Pasraman* to form leaders who are characterized.

## **2. Discussion**

### ***2.1. Educational Education As A Character Development Center***

The right effort to build and develop Indonesian people and nations to have good, superior and noble character is through education, because education has an important and central role in the development of human potential, including mental potential. Through education is expected to occur a transformation that can grow a positive character, and change the character of the bad to be good. *Pasraman* is one of the informal education containers of Hindus in Bali. The establishment of *Pasraman* in Bali is related to national education that emphasizes the intelligence aspect of students more than emotional and spiritual intelligence. The national education system focuses too heavily on learning patterns to produce children with great brainpower. However, this educational system is simultaneously plunging the learner into a ravine barren of moral values. These conditions clearly harm the future of the young generation. *Pasraman* can be a place of education that can solve the problem of emotional and spiritual crisis of the young generation.

*Pasraman* education is growing in Bali is a form of embodiment of the pattern of Hindu education, then with the release of Government Regulation No. 55 of 2007 on religious education and religious education. *Pasraman* developed throughout the village of *Pakraman* in Bali and funding is budgeted from the assistance of the Governor through *Pakraman* Village. However, the implementation has not been done continuously, it is only done during school holidays, all the children in *pakraman* village follow the education in *Pasraman* with learning material covering the lesson of the mind, religion, the skill of making *upakara* means and art and culture.

The existence of *pakraman* village has gained more relevance, appreciation and empowerment in the local, NKRI, and global context. Historically, the model of *pasraman* education in Balinese society has very old tradition roots and is older than the school model. Characteristics of *pasraman* education are developed on the basis of indigenous communities, practical competence, natural vibration, spirit of togetherness, spiritual spirit, and cultural insight. Education takes place in a relatively short period of time, limited reach, but national in the knit of wisdom, meaning and discipline. The direction and principles are also instilled are: (1) the existence of the balance of local, national, universal, substance so as not to get caught in narrow fanaticism; (2) the growing balance of cognitive, affective, and motor domains, thus avoiding verbalism; and (3) ensuring actualization and continuity, thus embodied in real life in everyday life. *Pasraman* education is very potential to evoke

identity, character, and moral community. Cultural insights that need to be built not only have to be oriented towards the past, but more important are the balance in the transmission of the nobility of the past, the present factual reality and the opportunities and challenges of the future. The perspective of cultural insight needs to be interpreted as the strengthening of local noble values, the development of new values through national openness, as well as individual and collective empowerment in global competence for harmony, equality, and prosperity.

Education Pasraman need to find a form in accordance with the development of child psychology, so that children can learn with pleasure and can do self-socialization to develop all his potential perfectly. Their relationship with their tutors goes very well with Pasraman's tutors going forward in a very strategic position to foster children's mental attitude from an early age to help strengthen the knowledge that has been given in school. So that the child will develop in plenary, has a good intellectual, emotional, skill in anticipating and organizing life and able to behave in a polite way of life in society. Similarly, in education in Pasraman, aims to form a human person who has noble character, as stated by Swami Sathya Narayana (in Titib, 2003), that the goal of education in general is to "character building" (character building).

## ***2.2. Passages As A Grade Of The Leading Leader Leader***

Pasraman is a specialized educational institution of Hindu religion. This institution is an alternative, because the Hindu religious education is taught in formal schools from the primary school level up to the Hindu high school. In the formal school of Hinduism is taught as a science, while in pasraman is not limited to science, but as a form of spiritual discipline and practice of organizing a good life. In lightning pasraman the development of character values in children diimlemnaktikan memalau stage of knowledge (cognitive), action (action), and habits (habit). Pasraman education emphasizes self-discipline, develops noble character and diligent nature, hard-working, lust-prohibition and fondness to help others. The interesting thing about this pasraman activity is that the learning activities are not limited by the classroom as in the formal school. Students can perform any learning activities that feel comfortable, such as under trees, on the floor or places facilitated by the teacher. In addition, the interaction that exists between teachers and students full of intimacy and sense of kinship without neglecting the boundaries of mutual respect for one another. Therefore, this system is also known by the name of the education system gurukula. Some students live in pasraman with teachers as family members and teachers act as students' own parents. With such a pattern of learning, it is felt to be able to cultivate a sense of trust, open, responsible, have a life skill and of course character. According to Mochtar Buchori (2007), the development of character values should lead children to the recognition of values cognitively, appreciating values affectively, ultimately to actual values of values. To get to praxis, there is a very important inner event that must occur within the child, namely the emergence of a very strong desire (determination) to practice value. Character is developed through knowledge, knowing, acting, and habit. Character is not limited to knowledge alone. A person who has knowledge of goodness may not be able to act in accordance with his knowledge, if not trained (become a habit) to do good. Characters also extend to areas of emotion and habit. Thus required three components of good character (components of good character) that is moral knowing (moral knowledge), moral feeling (moral reinforcement) about moral, and moral action or moral deeds.

According to Arjana (in Artana 2014) some of the learning models used by teachers in Pasrama, among others, by using the method of fostering a Hindu religion known as sad dharma, namely: a) Dharma Tula, which is balanced wirasa or discussion, b) Dharma Wacana, is a Hindu teaching method that can be used to describe the learning material of Hinduism to students, c) Dharma Gita, is a song about dharma or as dharma, meaning Hindu religious teachings are packaged in the form of religious hymns of religious value so that who sang and who listened to the same -they can learn to appreciate and deepen the teachings of dharma, d) Dharma Yatra, which is the effort to improve the understanding and experience of Hindu learning through direct prayer to the holy places, e) Dharma Sadhana, is the realization of dharma teaching that must be instilled to the students in order to improve the quality of self to always be obedient and steady in practicing the teachings of the Hindu religion, such as: making ceremonial equipment yadnya, and f) Dharma Santi, the habit of forgiving each other among fellow people, even among religious people.

Pasraman kilat activity has a very noble purpose. According to Artana et al (2014) Pasraman implementation has two purposes, namely internal goals and external objectives. Internal objectives

include: (1) Thickening the belief (Sradha) of the Young Generation of Hindus against the God, by instilling a habit to be honest with oneself, family and society. (2) Increasing understanding, appreciation and implementation (practice) of dharma teachings among the younger generation of Hindu in everyday life. (3) To train children to familiarize themselves with the teachings of dharma in everyday life both within the scope of family, school, community generally, such as: *Puja Tri Sandya*, *Puja Saraswati*, *Yadnya Sesa*, *Astiti Yadnya*, prayers start and end lessons, respect others. Keep the environment clean and so on. (4) Establish a young generation of Hindus with broad insight, creative, cling to the teachings Dharma, and are prepared to devote themselves to preserving the Dharma teachings. In addition, as for the external purpose is (1) Increase ketaqwaan against God Almighty. (2) Increasing the participation of the young generation in development

Pasraman education holds a very large share in order to achieve the goals of national education. In article 1 paragraph 1 of the Law of National Education System Number 20 Year 2003 explained that there are four components of educational objectives whose attainment is the burden of religious education, namely: (1) having spiritual spiritual power; (2) self-control; (3) personality; and (4) noble character. Associated with the concept, it can be interpreted that pasraman education requires a complete, integral, and integral behavioral change that covers all aspects (potential) that exist in the students themselves. The character formation of the leader is very dominant, all of his life behavior is well planned, then it will be practiced and finally do the replication so that the errors will be fixed soon.

Attitude and behavior must be in accordance with the idealism that is passionate in the minds and feelings of learners, living a moral and simple, honest, consequent and full of commitment and so forth. However, future leaders must also remain realistic and can not ignore the realities of contemporary life, such as the importance of management factors in organizing, the necessity of adjusting themselves in the association of the present, and others. There is no doubt that pasraman has a real contribution in educational development. Moreover, viewed historically, pasraman has extraordinary experience in fostering and developing the community. In fact, pasraman able to increase its role independently by exploring the potential of the community around him. (Sudarsana, 2008)

Human development, not only the responsibility of government or society solely, but the responsibility of all components, including the pasraman world. Pasraman which has historical value in fostering and developing society, its quality must be continuously encouraged and developed. The process of human development that is done pasraman can not be separated from the human development process that is being pursued by the government. (Sudarsana, 2008)

Pasraman as an educational institution that forms and develops moral values, must be the pioneer and inspirator of the nation's moral generation. Thus, development does not become empty but more valuable and meaningful. In accordance with Article 3 of the National Education System Law, it is explained that the national education functioned to develop the ability and form the character and civilization of a dignified nation in order to educate the nation's life, aimed at the development of the potential of learners to become human beings who believe and pious to God Almighty, noble, knowledgeable, capable, creative, independent, and become a democratic and responsible citizen. This provision is of course already valid and implemented in pasraman. Pasraman has long been an institution that forms the character and civilization of the nation and the intellectual life of the nation based on faith and piety to God Almighty and noble morals.

The existence of pasraman as an educational institution founded on the participation of the community, has gained legitimacy in the Sisdiknas Law. The provisions on the Rights and Responsibilities of the Community in Article 8 confirm that the public has the right to participate in the planning, implementation, monitoring and evaluation of education programs. While in Article 9 explained that the Community is obliged to provide support resources in the implementation of education. This provision means ensuring the existence and existence of pasraman as educational institution organized by society and accommodated in national education system. This is further reinforced by Article 15 on the type of education which states that Type of education includes general, vocational, academic, professional, vocational, religious, and special education. Pasraman is one type of education that concerns in the field of religion. Furthermore, at this time pasraman not only serves as a means of religious education alone. However, in its development it turns out that many pasraman also serves as a means of non-formal education, where the students are guided and educated to have

the skills and skills or life skills in accordance with the talents of his sisnyanya. The provisions concerning this nonformal education institution are contained in Article 26 which affirms: (1) Non-formal education is held for community members who require education services that serve as substitutes, enhancers and / or complementary formal education in order to support lifelong education. (2) Nonformal education serves to develop the potential of learners with an emphasis on mastery of knowledge and functional skills as well as the development of professional attitudes and personalities. (3) Non-formal education includes life skills education, early childhood education, youth education, women's empowerment education, literacy education, vocational education and job training, equality education, and other education aimed at developing learners' abilities. (4) Non-formal education units consist of courses, training institutes, study groups, community learning centers, and majors, and similar educational units. (5) Courses and training are organized for people who need knowledge, skills, life skills, and attitudes to develop themselves, develop their profession, work, independent business, and / or continue their education to a higher level. (6) Nonformal educational outcomes can be rewarded on a par with the outcome of a formal education program after going through an equivalency assessment process by a designated agency by the government or local government with reference to national education standards. (Sudarsana, 2008)

Pasraman's educational orientation as a creator of human character is none other than aiming to fill the soul of leadership. A leader who has a level of intellectual intelligence (IQ), emotional intelligence (EQ) and spiritual intelligence (SQ) that menyahi. Currently what is needed by Indonesia in the context of politics, economy and culture in the global level is the realization of independent and independent one hundred per cent. A condition, in which we as a nation can afford and dare to take care of ourselves without any determination and intervention by a foreign country. To reach that direction is clearly needed leaders who berkarakter. Prukaman function as a selection of leadership that this characteristic is a long-running civilization as reflected in the ethos of Ramayana and Bharata yuda. Listening to the concept of Pasraman idealism above the implied meaning that laden a leader is must have a character that is really mature, has the establishment of intellectuality and spirituality.

### **3. Closing**

#### **3.1. Conclusion**

1. The future leader is a leader who has the ability to visioner the ability to estimate the development of the times, have the attitude and behavior in accordance with the ideals that are vibrant in the mind, moral life and simple, honest, consistent and full of commitment. Nevertheless the future leaders must also remain realistic and can not ignore the realities of contemporary life, such as the importance of management factors in organizing, the necessity of adjusting in today's society, understanding the problems of life and contemporary life, laden with challenges, competition, changes to life better.
2. Pasraman education as a non-formal education can help the formation of a leader who is smart, competent and competitive and has a good character karenan education orientation Pasraman as a human-character printer is none other than aim to fill the soul of leadership. A leader who has a level of intellectual intelligence (IQ), emotional intelligence (EQ) and spiritual intelligence (SQ) is adequate.

#### **3.2. Suggestion**

1. All formal educational institutions. Informal and non-formal continue to strive to instill knowledge, foster character and build skills to shape future leaders
2. Pasraman as an educational institution that shapes and develops moral values, must be the pioneer and inspirator of the nation's moral generation. Thus, development does not become empty but more valuable and meaningful.

### **Bibliography**

- [1]. Astana, I Made, C.S. Anomdiputra, *Kautilya (Canakya) Arthashastra*, Paramita, Surabaya, 2003.
- [2]. Awanita, Made, *Agama Hindu (Modul Orientasi Pembekalan Calon PNS)*, Proyek Pembibitan Calon Tenaga Kependidikan Biro Kepegawaian Sekretariat Jenderal Departemen Agama RI, Jakarta, 2003.
- [3]. -----, dkk, *Bahan Dasar Peningkatan Wawasan Kependidikan Guru*

- [4]. *Agama Hindu*, Departemen Pendidikan Nasional, Bagian Proyek Peningkatan Wawasan Keagamaan Guru, Jakarta, 2001.
- [5]. Bagus Wirawan,A.A., dkk, *Dharma Agama dan Dharma Negara*, Balai Pustaka, Denpasar, 1995.
- [6]. Budiman, Arief. *Dimensi Sosial Ekonomi dalam Konflik Antar Agama di Indonesia dalam Dialog Kritik & Identitas Agama*. Intertidei: Yogyakarta, 2003
- [7]. Sapta Wiguna, I Wayan. 2015. Pesraman Sebagai Media Pendidikan. <http://www.majalahraditya.com>. Diakses Tanggal 7 Mei 2016.
- [8]. Sudarsana, I Ketut. 2008. Pengembangan Asram dalam Kerangka Sisdiknas. <https://iketutsudarsana.file.wordpress.com>. Diakses Tanggal 7 Mei 2016.
- [9]. Suryanto, 2004, 'Problematika Penyelenggaraan Pendidikan Berbasis Hindu di Indonesia, Sebuah Kajian dari Perspektif Pendidikan Hindu Tradisional Model *Gurukula* di India', Tesis Universitas Negeri Yogyakarta: Yogyakarta
- [10]. Titib, Made. 1996. *Veda Sabda Suci Pedoman Praktis Kehidupan*. Surabaya : Paramita.
- [11]. Wiana, I. K., Penerapan Ajaran Weda di Bali, *Majalah Hindu Raditya*, Juni 2000, hal 26

# The Effect of Organizational Culture to Employee Performance Through the Work Environment in Harbormastership and Authority of Port Class III Tarakan

Marisi Manalu and Ana Sri Ekaningsih

Sekolah Tinggi Ilmu Ekonomi Bulungan Tarakan

**Abstract.** The purpose of this study is to influence the organizational culture on the performance of employees through the work environment at the KSOP Class III Tarakan. Result of research and data analysis found organizational culture have significant effect to work environment with t value counted 2,597 with significant 0,013 less than 0,05. The organizational culture directly affects the employee performance significantly with the proven t value of 4.467 with a significance value of 0.000 and smaller than 0.05. Work environment t value of 3.366 with a significance value of 0.002 and smaller than 0.05 means there is a positive and significant influence between work environment variables on employee performance. Given the magnitude of F value= 24.360 with a significance of 0.000 smaller than 0.05 together the organizational culture variables and work environment have a significant effect on employee performance. Proven direct influence of organizational culture on employee performance with a coefficient of 0.501 is greater than the indirect influence of the culture of the organization through the work environment with a coefficient of 0.137, so the direct effect is more dominant than the indirect effect.

**Keywords:** *Organizational Culture, Work Environment, Performance*

## 1. Introduction

The office of harbormastership and port authority is technical implementation unit of the directorate general of maritime communications and transportation which shall be established the main tasks and functions of this office which in the performance of its duties is directly responsible to the Directorate General of Sea Communications. In order to arrange the smoothness and security of transport carried out through these waters, there are several government agencies assigned, one of them harbormastership Office and Port Authority Tarakan Class III.

As an organization, the office of Harbormastership and Port Authority of Tarakan Class III, it is of course not related to human resources management, it is very closely related to the management of other resources. The better the management of human resources the better the management of other resources, otherwise the worse the management of human resources then it results in the less good management of other resources.

Good governance is a requirement for government agencies in order to realize the people aspirations and achieve the goals and ideals of the nation. Employees are required to work professionally based on good morals, efficient, clean and prioritize the interests of society and can serve the community as well as possible. However, in the implementation, service problems and supervision is often questioned, it is because there are still many employees who have not been able to maximize its performance, it is marked by the achievement of performance targets that have been determined in the implementation of basic tasks or additional, the accuracy of employees in completing the work, of course it shows that the organizational culture of employees has not been as expected.

In order to create optimal performance, it requires an optimal work enhancement and able to utilize the potential human resources owned by employees in order to create organizational goals. In this case, it is necessary for the role of the organization in improving the organizational culture and creating a good working environment in order to encourage the creation of professional attitudes and actions in completing the work in accordance with their respective fields and responsibilities.

Performance of employees will greatly affect the success of an organization. If the performance of employees is good, then the performance of the organization will increase. Conversely, if the

performance of bad employees, can lead to decreased organizational performance. With organizational support in enhancing organizational culture and an adequate working environment, it can provide a better performance boost for employees, so that the organization can achieve its intended goals.

Organizational culture is a shared perception by members of the organization, a system of shared meanings (Robbins 2009: 167). Organizational culture determines the identity of a group, in this group is defined as an organization. Organizational culture is a variety of interactions and habitual characteristics that affect groups of people within the organization (Sutrisno, 2012: 1). Organizational culture is a collective agreement of members within the organization, thus facilitating the birth of a wider agreement for the benefit of individuals. The virtue of organizational culture is the control and direction in shaping the attitudes and behaviors of people who engage themselves in an organization's activities. Individually or in groups, employees will not be separated from organizational culture. The better the culture prevailing in an agency, it will affect the performance of employees, so there is a separate satisfaction perceived employees in working in agencies.

The organizational culture of the Office of Harbormastership and Port Authority of Tarakan Class III which is applied so far is quite good. All employees can cooperate well enough in completing the work. How to coordinate workers is not fully maximized. This is influenced by the work environment that has a less strong culture in improving productivity, grow the spirit of togetherness among employees, therefore need to improve the sense of belonging to the office, and able to enlarge the benefits of achieving goals. Therefore, the culture within an organization is a binding for all employees together and at the same time to give meaning to the purpose of employee involvement.

Involvement of employees in an organization means that there is a good relationship between superior and subordinate. Relationships can be less good if lack of good communication and less supportive working conditions such as air temperature, noise, lighting, and office facilities are less supportive. Environmental conditions are said to be good or appropriate if humans can carry out activities optimally, healthy, safe and comfortable.

Work environment conditions can be said to be good or appropriate if humans can function properly, so it can be used properly and optimally. A close working relationship and mutual assistance among employees, between subordinates and superiors, will have a good influence on employee morale. As servants of the public servants, should be aware that the work done to have a good results. A work achieved by a person in carrying out his duties because of the performance of work, responsibility, obedience, honesty, cooperation and initiative called performance. In reality, there are some employees who still can not contribute to the office and lack of understanding the field of duty either due to internal factors personnel or external factors.

If it is good working conditions then it can spur the emergence of a sense of satisfaction in the employee who can ultimately give a positive influence on employee performance, vice versa, if the working conditions are bad then employees will not have satisfaction in work. The suitability of the working environment can be seen as a result in the long term furthermore poor working environments may demand more labor and time and do not support the efficient design of work systems. (Sedarmayanti, 2009: 21)

Institutions or organizations should be able to pay attention the existing conditions both inside and outside the workplace, so that employees can work smoothly and feel safe. Work environment is very important to be noted by management. Although the work environment does not carry out the production process, but the work environment has a direct impact on the employees who perform job duties. A work environment that focuses on employees can improve performance otherwise inadequate work environment can degrade performance.

Based on the background, it can be formulated the problem as follows:

1. Does the organizational culture affect the working environment at the office of Harbormastership and Port Authority of Tarakan Class III?
2. Does the organizational culture have a direct effect on the performance of employees in the offices of the Harbormastership and Port Authority of Tarakan Class III?
3. Does the organizational culture affect the performance of employees after going through the work environment at the office of the Harbormastership and Port Authority of Tarakan Class III?

## **2. Reviewed Literature**

### **2.1. Theory of Organizational Culture**

Miller in Indriani (2012: 5) stated that organizational culture is the values and spirit that underlie how to manage and organize the company. They are beliefs that are held firm and sometimes undisclosed. The value and spirit will underlie the nature of the company in an effort to respond to organizational challenges. A strong organizational culture will have a competitive nature. A number of studies show that a strong culture will greatly assist the organization's success by guiding behavior and giving meaning to its activities.

Robbins in Indriani (2012: 5), organizational culture is simply defined as a common perception firmly held by members of the organization and into a system of shared understanding. McKenna & Nic Beech in Edy Sutrisno (2012: 2) organizational culture can be interpreted: "Organizational culture is as a pattern of underlying assumptions in which the existing group creates, finds or develops in the learning process to cope with the difficulties of external adaptation and integration internal ". The organizational culture according to Pabundu (2008: 98) is "Organizational culture is the main issue of solving external and internal problems that its implementation is done consistently by a group which then bequeathed to new members as a proper way to understand, think and feel to the existing problems".

According to Robbins (2009:294), functions of organizational culture are as follows:

- a. Culture creates a clear distinction between one organization and another.
- b. Culture brings a sense of identity to the members of the organization.
- c. Culture facilitates the emergence of a commitment to something wider than one's individual self-interest.
- d. Culture is a social adhesive that helps unify the organization by providing the right standards to be performed by employees.
- e. Culture as a mechanism of meaning and control that guides and shapes attitudes and behavior of employees.

Corporate organizational culture can be demonstrated through scores that obtained from assessment of the atmosphere or work environment in judgment and perception in terms of (a) organizational structure, (b) leadership style and (c) interpersonal relations. Robbins in Pabunda (2008: 10) there are several indicators of organizational culture that are:

#### **a. Leadership Quality**

This leadership quality is measured by employee perceptions regarding the leadership of the boss, ie task-oriented leadership, which includes giving instructions in performing tasks, when and how the work is done and the results to be achieved.

#### **b. Clarity of Organization Goals**

This is measured through employee perceptions of goals that are seen as clear directions, made for the short and long term, and can be spelled out in daily work.

#### **c. Fairness of Compensation**

Fairness of compensation is measured by the employee's perception of justice for the benefits he receives in the organization as a reward or work done, which can be valued with money and has a fixed tendency to be given.

#### **d. Responsibility and Trust**

These responsibilities and beliefs are measured by individual perceptions of the responsibilities and beliefs that the organization provides to employees.

#### **e. Participation**

The level of employee participation is measured based on the individual's perception of the level of staff participation in the decision making process.

#### **f. Communication**

Measurement of communication means measuring employee perceptions of the level of capacity of individuals or groups to request or provide information, cooperation in defining problems and finding solutions, including open attitudes toward new information and opinions, fostering good relationships and trusting each other between employees.

### **2.2. Work Environment Theory**

Nitisebito, (2011: 25) explainend the work environment is all that is around the workers who can affect him in carrying out the tasks that charged him. Institutions should be able to pay attention to

the conditions that exist within the company either inside or outside the workplace, so employees can work smoothly and feel safe. According Sedarmayanti (2009: 12), work environment conditions are said to be good or appropriate if humans can carry out activities optimally, healthy, safe, and comfortable. According Mardiana (2011: 55), work environment is the environment where employees do their daily work.

Sedarmayanti (2009: 21) stated that in general, the type of work environment is divided into 2 namely: (a) physical work environment and (b) non-physical work environment. According Sedarmayanti (2009: 21), "The physical work environment is all the physical circumstances that exist around the workplace that can affect employees either directly or indirectly". Sedarmayanti (2009: 31) defined "Non-physical work environment is all the circumstances that occur related to employment relationship, either with the boss or peer relations, or relationships with subordinates". This non-physical environment is also a group of work environments that can not be ignored. From the previous theoretical explanation, in this study, researchers used indicators to determine the physical work environment of employees. The indicator in question is (Sedarmayanti, 2009: 13):

- a. Air Condition in the room
- b. Noise in the workplace
- c. Vibrations that affect work performance
- d. Indoor lightning levels
- e. Room arrangement

### **2.3. Performance Theory**

Kusriyanto in Mangkunegara (2011: 9), defined performance as a comparison of outcomes achieved with the role of labor unity of time (typically hourly). Furthermore, according to Gomes in Mangkunegara (2011: 9), said that the definition of employee performance as: expression such as output, efficiency and effectiveness often associated with productivity. Meanwhile, according to Prawirosentono (2010: 2) Performance or performance is the result of work that can be achieved by a person or group of people within an organization, in accordance with the authority and responsibility of each, in order to achieve the objectives of the relevant organization legally, in accordance with morals and ethics.

From some description of the experts above it can be concluded that the performance is the result of work that has been achieved by employees oriented to corporate goals. Each performance should be assessed to determine the extent to which the work has been achieved. Performance appraisal by Mangkunegara (2011: 9) defines evaluation / performance appraisal is a process used by the leadership to determine whether an employee performs his work in accordance with his duties and responsibilities. Furthermore, by looking at the results of employee performance appraisal, need to improve its performance in need of good performance management.

Related to the standard of performance assessment, the performance of employees, according to Simamora (2009: 612), is measured by the following indicators:

1. Quantity of work, which includes the amount of production activities generated.
2. Quality of work, which includes the conformity of production activities according to applicable provisions as a standard process of implementation of activities and organizational plans
3. Accuracy of work completion is the fulfillment of the suitability of time required or expected in the implementation of activities.

There are several kinds of performance indicators. According to Malayau S.P. Hasibuan (2009:95), performance indicators include assessment of:

1. Loyalty. Measuring employee loyalty to the job, position, and organization.
2. Honesty. Assessing honesty in doing the duties.
3. Disciplines. Assessing employees in obeying the existing regulations and performing work in accordance with instructions.
4. Creativity. Assessing the ability of employees in developing their creativity in doing the job.
5. Cooperation. Assessing employees to participate and work with other employees.
6. Leadership. Assessing the ability to lead subordinates to work effectively.
7. Personality. Assessing employees from their behavior, politeness, and look sympathetic and be reasonable.
8. Initiatives. Assessing thinking skills that are original and initiative-based.

9. Skills. Assessing the ability to do things well. It relates to qualities such as skill and competence.

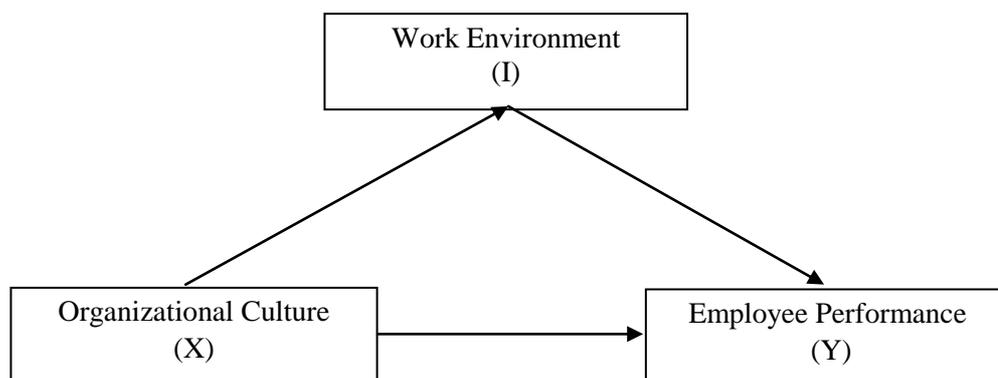
10. Responsibility. Assessing employees in accounting for their wisdom and work behavior. Kepemimpinan. Menilai kemampuan untuk memimpin bawahan untuk bekerja efektif.

#### 2.4. Conceptual Framework and Hypothesis

According to Edy Sutrisno (2011: 2) organizational culture can be interpreted: organizational culture is as a pattern of underlying assumptions in which the existing group creates, finds or develops in the learning process to overcome the difficulties of external adaptation and internal integration. According to Nitisemito, (2011: 25) work environment is all that is around the workers who can affect him in carrying out the tasks that charged him. Institutions should be able to pay attention to the conditions that exist within the company either inside or outside the workplace, so employees can work smoothly and feel safe.

According to Prawirosentono (2010:2), performance is the work that can be achieved by a person or group of people within an organization, in accordance with the authority and responsibility of each, in order to achieve the objectives of the organization concerned legally, with morals and ethics.

In this study, the authors present a conceptual framework to simplify and understand the issues being studied. These conceptual framework estimates are presented in the form of a scheme or picture showing the relationship of each variable as shown in Figure 1.



**Figure 1.** Conceptual Framework

Explanation:

X : Free Variable

Y : Dependent Variable

I : Intervening Variable

Based on the formulation of the problem and some previous research results, it can be formulated this research hypothesis are:

H<sub>1</sub> : Organizational culture has a significant effect on the working environment at the Office of Harbormastership and Port Authority of Tarakan Class III.

H<sub>2</sub> : Organizational culture has a significant effect on employee performance in the Office of Harbormastership and Port Authority of Tarakan Class III.

H<sub>3</sub> : Organizational culture has a significant effect on employee performance through work environment at Harbormastership Office and Port Authority of Tarakan Class III.

### 3. Research Method

The scope of this research is the science of human resource management. The location of this research is the Office of Harbormastership and Port Authority of Tarakan Class III with the consideration of the proper conduct of the research, because there are still complaints of employees in terms of organizational culture and inadequate work environment. This research activity as a whole is carried out for three months, from April until July 2017. The population in this research is all employees of Harbormastership and Port Authority of Class III Tarakan which is used as research object is 46 employees. In this study using the technique Total Sampling is the technique of determining the sample when all members of the population used as a sample (Sugiyono, 2012: 98).

Data collection should be supported data that is objective and complete in accordance with the issues to be studied. Data collection tools in this study consisted of a questionnaire and literature study. To test and prove statistically the influence of organizational culture on employee performance through work environment at Harbormastership Office and Port Authority of Tarakan Class III is used path analysis.

1. Simple Linear Regression

$$I = a + b.X + \varepsilon$$

2. Multiple Linear Regression

$$Y = a + b_1 X + b_2 I + \varepsilon$$

where:

- a = regression constant
- X = organizational culture variable
- I = work environment Variable
- Y = employee performance Variabel
- b1 = Coefficient of organizational culture regression
- b2 = Coefficient of work environment regression
- $\varepsilon$  = Error

#### 4. Research Findings and Hypotesis Test

##### 4.1. Equation I

In order to test the influence of organizational culture on the working environment of the Office of Harbormastership and Port Authority of Class III Tarakan is done by simple linear regression technique. Here are the results of data processing output.

**Table 1.** Analysis of the Influence of Organizational Culture on the Work Environment

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14,530	3,307		4,394	0,000
Organizational Culture	0,313	0,120	0,365	2,597	0,013
r	0,365				
R Square	0,133				
F	6,744				
Sig	0,013				

Source : Primary data that have been processed

From the table above, it described that regression equation for organizational culture to the work environment as follows:

$$I = 14,530 + 0,365 X$$

The description of the regression equation above states that if there is no increase in the value of the organizational culture variable, then the assessment of the working environment of the Office of Harbormastership and Port Authority of Tarakan Class III is 14,530. The value of the regression coefficient of organizational culture is 0.365 states if the organizational culture applied in the office of Harbormastership and Port Authority of Class III Tarakan is better, it will be able to add a pleasant working environment atmosphere.

Based on the results of partial test with t test, it is known that  $t_{value}$  is 2.597 with significant 0.013 is smaller than 0.05 thus  $H_a$  accepted and  $H_o$  is rejected, it means organizational culture affect the work environment of the office of Harbormastership and Port Authority Class III Tarakan. Having known that the conclusion of the significant test shows that there is an influence between the organizational culture on the work environment in Harbormastership office and Port Authority Class III Tarakan, it can be known how big influence with the summary model is R square.

The result of data processing is known value of R Square 0,133 which means that work environment of Harbormastership Office and Port Authority of Class III Tarakan able to be explained by organizational culture variable equal to 13,3% and the rest influenced by outside research model.

#### 4.2. Equation II

In order to answer the second formulation problem and the second hypothesis proof is the influence of organizational culture on the performance of the employees of Harbormastership Office and Port Authority of Tarakan Class III through the work environment is tested by path analysis. From the analysis results obtained output results as follows:

**Table 2.** Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	6,452	5,568		1,159	0,253
	Organizational Culture	0,811	0,182	0,501	4,467	0,000
	Work Environment	0,712	0,212	0,377	3,366	0,002
	r	0,729				
	R Square	0,531				
	Adj. R Square	0,509				
	F	24,360				
	Sig	0,000				

Thus, the regression equation based on standardized coefficients as follows:

$$Y = 6,452 X_1 + 0,501 X + 0,377 I + e_2$$

The regression coefficient of organizational culture variable ( $\beta_1$ ) is 0,501 (positive) with significance 0,000 < 0,05, it means that if organizational culture is improved, then the performance of Harbormastership and Port Class III Tarakan Authority will increase. Assuming work environment variable is considered constant. The regression coefficient of work environment variable ( $\beta_2$ ) is 0,377 (positive) with significance 0,002 < 0,05, it means that if the work environment is improved, then the performance of the officer of Harbormastership Office and Port Authority of Tarakan Class III will increase. Assuming organizational culture variables are considered constant.

Based on Table 2 shows that  $t_{\text{count}}$  organizational culture variables of 4.467 with a significance value of 0.000 and smaller than 0.05, it can be concluded that there is a positive and significant influence of organizational culture variable on employee performance, so hypothesis 2 proved in this study.  $T_{\text{count}}$  of work environment variable equal to 3,366 with significance value equal to 0,002 and smaller than 0,05, hence can be concluded that there is positive and significant influence between work environment variable to performance of officer of office of Harbormastership and Port Authority of Class III Tarakan.

From the calculation using SPSS program, in Table 2 is known the amount of  $F_{\text{count}} = 24,360$  with 0.000 significance smaller than 0,05, so it can be concluded that both variable of organizational culture and work environment have a significant effect to performance of employees of Harbormastership and Port Authority Class III Tarakan.

The value of R Square ( $R^2$ ) = 0.133 means that the variability of working environment of the office of Harbormastership and Port Authority of Tarakan Class III is explained by the organizational culture variable of 11.3%, while the rest is influenced by other un-researched variables such as compensation, motivation, discipline, and others. The amount of variance that can not be explained by job satisfaction variable is:

$$e_1 = \sqrt{1 - R^2} = \sqrt{1 - 0,133} = 0,931$$

From the analysis in Table 5.6, obtained R Square value ( $R^2$ ) = 0,531 means that variability of performance variable of employee of Office of Harbormastership and Port Authority of Tarakan Class III is explained by organizational culture and work environment variable equal to 53,1%, while the

rest is influenced by other not-examined variable, e.g. morale, work discipline, compensation, incentives. The amount of variance that can not be explained by employee performance variable is:

$$e_2 = \sqrt{1 - R^2} = \sqrt{1 - 0,531} = 0,685$$

After obtained value of variance from both equation, so the determination coefficient ( $R^2$ ):

$$\begin{aligned} R^2 &= 1 - (e_1 \times e_2) \\ &= 1 - ((0,931)^2 \times (0,685)^2) \\ &= 1 - (0,867 \times 0,469) \\ &= 1 - 0,406 \\ &= 0,594 \text{ or } 59,4\% \end{aligned}$$

Determination coefficient test ( $R^2$ ) is obtained from the result of 0,594 or 59,4% which mean variability of performance variable of office employee of Harbormastership and Port Authority of Class III Tarakan can be explained by organizational culture variable and work environment equal to 59,4%, while the rest influenced by variable others not studied, such as morale, work discipline, compensation, and incentives.

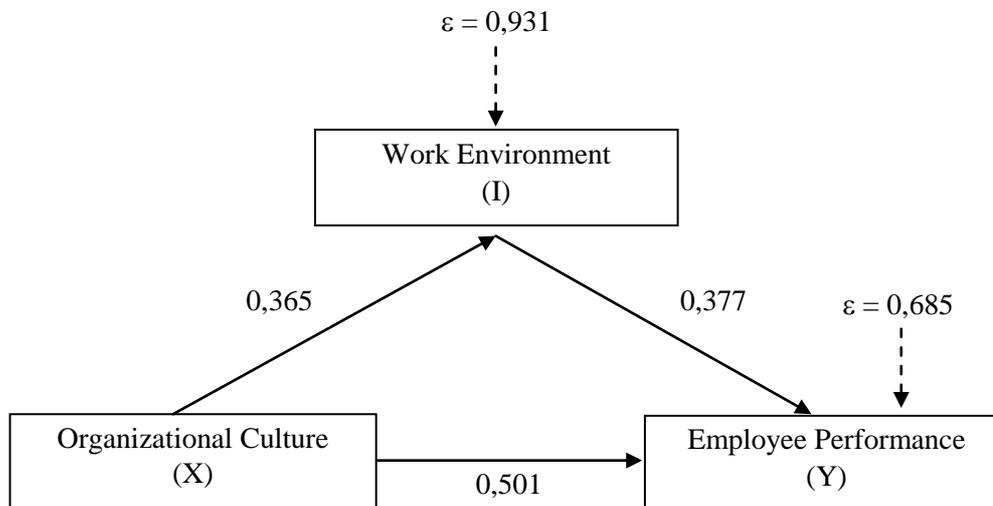
#### 4.3. Path Analysis

According to the analysis result above, it can arrange the result of analysis as follows:

**Table 3.** Conclusion Result of Total Path Regression

No.	Direction	Regression		$\epsilon$
		Beta	Sig	
1	X → I	0,365	0,013	0,931
2	X → Y	0,501	0,000	0,685
2	I → Y	0,377	0,002	

Source: Processed Primary Data



**Figure 2.** Path Analysis Diagram

**Table 4.** Direct and Indirect Influence

Direction of Influence	Direct Influence	Indirect Influence	Total of Influence
X → Y	0,501		
X → I → Y		0,365 x 0,377 = 0,137	0,501 + 0,137 = 0,638

Source: Primary data that has been processed

## 5. Discussion

### 5.1. The influence of Organizational Culture on the Work Environment at the Office of Harbormastership and Port Authority of Tarakan Class III

The results showed that organizational culture has a significant effect on the working environment in the Office of Kesyahbandaran and Port Authority Class III Tarakan evidenced by the acquisition of t value 2.597 with significant 0.013 smaller than 0.05. Thus the first hypothesis that formulated "Organizational culture has a significant effect on the working environment at the Office of Harbormastership and Port Authority Class III Tarakan" proved true.

In a company or organization required a strong organizational culture so that existing values can be really understood and applied deeply, embraced and championed by the members / employees in order to achieve good and optimal performance. Organizational culture can influence the way people behave and should become a reference in every task and its policies taken. Good organizational culture will have a positive impact with a good working environment as well. Conducive and comfortable work situation and atmosphere become part of the work environment that every employee wants. The person's working condition is supported by the laying factor of the workplace, the regular air circulation, the soundproofing, the safe and convenient system of control.

### ***5.2. The Influence of Organizational Culture on Employee Performance at the Office of Harbormastership and Port Authority of Tarakan Class III***

The results showed that organizational culture can have a direct and significant influence on the performance of employees of the Office of Harbormastership and Port Authority of Class III Tarakan, this is indicated by the acquisition of t-value 4.467 with significance 0.000 smaller than 0.05. Thus the second hypothesis that states "Organizational culture has a significant effect on the performance of employees in the Office of Harbormastership and Port Authority Class III Tarakan", proved true.

The results of this study indicate that the better the organizational culture is causing the performance of employees in Harbormastership Office and Port Authority Class III Tarakan increased. These results indicate the better the working mechanism / organized; cooperative relationships between work units (functional structural) work well; the activity of each employee evenly in accordance with rank and position; description of tasks performed well; all rules and regulations and work discipline are adhered to and carried out by employees with full responsibility; justice in the distribution of compensation; leaders always solve problems through employee meetings; the amount of compensation given in accordance with his / her performance; there is no sense of the sentiments of fellow employees in the office in terms of providing compensation; and leadership influence and determine the behavior of employees in achieving office goals.

### ***5.3. The Influence of Organizational Culture on Employee Performance through Working Environment at the Office of Harbormastership and Port Authority of Tarakan Class III***

The results of this study indicate that the influence of organizational culture indirectly through the work environment have a positive and significant impact on the employees performance of Harbormastership Office and Port Authority Class III Tarakan. These results indicate that the weakness of organizational culture will result in employees comfortable with satisfaction and results of work, so that can work environment factors can raise employee performance.

Good organizations are always conscious to set up an organizational culture that is able to generate enthusiasm and passion for employees. At work place, it is impossible to expect enthusiasm to arise without setting up the best organizational culture. The best governance set-up, guidelines on best practice, clear and decisive leadership, a professional and friendly work environment, dependable competence and quality, and fair leadership behaviors and employee attention will make the work environment a fertile place to foster enthusiasm for work employees.

When employees enjoy what they do in the workplace, then they become a great force to produce the best performance and performance. Enthusiasm, high motivation, confidence, and strong beliefs will encourage employees to work and serve the organization in the best possible way. In this case, the management and leadership must always be aware of themselves not to practice bad things that can reduce employee morale. Thus, over time, management and leadership must be able to maintain and improve all situations and realities, potentially reducing the culture of hard work in the workplace. A strong organizational culture creates a work environment that encourages employee enthusiasm and confidence to serve wholeheartedly.

## **6. Conclusions**

According to the results of the research and data analysis, it can conclude that:

1. Test of the influence of organizational culture on the work environment of Harbormastership Office and Port Authority Class III Tarakan done by simple linear regression technique with the results partially with t-test known  $t_{count}$  counted 2.597 with significant 0.013 smaller than 0.05 and research hypothesis proven true.
2. The examination of the influence of organizational culture on the performance of the employees of Harbormastership Office and Port Authority of Tarakan Class III through the work environment is tested by path analysis. The analysis results obtained organizational culture directly significant effect on the performance of employees Kesyahbandaran Office and Port Authority Class III Tarakan with proven thitung of 4.467 with significance value of 0.000 and smaller than 0.05.
3.  $T_{count}$  value of work environment variable equal to 3,366 with significance value equal to 0,002 and less than 0,05 mean there is positive and significant influence between work environment variable to performance of employee of Harbormastership and Port Authority of Class III Tarakan.
4. The amount of  $F_{count} = 24,360$  with significance 0.000 smaller than 0,05 together variable of organizational culture and work environment have a significant effect to employee performance of Harbormastership office and Port Authority of Class III Tarakan.
5. Proven that direct influence between organizational culture on employee performance with coefficient of 0.501 is greater than the indirect influence between organizational culture through work environment with coefficient of 0.137, so that direct influence is more dominant than indirect influence.

## 7. Suggestions

Based on the results of research, discussion and conclusions that have been explained, here are some suggestions that are expected to be input and consideration in improving employee performance with respect to organizational culture and work environment as a whole.

1. To improve the performance of employees to the Office of Harbormastership and Port Authority Class III Tarakan through improving work environment and organizational culture, should pay attention to the habits of how employees work that is commonly done. It is possible to change positive and creative habits so as to trigger a more optimized performance of employees.
2. To improve the performance of employees, efforts that can be increased by the Office of Harbormastership and Port Authority Class III Tarakan is to improve the indicators of work environment in a way that is to establish employee relationships with colleagues well during work activities, in the work agency, each employee is placed in the right position, employee relationships with the leader goes well and harmoniously, employee job positions are really considered in the work agency and working atmosphere at work agencies running well and conducive.
3. For further researcher associated with the variables studied with variables that have not been studied, then this research still needs to be followed up by next researchers to get a better study.

## Bibliography

- [1]. Abidin, Z. 2013. "Pengaruh Lingkungan Kerja dan Budaya Organisasi terhadap Kinerja Karyawan pada PT. Trakindo Utama Cab. Makassar". *Jurnal Manajemen Sumber Daya Manusia*. Vol 2 No 4. Pp 1-11.
- [2]. Djuremi, Hasiolan, dan Minarsih. 2016. "Pengaruh Lingkungan Kerja, Budaya Organisasi, dan Kepemimpinan Terhadap Kinerja Pegawai pada Dinas Pasar Kota Semarang". *Journal of Management*. Vol 2 No 2. Pp 1-14.
- [3]. Handoko, T. Hani. 2010. *Manajemen Personalia dan Sumber Daya Manusia*. Edisi Kedua. Cetakan Keenambelas. Yogyakarta: BPFPE.
- [4]. Hasibuan, S.P. Malayu. 2010. *Manajemen Sumber Daya Manusia*. Edisi Revisi. Cetakan keenam. Jakarta: Penerbit Bumi Aksara.
- [5]. Mangkunegara, A. A. Anwar Prabu. 2011. *Manajemen Sumber Daya Manusia Perusahaan*. Bandung: Penerbit Rosda Karya.
- [6]. Mathis, Robert L dan Jhon H. Jackson. 2009. *Manajemen Sumber Daya Manusia*, Buku I, Penerjemah: Jimmy Sadeli dan Bayu Prawira Hie, Jakarta: Salemba Empat
- [7]. Muchlas, Makmuri. 2009. *Perilaku Organisasi*. Yogyakarta: Gadjah Mada University Press.

- [8]. Nitisemito, Alex S. 2011. *Manajemen Personalialia*. Jakarta: Ghalia Indonesia.
- [9]. Pabundu, Tika. 2008. *Budaya Organisasi dan Peningkatan Kinerja Perusahaan*, Jakarta: PT Bumi Aksara.
- [10]. Prasetyo, S. Novita. 2013. “Pengaruh Budaya Organisasi dan Lingkungan Kerja Terhadap Kinerja Karyawan PT. Kencana Printing”. *Jurnal Penelitian Ilmiah*. Vol 1 No 2. Pp 1-9.
- [11]. Prawirosentono, Suyadi. 2010. *Analisis Kinerja Organisasi*. Bandung: PT Rineka Cipta.
- [12]. Robbins, Stephen P. 2009. *Perilaku Organisasi*. Edisi Bahasa Indonesia. Jakarta: PT. Prenlindo.
- [13]. Sadili Samsudin. 2010. *Manajemen Sumber Daya Manusia*. Bandung: Pustaka Setia.
- [14]. Sedarmayanti. 2009. *Sumber Daya Manusia dan Produktivitas Kerja*. Bandung: Mandar Maju.
- [15]. Simamora, Henry. 2009. *Manajemen Sumber Daya Manusia*. Yogyakarta: STIE YKPN.
- [16]. Soetrisno, Edy. 2012, *Budaya Organisasi*, Kencana Prenada Media Group, Jakarta.
- [17]. Sukarman, B. 2014. “Pengaruh Motivasi, Budaya Organisasi dan Lingkungan Kerja terhadap Kepuasan Kerja dan Kinerja Pegawai Dinas Tenaga Kerja dan Transmigrasi Propinsi Kalimantan Tengah”. *KINDAI*. Vol 10 No 3. Pp 218-236.
- [18]. Susetyo, W.E. dan Tjahjono, H, 2014. “Pengaruh Budaya Organisasi dan Lingkungan Kerja terhadap Kepuasan Kerja dan Kinerja Karyawan Pada PT. Bank Muamalat Indonesia Divisi Konsumer Area Cabang Surabaya”. *Jurnal Ilmu Ekonomi dan Manajemen*. Vol. 1 No. 1. p. 83-93.
- [19]. Suwatno. 2009. *Manajemen Sumber Daya Manusia*. Bandung : Alfabeta.

# The Hydraulic Design of Fixed Weir With MDO and MDS Type Energy Damper Using GUI Matlab

Marlina Kamis<sup>1</sup>, Yudit Agus Priambodo<sup>1</sup>, Alvisyah Riadi<sup>1</sup> and Sri Dewi Nurlaela<sup>2</sup>

<sup>1</sup>Civil Engineering Department, Universitas Muhammadiyah Maluku Utara, Ternate, Indonesia

<sup>2</sup>Civil Engineering Department, Universitas Nuku, Tidore, Indonesia

**Abstract.** To facilitate planners designing a permanent weir body with an MDO and MDS type energy damper it is necessary an Indonesian National Standard (SNI) of the hydraulic body design of the weir body. Accordingly, SNI 8063: 2015 is formulated on the hydraulic body design procedures of permanent weir with energy reducer type MDO and MDS. In this Research, Graphical User Interface (GUI) design is used trial and error method. From the analysis results noted that the accuracy of the software calculations designed using Graphical User Interface builder (GUIDE) based on MATLAB has been in accordance with Indonesian National Standard (SNI) 8063: 2015.

**Keyword :** *Hidraulic, MDO, MDS GUI Matlab*

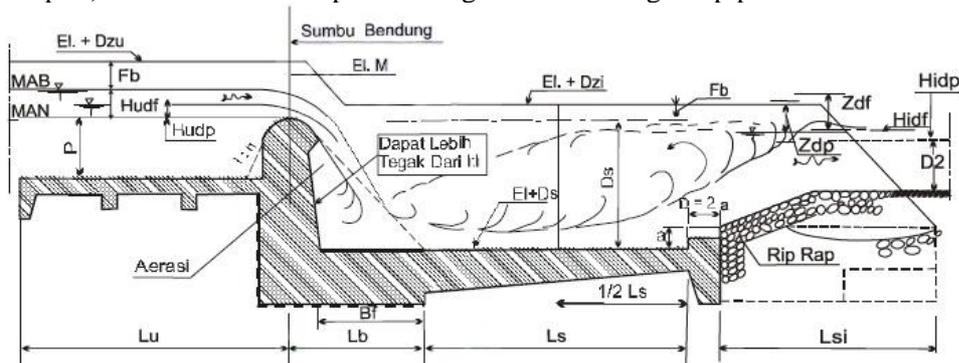
## 1. Introduction

The weir structure is one of the providers and water providers to satisfy the requirement of irrigation. The weir is one of the main structures that is the planned structures in rivers or streams to deflect water into irrigation networks, usually equipped with a mud bag to reduce the sediment content is excessive and allows to measure and manage the incoming water [1]. The weir is a structure built across the river to elevate the level of river water [2].

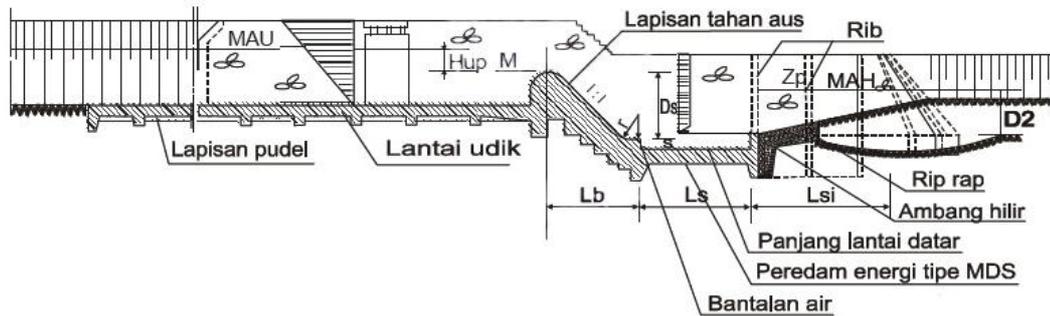
The structure of the weir body with its accessories is part of the types of water structures. One of the completion of the weir is the structure of energy damper whose type is diverse and among others MDO type and MDS type. This type is the development of energy damper type Vlughter and types Schoklitsch. To make it easier for planners to design a permanent weir body with MDO and MDS type energy damper in Indonesia, the national standard is set SNI 8063: 2015 [3].

Along with technological developments, people tend to use computer-based aids. This is done so that a job can be completed more efficiently, especially in terms of time. Included in the field of civil engineering, computer-based tools (generally in the form of software) is needed because it will facilitate the completion of a job or project.

There is a lot of software in the field of civil engineering that has been circulating in the market. In the structural field, for example, there is software such as ETABS and SAP2000 for structures and BRIDGE for bridges. In the field of land investigation, there is also Civil Lab. Pro, NPILE, and SOILAB. Similarly, in the field of water, there is software such as EPANET, HEC-RAS, and PFE (Pipe Flow Expert) that can be relied upon to design urban drainage or pipelines.



**Figure 1.** An example of a long section of MDO type energy damper



**Figure 2.** An example of a long section of MDS type energy damper

However, there is currently no software specifically designed to design the hydraulic design of the weir body still in accordance with SNI 8063:2015. Therefore it is necessary to develop and design software as a tool in designing the body of the fixed weir.

One of the programming languages that can make a mathematical analysis program in Matlab. The name Matlab stands for Matrix Laboratory. Matlab is a programming language devoted to technical computing. Problems that can be solved with Matlab are primarily problems that can be formulated in terms of matrices and vectors. Matlab is not just a computation and plotting package; it is a versatile and flexible tool which allows users with even the most elementary programming capabilities to produce sophisticated graphics and graphical user interfaces (GUIs). The level of sophistication is only limited by one's needs, curiosity, and imagination[4]. GUI is a visual-oriented application program built with graphics objects instead of text commands for interacting users. The GUI in MATLAB is summarized in a GUIDE (Graphical User Interface Builder) application [5]. A GUI tool consists of a computational model and a graphical user interface that lets the user easily and naturally adjust the parameters of the model, rerun the computation, and see the new results[6].

The purpose of this research is to make a Matlab based software as a tool in designing hydraulic of fixed weir with energy damper of MDO and MDS type according to Indonesian National Standard SNI 8063: 2015.

## 2. Methods

In this research, the steps are as follows:

### 2.1. Literature study

References used are SNI 8063: 2015. Books or journals in the form of sites in the official network of Matlab to find the right programming formula in designing the program language.

### 2.2. Program design

After getting an adequate reference, the next step is to start designing the program using trial and error method.

### 2.3. Testing the accuracy of the calculation results

The final step is to test the accuracy of the calculation result of the program that has been completed designed against manual analysis according to SNI 8063: 2015.

## 3. Results and Discussion

### 3.1. Program design

This program is named Design of Irrigation Structures or DIRS. Graphical User Interface (GUI) Input is planned to consist of 7 Panels. The seven panels are:

- Weir Data
- River / Channel Data
- Spillway
- Clean Abundance Width
- Upper Water Front in Upper
- MDO Chart
- Dekzerk Elevation Parameters

Graphical User Interface (GUI) Output planned to consist of three Panel. The three panels are:

- Hydraulic Parameters
- Dimension of Weir Equipment
- Dimension of Energy Damper

### 3.2. Preliminary data

After completing the programming, next is to test the accuracy of the calculation and the accuracy of Matlab script usage. Preliminary data and information used are the data contained in appendix C of SNI 8063: 2015. The data are as follows:

- Flood design debit ;  $Q_{df} = 2700 \text{ m}^3/\text{s}$
- Discharge design flows / changes in river morphology;  $Q_{dp} = 1600 \text{ m}^3/\text{s}$
- The net width of the spillway;  $B_p = 120 \text{ meters}$
- Highest rice field elevation = 8,855 meters
- Loss energy on the inlet = 0,65 meters
- Loss energy of measuring structures = 0,1 meters
- Loss energy on the retrieval = 0,1 meters
- Loss energy by slope of the channel = 0,1 meters
- Increased water level = 0,1 meters
- Safety = 0,095 meters
- Elevation of spillway of the weir = El + 10.00
- The bottom of the deepest river downstream = El + 5,00
- River degradation is taken into account 2,00 meters
- Upper side slope (n) = vertikal
- Downstream slope (m) = 1
- River width ;  $B = 123,8 \text{ meters}$
- River hydraulic slope (i) = 0,0011
- The slope of the river wall (m) = 1
- Thick pillar;  $t = 1,5 \text{ meters}$
- Number of pillars = 2
- Door drain width;  $b = 2 \text{ meters}$
- Number of drain doors = 2

Here is a recapitulation of the results of manual calculations:

**Table 1.** Manual calculation result

<b>Manual calculation result</b>	
<i>Data</i>	<i>Value</i>
Tinggi terjun bendung (Zdp)	6,20 meters
Parameter energi (Edp)	0,28
Ujung tembok pangkal bendung (Lpi)	24 meters
Panjang tembok sayap hilir (Lsi)	45 meters
Panjang tembok pangkal udik (Lpu)	15 meters
Panjang tembok sayap udik (Lsu)	15 meters
Elevasi <i>Dekzerk</i> di udik mercu bendung (El + Dzu)	15,40 meters
Elevasi <i>Dekzerk</i> di hilir mercu bendung (El + Dzi)	11,50 meters
Kedalaman lantai (Ds)	14 meters
Panjang lantai dasar (Ls)	30 meters
Tinggi ambang hilir (a)	1,8 meters
Lebar ambang hilir (b)	3,6 meters
Kedalaman bantalan air (S)	15 - 16 meters

### 3.3. Matlab GUI Calculation Result

First open GUI Input first. then click on the Run Figure menu on the toolbar or press Ctrl + T.

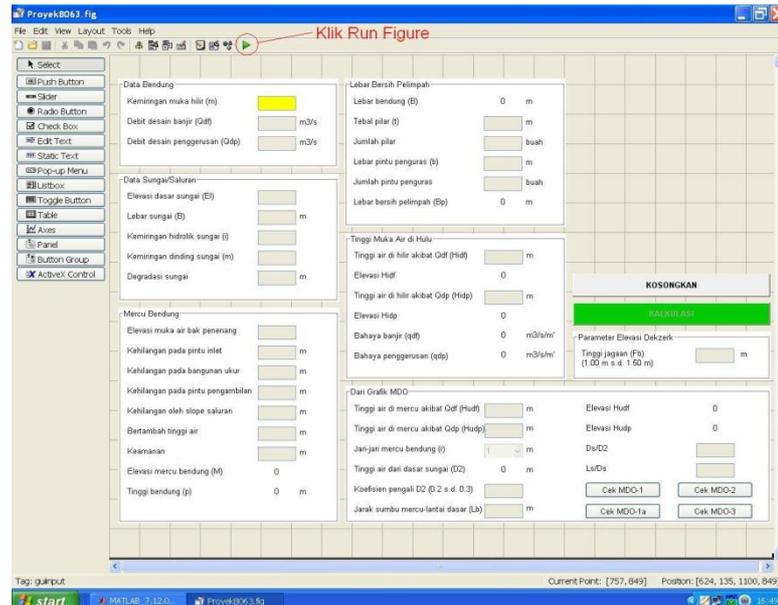


Figure 5. Running the program

After GUI *Input* is successfully executed, enter the *input* values one by one starting from the yellow *Edit Text*. GUI *Input* has been programmed so that the initial state of *Edit Text* is disabled, which is marked with *Edit Text* which is locked and grayed out. *Edit Text* will change to enabled (marked with *Edit Text* changed to yellow) after *Edit Text* previously filled. GUI *Input* is programmed so that all *Edit Text* is filled before the user presses pushbutton Kalkulasi.

Characters that can be typed in *Edit Text* are limited to numbers (0-9) and dots (.). If the other character is typed in *Edit Text*, the character automatically disappears. However, the number of characters filled in *Edit Text* has not been restricted. After all input values have been entered, the push button Kalkulasi that were originally disabled will be enabled. Click pushbutton Kalkulasi, then will appear GUI *Output* window that displays the results of calculations.

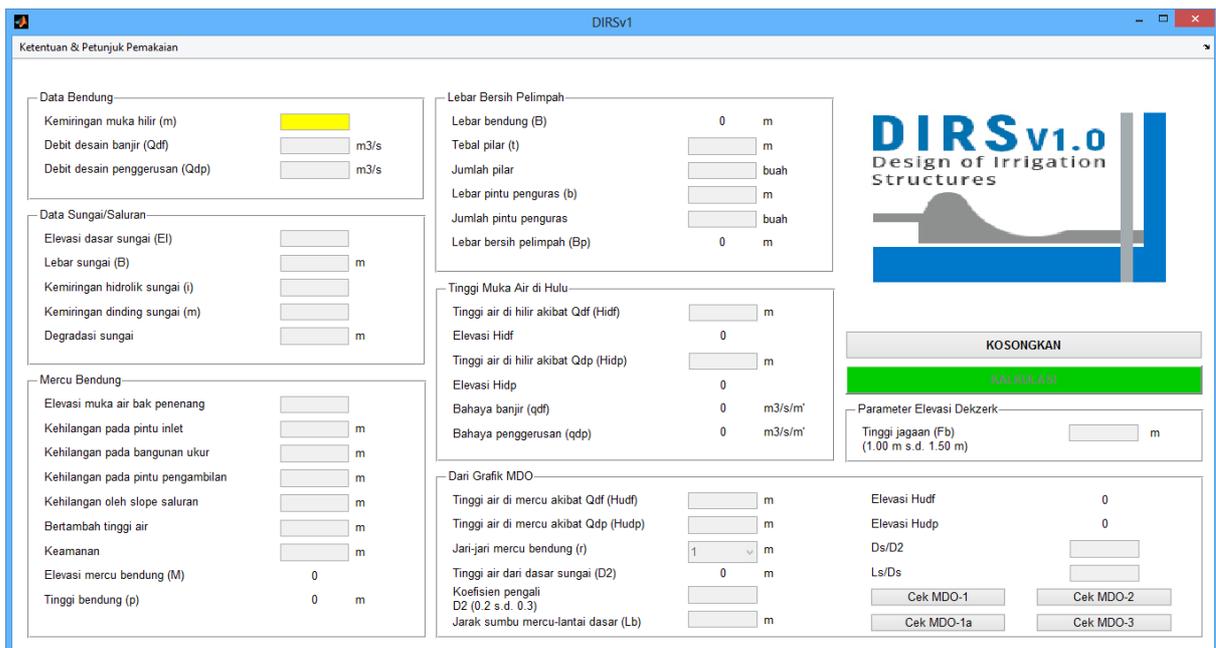


Figure 6. Filling GUI input

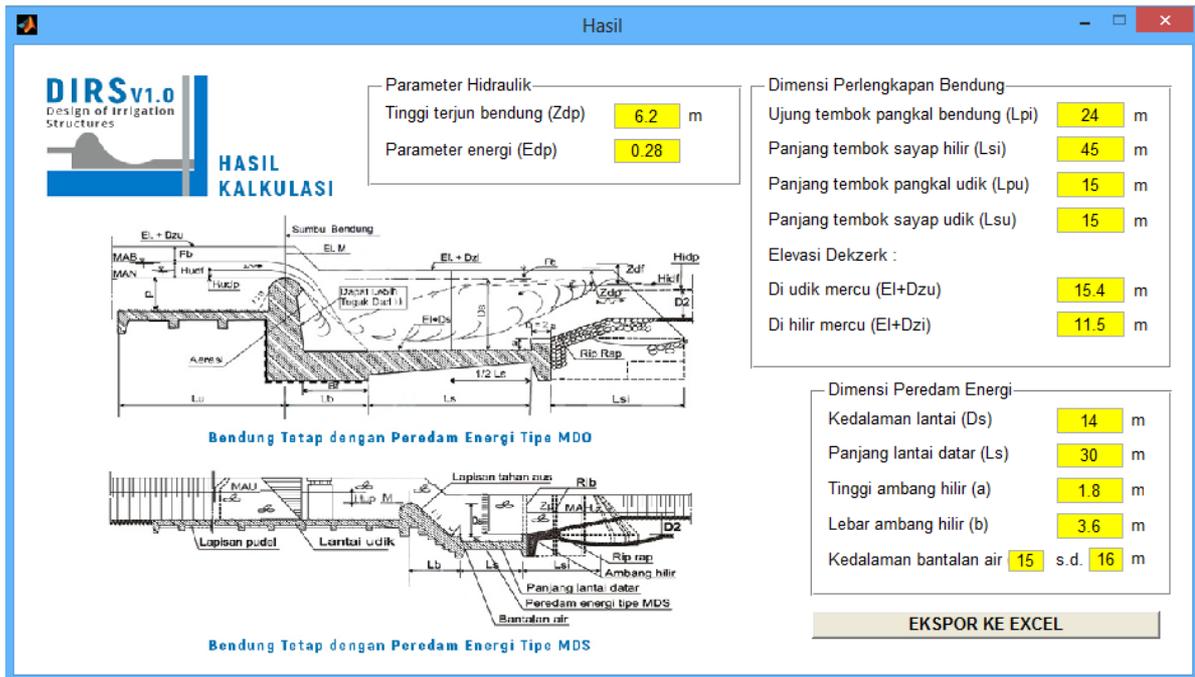


Figure 7. Calculation results

Click pushbutton Ekspor ke Excel if you want to export data into Excel format. Exported data is all data processed in DIRS software, both input data, and output data. Export data successfully performed marked with the emergence of a dialog box that informs that the export data is completed.

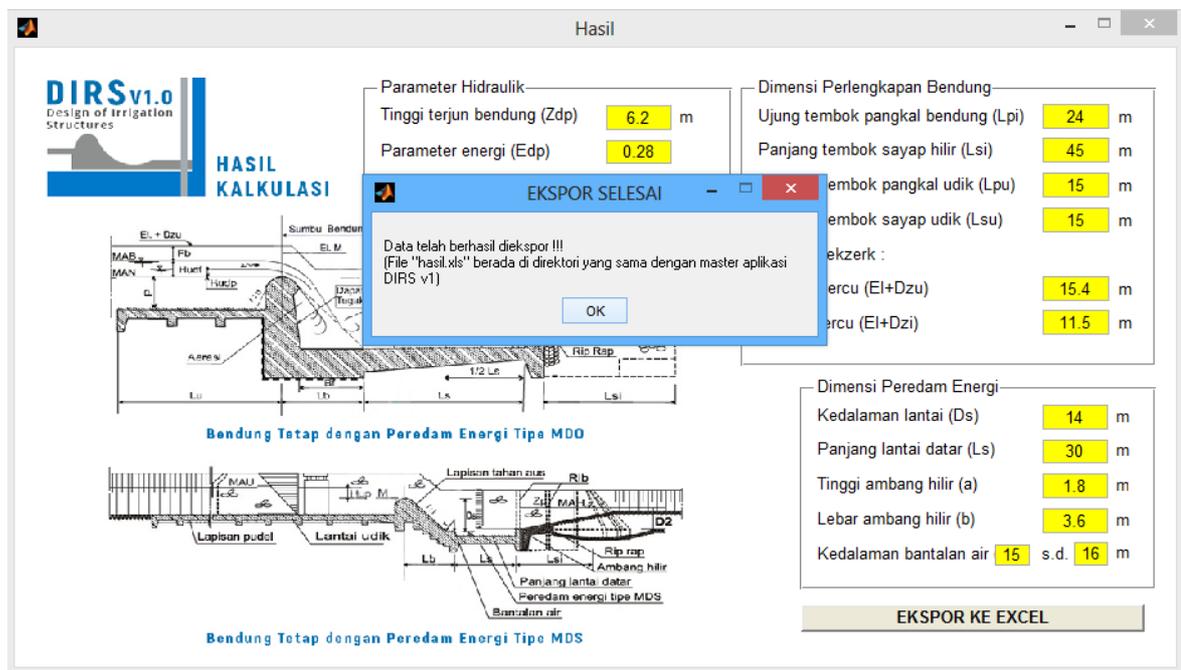


Figure 8. Data Export Dialog Box

The exported data Excel file resides in the same directory as the main file. The Excel file is named "hasil.xls". Recapitulation of GUI Matlab calculation results is shown in Table 2.

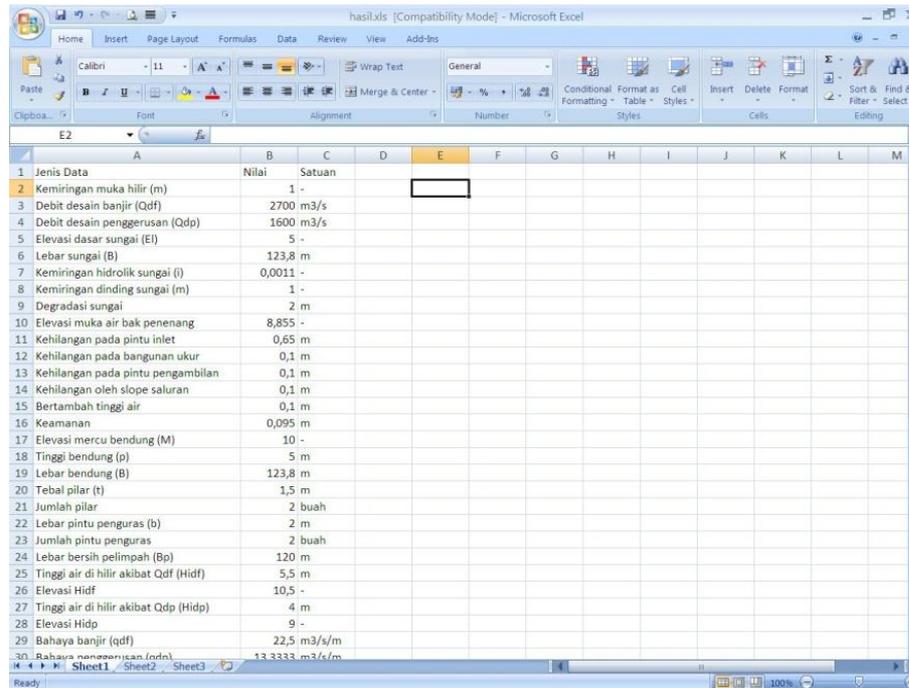


Figure 9. File Excel Hasil Ekspor Data

Table 2. Calculation results GUI Matlab

Calculation results GUI Matlab	
Data	Value
Tinggi terjun bendung (Zdp)	6,2 meters
Parameter energi (Edp)	0,28
Ujung tembok pangkal bendung (Lpi)	24 meters
Panjang tembok sayap hilir (Lsi)	45 meters
Panjang tembok pangkal udik (Lpu)	15 meters
Panjang tembok sayap udik (Lsu)	15 meters
Elevasi Dekzerk di udik mercu bendung (El + Dzu)	15,4 meters
Elevasi Dekzerk di hilir mercu bendung (El + Dzi)	11,5 meters
Kedalaman lantai (Ds)	14 meters
Panjang lantai dasar (Ls)	30 meters
Tinggi ambang hilir (a)	1,8 meters
Lebar ambang hilir (b)	3,6 meters
Kedalaman bantalan air (S)	15 - 16 meters

When compared with the results of manual calculations in Table 1, It can be seen that there is no difference in the calculation results (see Table 2). This means that this program is quite accurate in calculating the fixed weir hydraulics with energy damper type of MDO and MDS according to SNI 8063: 2015.

Once ensured that no calculation errors and programming scripts run smoothly, then the executable file is created. Conversion of program results into executable file format is intended for the program can run even on a computer that is not used Matlab. Users must copy or move files such as pictures or other support manually into the same directory with the exe file to run.

#### 4. Conclusion

Based on the results and discussion obtained the following conclusions:

- 1) DIRS GUI Matlab calculation results are in accordance with the manual calculation according to Appendix C SNI 8063: 2015. This means that this program is quite accurate in calculating the fixed weir hydraulics with energy damper type of MDO and MDS according to SNI 8063: 2015.

- 2) The resulting executable file can be run on computers that are not installed Matlab program, but must install the runtime compiler matlab first.
- 3) The image files used in DIRS are not integrated with the program, so the user must place the image files into the same directory as the master manually.

Furthermore, it is necessary to develop for stability analysis of weir and drawing work. Completion of this program is expected to be useful as a planning tool irrigation structures in civil construction work in Indonesia.

## References

- [1] Direktorat Jenderal Pengairan Departemen Pekerjaan Umum 2010 *Kriteria Perencanaan Bagian Bangunan Utama KP-02* (Jakarta: Departemen Pekerjaan Umum)
- [2] Mawardi, Erman and Memed M 2006 *Desain Hidraulik Bendung Tetap untuk Irigasi* (Bandung: Alfabeta)
- [3] SNI 8063 2015 *Tata Cara Desain Hidraulik Tubuh Bendung Tetap dengan Peredam Energi Tipe MDO dan MDS* (Jakarta: Badan Standarisasi Nasional)
- [4] Marchando P and Holland O T 2003 *Graphics and GUIs with MATLAB* (Boca Raton: Chapman& Hall/CRC)
- [5] Butar Butar R P 2007 *Pemrograman Graphical User Interface (GUI) dengan MATLAB untuk Mendesain Alat Bantu Operasi Matematika* (Medan: Departemen Matematika Universitas Sumatera Utara)
- [6] Lent Craig S 2013 *Learning To Program With MATLAB : Structure GUI Tools* (Notre Dame:John Wiley & Sons, Inc.).

# An Analysis of Finance of Regional Government of North Halmahera Regency for 2009-2014 Budget Year

Muhammad Iqra Harun<sup>1</sup>

<sup>1</sup> Lecturer at Economy Faculty UMMU-Ternate, Indonesia  
Email : m\_iqraharun@gmail.

**Abstract.** This research was conducted in June 2016 in the Office of Regional Finance and Asset Management Board of North Halmahera Regency Government, aiming at analyzing the financial performance of North Halmahera Regency Government for the last five years (2009-2014). The research finds that (1) the region's mean financial performance is unstable, (2) several financial ratios still show positive and negative trends, (3) the regional financial independence level has not been stable since it still to some extent depends on external sources of fund, particularly from the central government, and (4) the performance of North Halmahera Regency Government has not been effective since its effectiveness and efficiency ratios have not been 1 (one) or 100 percent..

**Keyword :** *Financial analysis, North Halmahera, Regional government performance*

## 1. Introduction

The fiscal autonomy and decentralization policies constitute an answer to people's demand for a change in all aspects of life as a nation and a country. The government is expected to give solutions for improving services to the people. One of these solutions is to provide the regional government with extensive autonomy, which means to give more space for them to manage the resources available to them according to the local people's need priority (Djalil 2014: 21).

The consideration that underlie the need to perform regional autonomy is the development of events in both inside and outside the country. The condition inside the country indicates that the people long for transparency and decentralization. On the other hand, what happens outside the country indicate the increasingly expansive globalization which demand each country to improve their competitiveness, in this case this include its regional governments (Halim, 2007: 1). This competitiveness of regional government is expected to be achieved through the improvement of regional government decentralization. Furthermore, this improved regional government decentralization is expected to be reached through regional autonomy.

One of the important aspects in the implementation of regional autonomy which should be carefully regulated is the issue of managing regional finance and budget. Purnomo (2009: 2) suggests that to materialize the extensive, real, and responsible regional autonomy, a regional financial management capable of controlling the regional financial policies in an economic, efficient, effective, transparent, and accountable manner is needed.

The realization for regional expenditure of North Halmahera Regency in 2009 was Rp. 410,383,293,592.00 from what had been budgeted at Rp. 454,654,529,651.00, in 2010 its realized regional expenditure was Rp. 393,216,766,959.29 from what had been budgeted at Rp. 424,509,741,640.34, in 2011 its realized regional expenditure was Rp. 502,887,227,889.41 from what had been budgeted at Rp. 559,298,730,795.22, in 2012 its realization for regional expenditure was Rp. 550,447,751,224.04 from what had been budgeted at Rp. 632,815,123,212.96. In 2013, its realization for regional expenditure was Rp. 572,932,879,103.52 from what had been budgeted at Rp. 616,375,018,627.33, and in 2014 its realization for regional expenditure was Rp. 683,715,818,867.30 from what had been budgeted at Rp. 731,450,482,410.68. These indicate that the realized regional expenditure of North Halmahera Regency did not exceed the budget. The reasons as to why the researcher chose this Regency which had been decentralized in North Maluku Province was to see to what extent the regional government's ability in earning Locally Generated Revenue to finance its

own expenditures related to expenditures for apparatus and development and its ability to serve the people and to fund its priority programs and projects.

The information presented above is still insufficient to depict the achievement of financial performance in North Halmahera Regency government within regional autonomy context. That description merely shows the comparison between the realization and the budget. It has not touched the analysis on the financial performance of North Halmahera Regency government. Meanwhile, an analysis on financial performance becomes an indicator in seeing whether or not the government successfully manages their finance. Additionally, an analysis of financial statements becomes a source of information for the people to judge the government's accountability in providing public services better.

Based on the background above, the writer is interested in conducting research in North Halmahera Regency in relation to the analysis of financial performance regional of this government as stated in this proposal entitled *The Analysis of Finance of North Halmahera Regency Government in 2009-2014 Budget Year*, aiming at analyzing the financial performance of North Halmahera Regency Government for the last five years (2009-2014) using the financial ratio indicators in the Local Regional Budget.

## 2. Research Method

### 2.1. Research Site and Time

This research was conducted in North Halmahera Regency Government, particularly at the Office of Regional Finance and Asset Management Board (BPKAD) and Local Development Planning Agency (BAPPEDA) of North Halmahera Regency in June 2016.

### 2.2. Method for Collecting Data

The secondary data were obtained by collecting them from archives or documents related to the object being studied from the and Regional Finance and Asset Management Board (BPKAD) and Local Development Planning Agency (BAPPEDA) of North Halmahera Regency.

### 2.3. Method for Analyzing Data

The methods for analyzing the data include descriptive analysis which was based on the description which supports the analysis. This analysis emphasized on the understanding of issues in social life based on holistic, complex, and detailed real-life condition or nature setting which is of explanatory nature in the form of description or sets of sentences. According to Widodo in Halim (2007: 267), a number of ratio analyses are available to measure local government's financial performance developed based financial data coming from APBD, including:

#### 2.3.1. Local (Financial) Independence Ratio

The financial independence ratio was analyzed using the formula :

$$\text{Rasio Kemandirian} = \frac{\text{Pendapatan Asli Daerah}}{\text{Bantuan Pemerintah Pusat/Provinsi dan Pinjamam}}$$

#### 2.3.2. Effectiveness and Efficiency Ratio of Locally Generated Revenue

Effectiveness ratio was analyzed using the formula :

$$\text{Rasio Efektivitas} = \frac{\text{Realisasi Pendapatan Daerah}}{\text{Target Penerimaan PAD Ditetapkan Berdasarkan Potensi Riil Daerah}}$$

Furthermore, the efficiency ratio was analyzed using the formula :

$$\text{Rasio Efisiensi} = \frac{\text{Biaya Yang Dikeluarkan Untuk Memungut PAD}}{\text{Realisasi Penerimaan Pendapatan Asli Daerah}}$$

#### 2.3.3. Activity Ratio

The activity ratio was analyzed using the formula:

$$\text{Rasio Belanja Rutin Terhadap APBD} = \frac{\text{Total Belanja Rutin}}{\text{Total APBD}}$$

$$\text{Rasio Belanja Pembangunan Terhadap APBD} = \frac{\text{Total Belanja Pembangunan}}{\text{Total APBD}}$$

#### 2.3.4. Growth Ratio

The growth ratio was analyzed using the formula:

$$\text{Rasio Pertumbuhan} = \frac{\text{Realisasi PAD } x_n - x_{n-1}}{\text{Realisasi Penerimaan PAD } x_{n-1}}$$
$$\text{Rasio Pertumbuhan} = \frac{\text{Realisasi Pertumbuhan } \sum \text{Pendapatan } X_n - X_{n-1}}{\text{Realisasi Pertumbuhan } \sum \text{Pendapatan } x_{n-1}}$$

Note:

$X_n$  = Years included in calculation

$X_{n-1}$  = Previous years

### 3. Results and Discussion

#### 3.1. Local Finance of North Halmahera Regency

The Regional Government Budget is a yearly financial plan of a regional government discussed and approved jointly by the regional government and local house of representatives (DPRD). It is then established with a local government regulation. This regional government budget is used by the regional government as the basis to implement programs and projects in the effort of providing services to its local people.

This Regional Government Budget preparation is the local government's budgeting process wherein it conceptually consists of formulating budget policy and planning budget operation. The preparation of general policy for Regional Government Budget belongs to budget policy formulation which serves as a reference in planning the budget operation. The budget policy formulation has something to do with fiscal analysis and the budget operation planning puts more emphasis on financial resources allocation.

In Law Number 25 Year 2004 concerning National Development Planning System, it is basically mandated that the national planning aims at ensuring the interrelatedness and consistency between planning, budgeting, implementation, control and monitoring. In order to realize this, the local government planning framework begins with planning the local government medium-term development which is then detailed each year through the preparation of work plan for regional government. In turn this work plan serves the function of a reference for preparing General Policy of Regional Government Budget (KUA). The approved KUA becomes a reference for preparing the ceiling and priority of budget and eventually it becomes a part of Local Government Department/Agency (SKPD) to prepare their Budget and Work Plan (RKA-SKPD). Preparing RKA-SKPD means allocating financial resources.

In general, the policy of managing five-year budget has been implemented under Government Regulation Number 58 Year 2005 concerning Local Government Financial Management and it is detailed further through the Ministerial Regulation of Home Affairs Number 13 Year 2006 and should an amendment is made to this government regulation towards a better Local Government Financial Management, then an adjustment should be done.

The general policy of regional government finance is highly dependent on the regional government's financial ability. The data on regional government's financial ability can be seen from their budget. The Regional Government Budget of North Halmahera Regency allocated for financing the government, social and local development works keep on increasing each year.

To figure out whether or not the Local Government Financial Management has succeeded as mandated in Law Number 17 Year 2003, an analysis will be conducted on the financial management of North Halmahera Regency government by applying financial ratio to the Regional Government Budget in 2009, 2010, 2011, 2012, 2013, and 2014.

#### 3.2. Financial Independence Ratio of Regional Government

This financial independence ratio of Regional Government indicates the ability of North Halmahera Regency government in funding its governmental, development and service works to those people who have paid taxes and retributions as the source of revenues needed by the local government.

**Table 1.** Local (Financial) Independence Ratio for 2009 to 2014 Budget Year

Yaer	PAD Realitation	Central Gov. Trans	Contribution PAD
2009	15,181,573,627	398,601,889,193	0.038
2010	55,197,347,421	308,978,204,752	0.179
2011	106,242,475,596	425,112,161,812	0.250
2012	113,121,892,456	458,057,104,467	0.247
2013	103,330,459,759	481,202,386,438	0.215
2014	115,814,255,742	308,978,204,752	0.375
<b>SUM</b>	<b>508,888,004,601</b>	<b>2,380,929,951,414</b>	<b>0.214</b>
<b>Average</b>	<b>84,814,667,434</b>	<b>396,821,658,569</b>	<b>0.214</b>

Source : APBD Halut, 2016

Based on the calculation of (financial) independence ratio above, it can be seen that the regional government's ability in independently funding its governmental, development and public service works in 2009 to 2014 budget year was relatively low at on average 0.214%, which was less than 50%, i.e. in 2009 it was 0.038%, in 2010 it increased to 0.179%, in 2011 it increased to 0.250% , in 2012 it decreased to 0.247%, in 2013 it decreased to 0.215% and in 2014 it increased to 0.375%.

From the (financial) independence ratio calculation above, it can be seen that the (financial) independence ratio depict the local government's dependency for sources of fund on external parties, particularly the central government.

### 3.3. Effectiveness and Efficiency Ratio

Effectiveness ratio depicts the regional government's in realizing the the planned Locally Generated Revenue against the target set based on the local government's real potentials. The regional government's ability is said to be effective if the ratio it achieves is at least 1 (one) or 100 percent. The greater the effectiveness ratio, the more effective the local government's ability.

**Table 2.** Report of PAD Target and Realization in 2009 to 2014 Budget Year

Yaer	Reception PAD	Realization PAD	Effectiveness Ratio
2009	40,246,867,547	15,181,573,627	0,038
2010	67,053,727,758	55,197,347,421	0,179
2011	115,910,969,500	106,242,475,596	0,250
2012	155,413,393,565	113,121,892,456	0,247
2013	114,954,515,428	103,330,459,759	0,215
2014	113,185,841,628	115,814,255,742	0,189
<b>SUM</b>	<b>606,765,315,426</b>	<b>508,888,004,601</b>	<b>0,838</b>
<b>Aver</b>	<b>101,127,552,571</b>	<b>84,814,667,434</b>	<b>0,838</b>

Source : APBD Halut, 2016

From the calculation of effectiveness ratio above, it could be seen that the effectiveness of Local Government Financial Management of North Halmahera Regency in 2009 to 2014 budget year was still poor, because the average PAD realization was 0.838, which was below 100%. In 2009 it was 0.038%, in 2010 it increased to 0.179%, in 2011 it increased to 0.250%, in 2012 it decreased to 0.247%, in 2013 it decreased to 0.215% and in 2014 it decreased to 0.189%.

Based on the description of the low PAD realization generated by the North Halmahera Regency government, it is therefore expected that this regional government would work harder to increase its Locally Generated Revenue, by considering the development and improvement from agriculture, animal husbandry, fisheries, tourism, plantation, forestry sectors as well as the regional retribution as the prominent sources for PAD.

Next is efficiency ratio. This ratio depicts the comparison between the amount of costs spent to obtain revenue and the realized revenue received. The regional government's financial performance in collecting revenue is classified as effective when what is achieved is less than one or 100 percent. The lesser the efficiency ratio, the better the regional government performance would be.

**Table 3.** Calculation of Efficiency Level of Local Government Expenditure to Collect PAD in 2009 to 2014 Budget Year

Yaer	Cost PAD	Realization PAD	Efficiency
2009	22,834,915,462	15,181,573,627	1.504
2010	30,000,000,000	55,197,347,421	0.544
2011	42,000,000,000	55,197,347,421	0.761
2012	35,572,194,975	113,121,892,456	0.314
2013	46.754.837.781	103,330,459,759	0.452
2014	6,500,000,000	115,814,255,742	0.056
<b>SUM</b>	<b>141,243,559,953</b>	<b>457,842,876,426</b>	<b>0.308</b>
<b>Aver</b>	<b>23,540,593,326</b>	<b>76,307,146,071</b>	<b>0.308</b>

Source: APBD Halut, 2016

From the calculation of efficiency ratio above, it can be seen that the efficiency level of North Halmahera Regency government in 2009 was 1.504%, in 2010 it increased to 0.544%, in 2011 it increased to 0.761%, in 2012 it decreased to 0.314%, in 2013 it increased to 0.452% and in 2014 it increased to 0.056%.

Based on the description of relatively good efficiency ratio generated by the North Halmahera Regency government, it is expected that this regional government could improve its financial performance.

### 3.4. Activity Ratio

This ratio depicts how the regional government prioritizes its fund allocation to regular and development expenditures optimally. The higher the percentage allocated for regular expenditure, the lesser the percentage of investment (development) expenditure used to provide people's economic facilities and infrastructure tend to be.

**Table 4.** Ratio of Regular Expenditure to APBD of North Halmahera Tahun Regency Government in 2009 to 2014

Year	Total Routine Spending	Total APBD	Ratio
2009	279,430,203,693	386,129,566,071	0.724
2010	279,971,344,826	-26,055,648,150	-10.745
2011	345,726,586,631	32,023,586,624	10.80
2012	399,813,158,261	32,216,794,522	12.410
2013	429,002,177,124	39,206,278,553	10.942
2014	510,543,236,984	44,610,129,509	11.445
<b>SUM</b>	<b>2,244,486,707,519</b>	<b>508,130,707,129</b>	<b>4.417</b>
<b>Aver</b>	<b>374,081,117,920</b>	<b>84,688,451,188</b>	<b>4.417</b>

Source: APBD Halut, 2016

From the calculation of regular expenditure above, it can be seen that the regular expenditure to North Halmahera Regency's APBD can be classified as fairly good at an average of 4.417%. In 2009 it was 0.724%, in 2010 it became -10.745%, in 2011 it increased to 10.80%, in 2012 it increased to 12.410%, in 2013 it decreased to 10.942% and in 2014 it increased to 11.445%.

From the ratio calculation above, it can be seen that most of the fund owned by the regional government were prioritized for regular expenditure, thus the development expenditure to APBD ratio was relatively still small.

**Table 5. Development Expenditure to 2009-2014 North Halmahera Regency's APBD Ratio**

Year	Total Development Expenditures	Total APBD	Ratio
2009	114,558,898,014	386,129,566,071	0.297
2010	112,480,340,633	-26,055,648,150	-4.317
2011	156,847,351,258	32,023,586,624	4.898
2012	149,924,342,099	32,216,794,522	4.654
2013	143,509,351,979	39,206,278,553	3.660
2014	171,330,577,883	44,610,129,509	3.841
<b>SUM</b>	<b>848,650,861,866</b>	<b>508,130,707,129</b>	<b>1.670</b>
<b>Aver</b>	<b>141,441,810,311</b>	<b>84,688,451,188</b>	<b>1.670</b>

Source : APBD Halut, 2014

From the calculation of growth ratio above, it can be seen that North Halmahera Regency Government's financial performance from year to year was fairly low; its average growth was 1.670% which was below 100%. In 2009 it was 0.297%, in 2010 it decreased to -4.317%, in 2011 it increased to 4.898%, in 2012 it decreased to 4.654%, in 2013 it decreased further to 3.660% and in 2014 it increased to 3.841%.

From the ratio calculation above, it can be seen that the development expenditure to APBD ratio was relatively small since the regional government prioritized more its regular expenditure. North Halmahera Regency government ought to increase its development expenditure from its APBD as needed by their region.

### 3.5. Growth Ratio

Growth ratio measures to what extent the regional government is capable of maintaining and improving the success it has achieved from one period to the next. When the growth for each component of expenditure and revenue sources, it can be used to evaluate which potentials require attention.

From the calculation of growth ratio above, it can be explained that the growth of Regional Government Budget of North Halmahera Regency in 2009, 2010, 2011, 2012, 2013, and 2014 budget years showed fairly positive growth because the absorption of PAD in 2014 was greater, i.e. Rp.115,814,255,742 compared to those of previous years.

## 4. Conclusion

Based on the analysis of results discussed above, the financial performance of North Halmahera Regency Government showed unstable financial performance average. The results of calculation for each year indicated a fluctuation, hence several financial ratios still showed positive and negative trends. For North Halmahera Regency Government's financial independence ratio, until 2014 it showed that its financial independence had been unstable due to its dependence on external sources of fund, particularly the central government. Based on the calculation for effectiveness and efficiency ratio, the performance of North Halmahera Regency Government had not been effective since its effectiveness and efficiency ratio had not reached 1 (one) or 100 percent.

## References

- [1] Halim, Iqbal, 2012, *Pengelolaan Keuangan Daerah*. STIM YPKN.Yogyakarta. Kiyai B, 2006, *Metode Penelitian Sosial*, Buku Ajar. Manado
- [2] Halim, A. 2007. *Akuntansi Sektor Publik*. Akuntansi Keuangan Daerah. Salemba Empat, Jakarta.

- [3] Mangkoesoebroto G, 2008, Ekonomi Publik, BPFE-Yogyakarta.
- [4] Laporan APBD HALUT. 2009. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2009. Kab. HALUT\_Maluku Utara.
- [5] Laporan APBD HALUT. 2010. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2010. Kab. HALUT\_Maluku Utara.
- [6] Laporan APBD HALUT. 2011. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2011. Kab. HALUT\_Maluku Utara.
- [7] Laporan APBD HALUT. 2012. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2012. Kab. HALUT\_Maluku Utara.
- [8] Laporan APBD HALUT. 2013. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2013. Kab. HALUT\_Maluku Utara. Laporan APBD HALUT. 2009. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2009. Kab. HALUT\_Maluku Utara.
- [9] Laporan APBD HALUT. 2014. Anggaran Pendapatan dan Belanja Daerah Kabupaten Halmahera Utara 2014. Kab. HALUT\_Maluku Utara.
- [10] Undang-Undang nomor 32 tahun 2004 tentang Pemerintahan Daerah.
- [11] Undang-Undang nomor 33 tahun 2004 tentang Perimbangan Keuangan antara Pemerintah Pusat dan Daerah.
- [12] Undang-Undang 34 tahun 2000 tentang perubahan Undang-Undang Nomor 18 Tahun 1997 tentang Pajak Daerah dan Retribusi Daerah.
- [13] Undang-undang nomor 12 tahun 2008 tentang perubahan atas UU nomor 32 tahun 2004 tentang Pemerintahan Daerah.
- [14] Undang-undang RI nomor 28 tahun 2009 tentang Pajak daerah dan Retribusi daerah..

# Accounting Information System Analysis of Micro to Medium Enterprises

Mona Permatasari Mokodompit<sup>1)</sup> and Sarah Usman<sup>2)</sup>

<sup>1)</sup>Department of Accounting, Universitas Papua, Manokwari, Indonesia  
E-mail: mmokodompit@gmail.com

<sup>2)</sup>Department of Management, Universitas Papua, Manokwari, Indonesia  
E-mail: sarahwaodeusman@gmail.com

**Abstract.** This study aims to analyze the use Accounting Information System (AIS) on Micro to Medium Enterprises (MSMEs) of industry sectors in Manokwari. The analytical review is based on operational aspects of AIS (business size, business type, firm age, owner's educational level and accounting knowledge) in managing MSMEs. The data of this descriptive study was collected from questionnaires and interviews given to 35 MSMEs. The result shows that the majority of MSMEs use accounting information system in its operational activities. Further, based on the operational aspects it is shown that medium enterprises, handy craft industry, business that have been operating for more than 20 years, owner's with bachelor degree and owner's with accounting knowledge use accounting information system more intensively. This paper can be used as a material consideration in improving the business of MSMEs in Manokwari, particularly in industry sectors.

**Keywords:** *Accounting Information Systems, the Use of Accounting Information System, Micro to Medium Enterprises, Operational Aspects*

## 1. Introduction

Micro to Medium Enterprises (MSMEs) is one of economic activities conducted by most people in Indonesia. Based on International Finance Corporation (IFC) MSME Country Indicator data in 2010, Indonesia was among five countries in the world that had the highest density of MSMEs (Hermanus, 2016). MSMEs activities cover almost all business fields therefore it gives high contribution to generate people's income, particularly those with low income. Therefore, its existence should be supported and encouraged in order to keep MSMEs developing and operating as well as to expand business opportunities and employment.

However, MSMEs also face problems such as lack of education and technology, lack of human resources and also limited capital investment. Moreover, MSMEs owners often face difficulties in providing financial report of its business activities. Thus, potential MSMEs cannot optimally develop. Whereas, financial report can give them information in order to help them make economic decisions, evaluate their business development and help them to obtain financial assistance from financial institution such as Bank.

In Manokwari West Papua Province, the growth of MSMEs based on data from Department of Industry, Trade and Cooperatives has increases by the year. In order to help the development of MSMEs in Manokwari, Bank Indonesia as the central bank of Indonesia has been involved in giving Training of Trainers (TOT) related to the use of financial recording system or in other words Accounting Information System (AIS) (Rizaldy, 2016). Nowadays, AIS is needed in many businesses. Without some adoption or implementation of this advancement in technological products it is difficult to gain competitive advantage and survive (Harash et al. 2014). With the use of AIS, management can formulate various decisions in solving problems faced by the company (Fitriyah, 2006). Further, AIS help to provide financial data in the form of financial report that gives beneficial information to its users (Martani et al. 2012).

Prior studies on the use of AIS by Siyami (2016) shows that majority of Small and Medium Enterprises (SMEs) in Purworejo does not use AIS in its operational activities. The majority of SMEs owners in Purowrejo in manufacturing, trading and service companies from the perspective of age, area of business and business income turnover have not been able to maximize their AIS.

However, based on the fact that the use of AIS played an important role that contributes to company's value added by providing internally generated input i.e. financial statement, therefore the aim of this study is to analyse the use of AIS on MSMEs in Manokwari, particularly in industry sectors. The analytical review is based on operation aspects of AIS (business size, business type, firm age, owner's educational level and accounting knowledge) in managing MSMEs.

## 2. Methods

Data were collected through means of questionnaires by taking into consideration a sample size of owner-managers of Micro to Medium Enterprises (MSMEs) in Manokwari that operated in industry sectors. Apart from the latter, MSMEs targeted also had to adhere to the following delineation criteria:

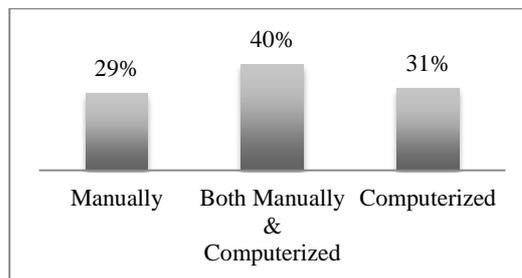
1. MSMEs should have been registered at the Cooperatives Office and SMEs Manokwari
2. MSMEs should have been in existence for at least 1 year
3. MSMEs is using AIS either computerized or manually

Based on the criteria, a total sample size of 35 MSMEs was chosen for this study. The questionnaires used to collect the data consisted mostly of close-ended questions and likert scale questions. Observation and interviews were also used in order to glean rich data for data analysis purposes.

## 3. Result and Discussion

### 3.1. The Use of AIS in MSMEs

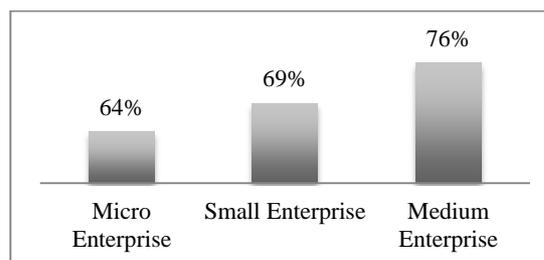
Based on research data analysis, there are 29 percent of MSMEs of industry sector in Manokwari that use Accounting Information System (AIS) manually in its operational activities, and 40 percent that use both manually and computerized and 31 percent that use computerized AIS (Figure 1).



**Figure 1.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari

### 3.2. The Use of AIS in MSMEs from Business Size Perspective

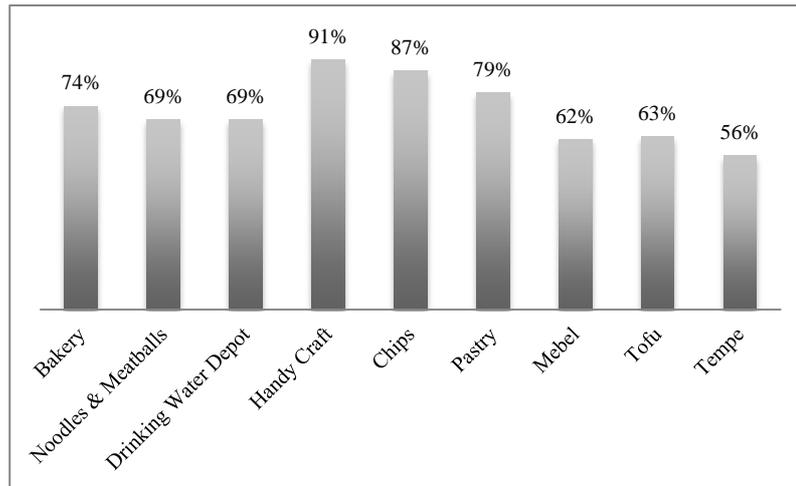
From business size perspective, medium enterprise of industry sectors in Manokwari has the highest percentage compare to micro and small enterprises. Medium enterprises use 76 percent of AIS in its operational activities (Figure 2). Meanwhile, small enterprise only use AIS for 69 percent in its operational activities, this is mostly in identifying cost of goods sold of their products. Further, micro enterprise is only 64 percent since they only use AIS to record daily sales, debts and receivables.



**Figure 2.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari seen from Business Size Perspective

### 3.3. The Use of AIS in MSMEs from Business Type Perspective

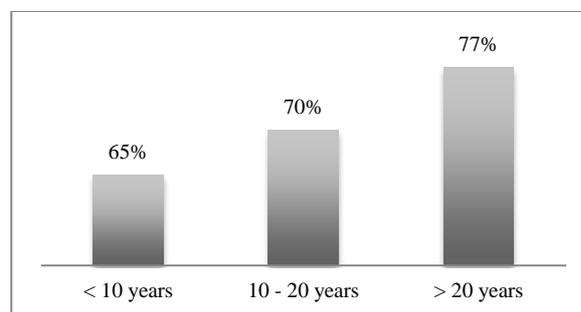
There are 9 business types of micro to medium enterprise industry sectors in Manokwari, that is bakery, noodles and meatballs, drinking water depot, handy craft, chips, pastry, mebel, tofu and tempe industry. However, based on the research data shown in Figure 3, it is shown that handy craft uses 91 percent of AIS in its operational activities intensively compare to other types of industries. It uses AIS not only to record daily sales, debts, receivable but also to identify cost of good sold of the product, inventory and cash on hand. Second position is chips industry with 87 percent. It also uses AIS in its operational activities almost the same as handy craft industry, except it doesn't record its inventories. Meanwhile other industry mainly uses AIS to only record daily sales, debt, receivables. Overall, only handy craft industry that produces financial report even only in the form of income statement.



**Figure 3.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari seen from Business Type Perspective

### 3.4. The Use of AIS in MSMEs from Firm Age Perspective

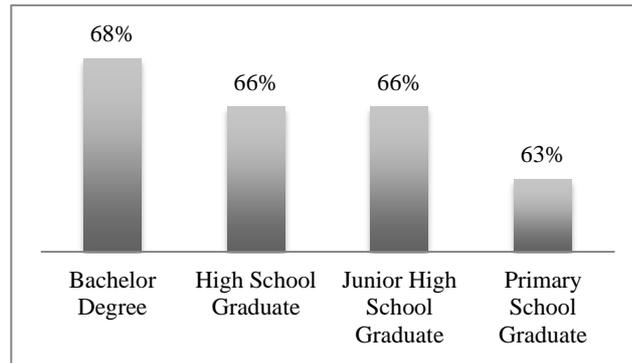
From the firm age perspective shown in Figure 4 below, it indicates that micro to medium enterprises that have been operating more than 20 years uses AIS in its operational activities more intensively compare to the ones that operates between 10 to 20 years and below 10 years. This is due to increasing of knowledge on the importance of using AIS in operational activities, how it helps owners in providing important financial information that is useful as a consideration in making economic decisions for their business development.



**Figure 4.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari seen from Firm Age Perspective

### 3.5. The Use of AIS in MSMEs from Owner's Educational Level Perspective

The use of AIS in MSMEs from owner's educational level perspective is as follows:

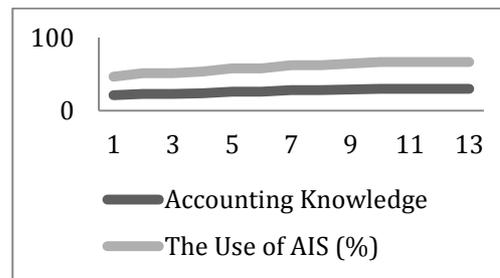


**Figure 5.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari seen from Owner's Educational Level Perspective

Figure 5 shows that owner's educational level of bachelor degree has the highest percentage compare to other educational level. However, the difference among the four types of educational level is not significant. The use of AIS in MSMEs operational activities is not based on the owner's educational level since in the educational level of primary school have also been using 63 percent of AIS in its operational activities. Only 5 percent lower compare to owners with bachelor degree. This is due

### 3.6. The Use of AIS in MSMEs from Accounting Knowledge Perspective

Perspective of accounting knowledge is measured using likert scale questionnaires that obtained statements about accounting knowledge. In Figure 6, it is shown that as the accounting knowledge increases, the use of AIS in MSMEs in its operational activities also increases. This means the use of AIS in MSMEs industry sectors is related to the understanding of owner about accounting. The better understanding of MSMEs owners about accounting knowledge, the better application of AIS in the company compare to owners with low understanding of accounting knowledge.



**Figure 6.** The Use of Accounting Information System in Micro to Medium Enterprises Industry Sectors in Manokwari seen Accounting Knowledge Perspective

## 4. Conclusions

The result shows that the majority of MSMEs use AIS in its operational activities. Further, based on the operational aspects it is shown that medium enterprises, handy craft industry, business that have been operating for more than 20 years, owner's with bachelor degree and owner's with accounting knowledge use accounting information system more intensively.

This study was limited to micro to medium enterprises in industry sector in Manokwari and also has high subjectivity since it is a descriptive study. Furthermore, this study only analyzes the use of AIS based on the operational aspects of AIS (business size, business type, firm age, owner's educational level and accounting knowledge). Therefore, future study can examine the use of AIS from other perspectives.

## ACKNOWLEDGMENT

We would like to thank all the respondents in this study who were willing to fill out the questionnaires and also who were willing to be interviewed in order for this study to be completed.

## References

- [15] E. Harash, S. Al-Timimi and A. H. Radhi. The Influence of Accounting Information Systems (AIS) on Performance of Small and Medium Enterprises (SMEs) in Iraq. *Journal of Business & Mangement*. Vol. 3(4). Pp. 48-57. 2014.
- [16] D. Martani, S. Veronica, R. Wardhani, A. Farahmita and E. Tanujaya. *Akuntansi Keuangan Menengah Berbasis PSAK*, Penerbit Salemba Empat. 2012.
- [17] H. Fitriyah. Analisis Faktor–faktor yang Mempengaruhi Penggunaan Informasi Akuntansi pada Usaha Menengah Kabupaten Sidoarjo. Tesis. Universitas Airlangga, Surabaya. 2006.
- [18] Hermanus, B. Analysis: Scaling Up Micro, Small and Medium Business. *The Jakarta Post*. Website. [Online]. Website: <http://www.thejakartapost.com/news/2016/02/24/analysis-scaling-micro-small-and-medium-businesses.html>.
- [19] N. Siyami. Analisis Penggunaan Informasi Akuntansi Pada Usaha Kecil dan Menengah di Purworejo. Seminar Nasional. The 3<sup>rd</sup> Call for Syariah Paper. FEB UMS. Pp. 184-198. 2016.
- [20] Rizaldy, M. 2016. BI Komitmen Dorong Kemandirian UMKM Papua Barat. *Cahaya Papua*. [Online]. Website: <http://www.cahayapapua.com/11099-2/>.

# Calcium Carbonate ( $\text{CaCO}_3$ ) Scale Formation in A Piping System With Laminar Flow With Varied Temperatures and Malic Acid ( $\text{C}_4\text{H}_6\text{O}_5$ ) As Additives

Muhammad Usamah<sup>1</sup>, Muhammad Rizal<sup>2</sup>

<sup>1</sup>Faculty of Engineering, University of Muhammadiyah North Maluku, Ternate 97726,

E-mail: Musamah80@yahoo.co.id

<sup>2</sup>Faculty of Engineering, University of Khairun Ternate

E-mail: adam.rizal@yahoo.co.id

**Abstract.** Scale formation is a frequent problem encountered in industrial piping system. The occurrence of the scale is due to a chemical reaction between the dissolved ions in water. Calcium carbonate ( $\text{CaCO}_3$ ) is one of the scale that is often found. Scaling will thicken the pipe walls and can affect the rate of flow or heat transfer. Hence preventing to the growth of scales is necesari in pipe. In this study experiments were conducted on the growth of the scale of calcium carbonate in a test pipes, by reacting solution of  $\text{CaCl}_2$  and  $\text{Na}_2\text{CO}_3$  each with a  $\text{Ca}^{2+}$  concentration of 3500 ppm with a flow rate of 30 ml / min and temperatures used were 25, 30 and 40°C. Malic acid ( $\text{C}_4\text{H}_6\text{O}_5$ ) was added to the solution as additive with concentrations of 0, 3, and 5 ppm. Calcium carbonate crystals could be seen from the results of morphological studies conducted using Scanning Electron Microscopy (SEM). The SEM results indicate that at 25°C and without additives, the scale comprises of calcite and vaterite, whereas with the additiv of 5 ppm malic acid, the scale is vaterite with the larger crystal size and there is also calcite, but phase of the vaterite is dominant. At 40°C and without additive the crystal of a aragonite resembles a pile of needles.

**Keywords :**  $\text{CaCO}_3$ , temperature, malic acid, scale

## 1. Introduction

The crust is a hard deposit of inorganic compounds, mostly occur on the surface of the heat exchanger equipment caused by deposition of the mineral particles in the water (A Bhatia, 2003). The cause of the formation of a crust of sediment in the pipes in the industry is there is crust-forming compounds in water with the amount exceeding the solubility equilibrium on the State so formed crystals. The crystals will decrease the diameter and inhibit the flow of the fluid in the pipe system. Disruption of the flow of the fluid causes the higher pressure so that the possibility of damage to pipes (Asnawati, 2001). With the rising temperatures then the calcium carbonate dissolves the less. So the rate of precipitation at temperatures 65°C most higher than the temperature 30°C, because one of the increase of the kinetic of crystallization and the reduced solution of calcium carbonat at higher temperatures (Grases et al, 2007).

The current water treatment and the prevention of the formation of the crust is generally done chemically as ion exchanger resin and the addition of an inhibitor of the crust. This chemical method can change the chemical properties of the solution so that it is not safe enough for use in households and the food industry. In addition the investment is large enough to result in those processes is only suitable for industries that require large amounts of processed water (Kozic dkk, 2003)

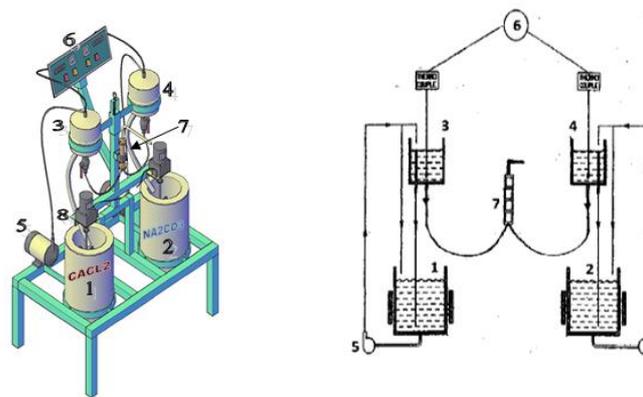
Using Malic acid as an additive, where research is done from 40 mm without additives to Malic acid. Indicate that Malic acid increases affect the formation of Crystal morphology and size (Mao and Huang, 2007).

On the 500 C temperature increase rate time deposit on the solution of  $\text{CaCO}_3$ , and indicates that the Crystal structure changes as a function of time at the surface. On the early existence of the observed Crystal aragonit, calcite and vaterit simultaneously on the surface of the metal. While at room temperature showed aragonit seldom formed, whereas calcite formed at any conditions (Gabrielli, 1999).

This paper aims to find out the mechanism of the formation of a crust of  $\text{CaCO}_3$  in the laminar flow with pipe, and the influence of temperature is  $40^\circ\text{C}$ , and the addition of Malic acid additive.

## 2. Methodology

Research conducted to investigate the formation of a crust on the pipe band, with a laminar reacting solution of  $\text{CaCl}_2$  and  $\text{Na}_2\text{CO}_3$ , and Malic acid as an additive. To make the solution of  $\text{CaCl}_2$  concentration calculation done and  $\text{Na}_2\text{CO}_3$  aqueous solution with a flow rate of 30 ml/min. Then prepare a coupon or pipe test, where the amount of the coupon there are four pairs, with a length of 30 mm, outer diameter 18 mm and an inside diameter of 12.5 mm. Speed the flow leaving the coupon right fit design that is 30 ml/min. This testing is done by calculating the standard deviation of the flow, thus a tool created to have a stable flow rate. Conductivitymeter is used to measure the conductivity of the solution. The accuracy of this instrumentation can be tested by doing the measurements against the conductivity of aquades. Fig 1 is a research tool.



**Figure 1.** Picture of Research Tools

Flow speed of the I and II vessels should be uniform. This can be observed through the channel level controller. When a second vessel, the level is always the same then the flow velocity are both the same. Setting the price difference in height between IE  $\Delta h$  surface solution on vessel III and IV against the sewage flow rate regulator as tested by trial and error. SEM test and testing can be done on one microanalyser instruments using SEM-EDX. SEM done testing to study the morphology of crystals while testing microanalyser aims to find out the composition of the Crystal and XRD test to prove that the crust of the results of the research it's downright crust Calcium Carbonat ( $\text{CaCO}_3$ ). Data retrieval is done by as much as nine times that is composed of three attempts for the formation of a crust without additives, a three-time experiment for the formation of a crust with additive  $\text{C}_4\text{H}_6\text{O}_5$  3 ppm, a three-time experiment for the formation of a crust with additives  $\text{C}_4\text{H}_6\text{O}_5$  5 ppm. First solution of  $\text{CaCl}_2$  incorporated a number of five liters in the next vessel I inserted into the vessel of  $\text{Na}_2\text{CO}_3$  aqueous II five litres. After that the pump is switched on and ride solution fill to the upper limit of the vessel III and IV and the vessel immediately then the pump is turned off. A few moments later the pump is switched on and the solution begins to fill in the coupon and thus the experiment has begun. Registrar at the same time also enabled where every two minutes once the measurement has to be done against the conductivity of the solution. Measurement of the conductivity of a solution to conduct sewage the solution coming out of smaller vessels on accommodated coupons made of plastic and conductivitymeter electrode may soon be included. Conductivitymeter will measure the value of the conductivity of the solution so that the digital readout starts from zero rise steadily until it finally stopped. This last figure is recorded. So this is done repeatedly restarted every two minutes. After four hours of time then the pump is stopped and a detachable coupon towards the channel. An hour later a coupon taken from home coupons and dried in an oven with a temperature of  $60^\circ\text{C}$  for six hours. Weighing the mass of the crust is done at the time the crust still sticking on the coupon.

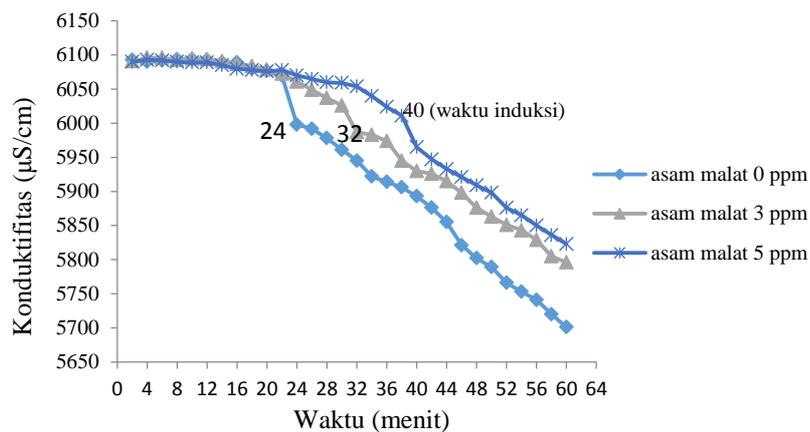
### 3. Result and Discussion

#### 3.1. Induction Time

Induction time is the time needed by the ions in the solution to react so that forms the core of the first crystal. The methods used to determine the length of time the induction is by measuring the conductivity of the solution out of the test pipe. The end of the induction time is shown by the sudden decline of the conductivity of the solution, which means a number of Crystal-forming ions have left the solution to form crystals on the walls of the pipe. Induction time is calculated from the start ions reactions forming calcium carbonate until the conductivity of the solution down.

#### 3.2. Induction time to experiment on temperature 25°C

Induction time on trial with temperature 25°C with three variation of additives can be seen in Fig 2. below.

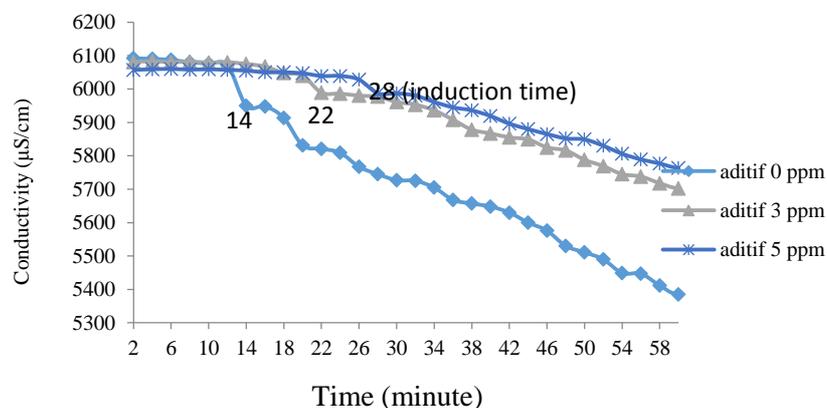


**Figure 2.** The relationship time and conductivity to the three additive variation on temperature 25°C

In Fig 2 is seen that for calcium carbonate crust formation experiments on temperature 25°C with three different variations (0, 3 and 5 ppm) indicate that to experiment with three variations of the induction time additives obtained under 45 minutes. Induction time for each time the experiment is not the same, if the additive is added with different concentration of induction time will change. Thus the third graph of induction time to room temperature (25°C), and three variations of additives indicates that the concentration of additives can affect the time induction for the influence of temperature against time induction can be known by making the graph of the relationship between the temperature of the induction time, as shown in Fig 2.

#### 3.2. Induction time to experiment the temperature of 40°C

Induction time on trial with temperature 40°C with three variations of the additives can be seen on the graph of the relationship between time with the conductivity as in Fig 3.



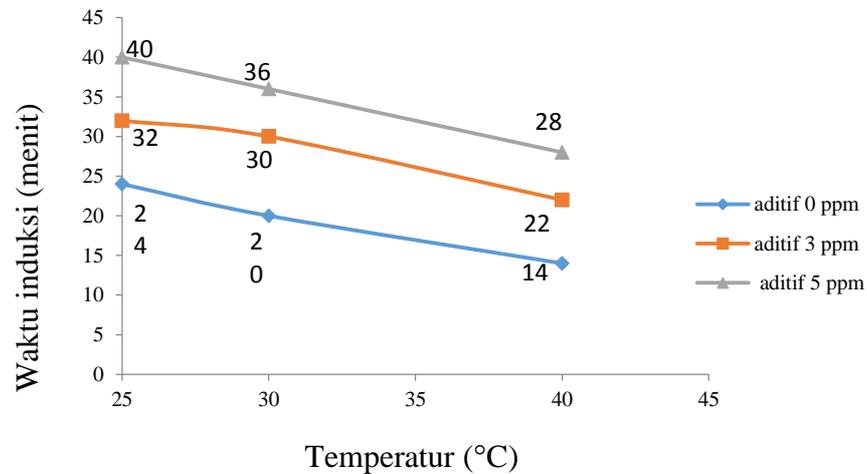
**Figure 3.** The relationship time and conductivity to the three additive variation on temperature 40°C

Fig 3 shows that the induction time to experiment the formation of calcium carbonate crust on temperature 40°C with three different additive variation shows that the induction time obtained under 30 minutes. Induction time happens on three variations of additives on temperature 40°C showed the difference between induction. Thus that the addition of the concentration of additive with different concentration can affect the conductivity. A third of the graphic above shows that rising temperatures lead to increased conductivity of reaction and going down quickly, so the free ion is reduced.

The graph happens to experiment with temperature 25°C has a similar pattern with charts on the experiment with the temperature of 30°C and graphs on an experiment with temperature 40°C. Thus the process of crystal formation on three experiments are almost the same.

### 3.3. Influence of Temperature against time Induction

The influence of temperature against time induction can be known by making a graph with time-temperature relationship of induction in the produce on each experiment as shown in Picture 4.

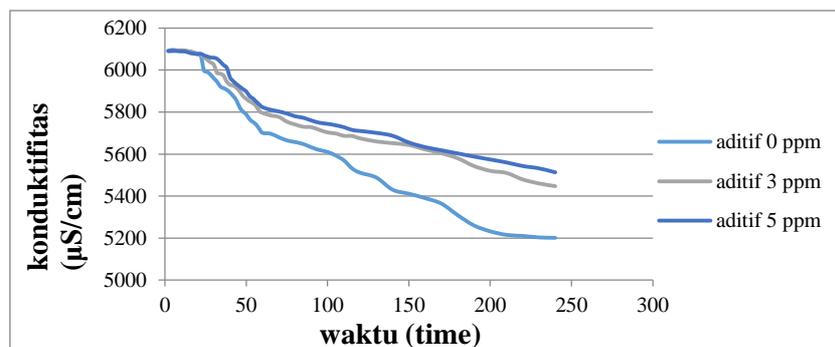


**Figure 4.** Relationship between temperature with induction time with three variations of the additive.

Fig 4. shows that of the formation of calcium carbonate crust without additives, a rise in temperature of 25°C become 30°C decreases induction time of 28.56% and the increase in temperature of 25°C became 40°C lowering induction time of 58.14%. Crust-forming experiments on calcium carbonate (CaCO<sub>3</sub>) with a temperature rise of 3 ppm additives from 25°C become 30°C decreases induction time of 22.14% and the increase in temperature of 25°C became 40°C lose time induction of 50%.

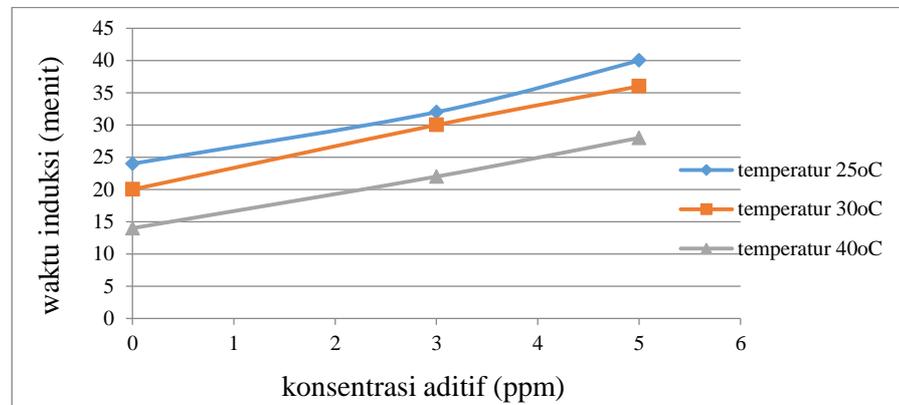
Experiment with additive 5 ppm, increase in temperature of 25°C become 30°C decreases induction time of 28.56% and the increase in temperature of 25°C became 40°C lose time induction of 42.67%.

### 3.4. influence of Additive with respect to time of induction



**Figure 5.** Relationship between time with the conductivity for the three variations of the additive on temperature 25°C

From Fig 5 looks that the graph happens to experiment with temperature 25°C with additives and without additives have the same shape. For the influence of additive with respect to time of induction can be known by making a graph of the relationship between the concentration of induction time as shown in Fig 6.

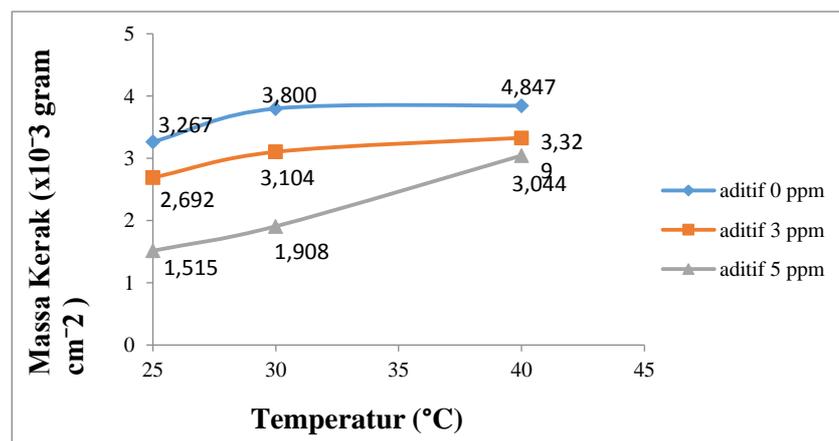


**Figure 6.** Relationship between additive concentration and induction time

From Fig 6, it is seen that the experiment on temperature 25°C, in an experiment without the induction additive time is 24 hours, time of induction to experiment with additive 3 ppm is 32 minutes and experiment with additive 5 ppm induction time is 40 minutes. Induction time for each time the experiment is not the same, if the additive is added with different concentration of induction time will change. The graph of these three all showed that the higher the concentration of the additive (0 ppm – 5 ppm) the induction longer.

### 3.5. Influence of temperature against the masses of Crust

From experiments with temperature 25°C, 30°C and 40°C and the addition of the additive 0 ppm (without additives), 3 ppm and 5 ppm, can be made a graph of the relationship between the temperature of the mass with the crust such as picture 4.6.



**Figure 7.** relationship between the temperature of a mass of crust

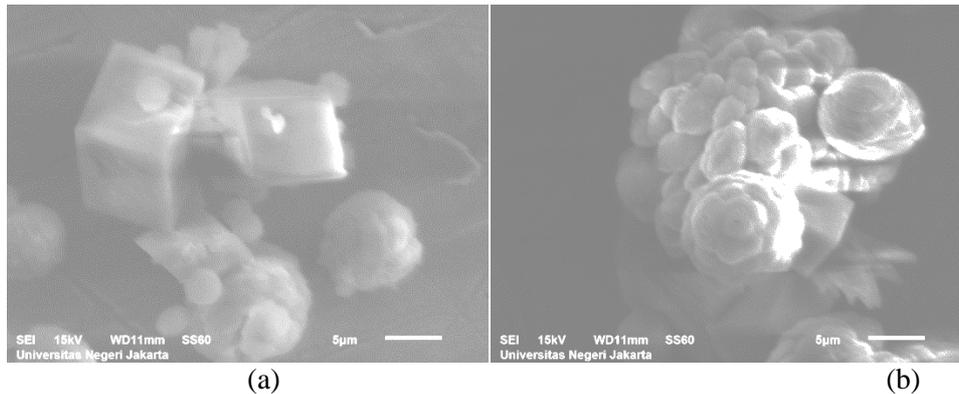
In Fig 7 to see that graph that occurs in experiments with additive 0 ppm (without additives), additives 3 ppm 5 ppm, and additives of the chart indicates that the third when higher temperatures (25°C-40°C) masses of crust is also growing. Experiment without additives, a rise in temperature of 25°C to 40°C and increase the mass of the crust, thus can be drawn the conclusion that the temperature influence is very strong against masses of crust, the higher the temperature of a mass of crust that formed more and more.

### 3.6. The Morphology of Crust

The study of morphology, conducted with the aim to identify whether the Crystal experiment results actually crystals of calcium carbonate. To find out the shape of the crystals used Electron

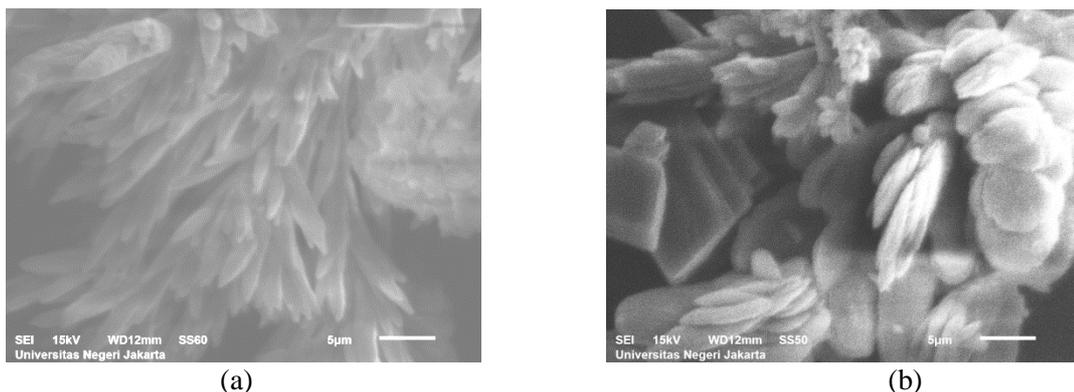
Microscopy Scanning tool (SEM) with a specific enlargement so that it can be identified if the Crystal is happening actually crystals of calcium carbonate. Scanning Electron Microscopy of results (SEM) of Crystal experiment results shown in Figure 8 and 9.

The crust of  $\text{CaCO}_3$  alone has three different forms that will determine the type of crust formation, then these three types of  $\text{CaCO}_3$  crystals of calcite, i.e. aragonit and veterit. From the pictures the results of SEM in mind that forms crystals experiment results in Figure 4.8 and 4.9 was the hallmark of the Crystal forms of calcium carbonate. This is in accordance with previous studies (Qingfeng, et al, 2010).



**Figure 8.** The results of SEM calcium carbonate crystals experiment results of temperature  $25^\circ\text{C}$ ,  $\text{Ca}_2$  + concentration of 3500 ppm, (a) without additives, enlargement 3000x enlargement, (b) 3000x, with additive 5 ppm,

Fig 8 shows the results of a test particle SEM  $\text{CaCO}_3$  at temperature  $25^\circ\text{C}$  with no additive (0 ppm) and additive 5 ppm with 3000 times enlargement. Fig 8 (a) with the enlargement of the 3000x, is the result of a test particle in experiments with temperature  $25^\circ\text{C}$  without additives. In the picture it looks that this type of Crystal that forms is calcite and vaterit. In Fig 8 (b) with the enlargement of the 3000x is the result of a test particle with additive 5 ppm, in fig 8. (b) shows that there is a change in the form of crystals  $\text{CaCO}_3$ , at magnification 3000x, vaterit Crystal form that is visible to resemble flower (flower-like ), and there is also a form of calcite crystals, but vaterit is the most widely established.



**Figure 9.** the results of SEM calcium carbonate Crystals experiment results of temperature  $40^\circ\text{C}$ ,  $\text{Ca}_2$  + concentration of 3500 ppm, (a) without additives, enlargement of 3000x, (b) and 5 ppm 3000x magnification additive.

Fig 9 shows the results of a test particle SEM  $\text{CaCO}_3$  temperature  $40^\circ\text{C}$  experiment with 3000 times. Fig 9 (a) is the result of test on temperature of  $40^\circ\text{C}$  without additives. In the picture it looks that this type of crystals that are formed in the form of a collection needle that is the type of aragonite. From these results it can be known that temperature can also change the shape of the crystals  $\text{CaCO}_3$ . While in Fig 9 (b) and additive 5 ppm, indicating that the changes which the Crystal magnification 3000 times seen that there is a change in Crystal form.

#### 4. Conclusion

A strong influence of temperature against time induction, i.e. when temperature rise induction time will fall, meaning that rising temperatures will accelerate the formation of the Crystal core. Malic Acid additives ( $C_4H_6O_5$ ) was able to extend the time of the induction, which means it is able to inhibit the formation of the Crystal core. When the additive is added the more induction time also the longer, meaning that the process of the formation of the Crystal core becomes slower.

#### ACKNOWLEDGEMENTS

The authors would like to appreciate the useful and constructive comments made by the anonymous reviewers of this manuscript.

#### References

- [1]. Bhatia, A, 2003, *Cooling Water Problems and Solutions*, Continuing Education and Development, Inc. 9 Greyridge Farm Court Stony Point, NY 10980. Course no: M05-009
- [2]. Asnawati, 2001, *Pengaruh temperatur terhadap reaksi fosfonat dalam inhibitor kerak pada sumur minyak*. Jurnal ILMU DASAR, vol.2 no.1.
- [3]. F. Grases, J. Perelló, B. Isern and A. Costa-Bauzá, 2007, *Myo-inositol hexakisphosphate (phytate) inhibits calcium carbonate crystallisation in hard water*. Water SA vol. 33 no. 5 October 2007
- [4]. Kozic V. and Lipus L.C, (2003), *Magnetic water treatment for a less tenacious scale*. Journal Chem. Inf. Comput. Sci., 43, 1815-1819
- [5]. Zhaofeng Mao, Jianhua Huang, 2007, *Habit modification of calcium carbonate in the presence of malic acid*, Chem., 180, 453-460
- [6]. S. Muryanto, A.P. Bayuseno, W. Sediono, W. Mangestiyono, Sutrisno, (2012), *Development of a versatile laboratory project for scale formation and control*, Chemical Engineers.
- [7]. C. Y. Tai, W. C. Chien, (2003), *Interpreting the effect of operating variables on the induction period of  $CaCl_2$ - $NaCO_3$  system by a cluster coagulation model*. Chem. Eng. Science 58, 3233-324
- [8]. Qingfeng Yang, Yangqiao Liu, Anzhong Gu, Jie Ding, Ziqiu Shen, (2002), *Investigation of induction period and morphology of  $CaCO_3$  fouling on heated surface*, Chemical Engineering Science, 57 pp; 921-931

# Continuum Concept of Motivation Factors and Discipline of Employees to Improve Quality of Service

Mukarto Siswoyo<sup>100</sup> Eka Susilawati<sup>101</sup>

**Abstract.** To improve the motivation of employees to work, it needs to give the reward objectively, such as giving reward for the best employees. This reward can be increasing the incentive, bonus, praise, or the best employee achievement. The leader needs to improve personal approach to the employee to accommodate the aspirations' or complaints' of the employees related with their job. Giving the employees attention is a kind of a motivation for them. So they are motivated to work. To improve employee discipline, it needs to implement a fair punishment system for those who are undisciplined in the work through persuasive approach. It is hoped that it can raise their self awareness to work with discipline. That mechanism concept can lead to improve the quality of service to the society.

**Keywords:** *Motivation, Employee Discipline, Service Quality.*

## 1. Introduction

The implementation of good governance is the most prominent issue in the management of public administration in the Republic of Indonesia. This is influenced by the public demand to the government to conduct good governance and it is in line with the increasing of community dynamics and knowledge of society. The government in this case as civil servant functioned as the servant of society. It must give the best service to society because giving service to the society is the function of civil servant.

Discipline factors play important role in implementing the best service to the society. The employees who have high level of discipline will work well though they are not supervised by the boss. The discipline employees will not do anything in their job. And the employee will obey the roles in the work environment with the awareness or without coercion. At the end, the employees who have high level of discipline will have high quality of work and it will influence to give the best service to the society because they do the job as the target to reach.

Motivation factors also play important role to improve the quality service to the society. Motivation is as a trigger to do the activity to get the best result. It cannot be denied that the employee with high motivation have high qualification in the work. So that the employees' motivation must be awakened in order to they work well and give the best service to the society. The problem is that unoptimal service still can be found in the government institution. It can be influenced by the low discipline and motivation of employees. Thus a question comes up "how do the discipline employees influence the quality service in the government institution?"

## 2. The Concept of Motivation

Through etymological, motivation comes from *movere* (Latin) and it has similar meaning with *to move* (English) with the meaning to push or to move. Motivation is as an effort to raise individual spirit, the spirit of employee to work in order to reach the goal through giving their needs.

Motivation arises because of the motive from person as proposed by Ali (2005: 756), he said that the meaning of motivation as follows:

The impulses come from someone consciously or unconsciously to act an action with certain purpose or the efforts cause someone or group to do something because they want to achieve the goal or get satisfaction from their actions.

Every motive has certain goal to be achieved as Siagian (2005: 142) said:

---

<sup>100</sup> Dr. Mukarto Siswoyo, Drs., M.Si is the lecturer of postgraduate of the Magister of Administrative Science at University of Swadaya Gunung Jati, Cirebon, West Java.

<sup>101</sup> Eka Susilawati is postgraduate student of the Magister of Administrative Science at University of Swadaya Gunung Jati, Cirebon, West Java.

Motive is psychological circumstance that encourage to activate or to move. Motive aims the behaviour, attitude of people. Motive is also associated with achieving the goal, both organizational goals and personal goals.

Motivation is the result of a person's interaction with the particular situation. According to Robbin (2001:166), motivation is a willingness to create high levels of effort for organizational goals which is adjusted by the ability to fulfil the needs.

According to Ranupandjoyo, Heidjrahman and Husnan (2002: 205), the theory of motivation can be grouped into two categories: content theories that focus on the attention of the factors of people that energize, direct, sustain, and stop. Process theories that describe and analyze how the behavior is reinforced, directed, supported and discontinued.

According to Ranupandjoyo, Heidjrahman and Husnan (2002: 205), kinds of motivation can be grouped into two categories, those are:

- a. Positive motivation is a process to influence others to do something that we want with the way such as giving the reward.
- b. Negative motivation is a process to influence others to do something that we want, but the basic technique used is through power of anxiety. The knowledge of human motivation is still developing, it deals with the human motivation that is dynamic. Meaning that the motivation follows the development of human and environment. Basically, motivation is influenced by the perception of people that develop their age, life, social, culture, environment, organization, or the place that they work. Motivation that arise from employees, executives, and the leader of labor has similarities and differences.

Mc. Clelland in Hasibuan (2007: 162) stated his theory which is called *Mc Clelland's Achievement Motivation Theory*. The points which motivate people are:

1. *The need for achievement*
2. *The need for affiliation*
3. *The need for power*

The explanations are as follows:

1. The need for achievement  
The need for achievement is a trigger that motivate people's spirit to work because this need will encourage someone to develop their creativities and aim all skills and energies to achieve the job performance. The employees will be enthusiastic to work well, if they are given the opportunity. The need of achievement reflects from their desire to take a responsibility in doing a job given. They decide the goals and also count the risk from the job. They get feedback from their attitude and they try to do everything with creative and innovative. They realize that they will get high income if they work well. By the high income, they can fill their needs.
2. The need of affiliation as a trigger that motivate people's spirit to work  
This is shown by the desire to associate where they emphasize on their work, they are happy to cooperate, they ask other opinions to get the agreement from the others, and they do their job more effective if they cooperate with others in cooperation. Thus, this need attracts the spirit of employees to work because everyone wants things as follows:
  - 1) *Sense of belonging*
  - 2) *Sense of important*
  - 3) *Sense of achievement*
  - 4) *Sense of participation*
3. The need for power  
The need of power is a trigger that motivate people's spirit to work. This need reflects on someone who has influence over others, sensitivity to influence structure among groups or organizations, entering the organization that has the achievement, obeying the policy of the organization, trying to lead others by managing them and make them impressed, and keeping the reputation and leadership. Thus, this need will attract and motivate the spirit of employees to work and they are all out with their capabilities in order to achieve the power and good position.

Efforts to optimize the achievement of organizational goals through the provision of motivation must be really considered. We need to note about the process of giving good motivation as presented by Hasibuan (2005: 101) as follows:

- a. The goals in the process of motivation must be set earlier than organizational goals. Then the employees are motivated to achieve those goals.
- b. Knowing the interest; in the process of motivation, it is important to know the need of employees and it is not seen only by the interest of the leader and the company.
- c. Effective communication; effective communication with employees must be conducted in the process of motivation. The employees have to know what they will get with some conditions such as what they must do to get the incentive.
- d. Integrated goals; the goals of the factory and the employees must be united in the process of motivation. The goal of the company is need complex such as to get the profit, company expansion. And the goal of employees is to fulfill their needs. So the need of the company and employees must be united.
- e. Facilities; in the motivation, the manager have to facilitate the company and employees that are able to support their work.
- f. Team work; the manager have to create the team work that can coordinate well to achieve the company's goals because there are many subs in the company.

The main problem in the motivation is how to make the employees work optimally to achieve the organizational goals. Maslow in Hasibuan (2005: 104) has developed a concept of motivational theory known as *the hierarchy of needs* as follows:

1. **Physiological Needs**  
The implementation of physiological need is the need of human being such as clothes, house, food, and individual prosperity. These needs are categorized as the basic needs because people cannot live normally without those needs.
2. **Safety Needs**  
Safety need must be seen from wide perspectives. It is not only in the meaning of physical safety but also physiological safety, and the equal treatment in the job.
3. **Social Needs**  
Human beings are social creatures. They cannot fulfill their need by themselves, and they need the assistance of others. So they must get along to others.
4. **Esteem Needs**  
Everyone need an acknowledgement or status from other people. The ideal situation is when the prestige appears and it makes someone get the achievement. But, if someone gets the higher position, there will be many symbols used.
5. **Self Actualization**  
Everyone has a talent to develop, then it can be a contribution to the organization. The ability to work well will influence/fulfill the needs. Someone tends to develop himself to do best.

Basically, organization or company hope that the employees not only have an ability, capability, and skill but also they can work well to achieve the goals optimally. The ability, capability, and skill are meaningless if the employees don't want to work hard by using those abilities, capabilities, and skills.

Motivation is important because the employees are hoped to work hard and be enthusiastic to achieve the quality of job performance. But it must be realized that they want to work hard because they want to fulfill their needs from the work.

### **3. Understanding Work Discipline in Conceptual Level**

Discipline is the attitude of life that reflects responsibility. This attitude or behaviour is followed because that is true and beneficial for them and society. Etymologically, discipline comes from the Latin "*disipel*" which means followers. By the development of the era, the word is changed to "discipline" which means pursuance that relates with the order. Meanwhile, according to Hasibuan (2007: 193), discipline is the awareness and adherence of a person to the rules of the company/institution and social norms that prevails.

According to The Liang Gie (1981: 996), discipline is defined as the order in which people in the organization obey the rules gladly. Meanwhile, according to Wursanto (1987: 147), the discipline of work is an attitude of obedience of a person to the rules/provisions that is applied in the organization or joining the organization with awareness or without coercion. Based on these opinions, the discipline of work is an attitude of obedience to the organizational rules of the organization.

According to Siagian (1997: 145), work discipline is a mental attitude that is reflected in the actions or behavior of a person, society in the form of obedience to the rules, norms prevailing in society. So discipline is a mental attitude that is reflected in the actions or behavior of a person, society in the form of obedience to the rules, norms prevailing in society.

According to Terry (1993: 218), kinds of work discipline are:

1. *Self discipline*  
This discipline arises because people feel that their needs are fulfilled and become part of the organization, so they will obey the rules consciously.
2. *Command discipline*  
This discipline grows not from feelings of sincerity, but arises from coercion of others. In every organization, the first kind of organization is needed. But the fact always shows that discipline is mostly caused by coercion of others. Discipline refers to behavioral patterns with the following characteristics:
  - a) There is a strong desire to fully implement what has become the norm, ethics, applicable norms.
  - b) The controlled behavior.
  - c) The obedience.

The discipline or undiscipline of employees can be seen from:

- a) The obedience of employees to the rules such as they come on time and have a responsible attitude with their job.
- b) Using the procedures to work.
- c) Keeping the facilities of the office.

According to Handoko (1990: 129-130), there are three types of discipline activities. Those are:

1. Preventive discipline: the activity that encourages employees to follow various standards and rules, so the deviation can be prevented. The main purpose of this activity is to encourage self-discipline among employees. The employee can work consciously without any coercion.
2. Corrective discipline: an activity undertaken to deal with violations committed by employees through regulations and to prevent further violations. Corrective activity can be in the form of punishment for instance giving suspension to the employees.
3. Progressive discipline: an activity to give heavy punishment to repeated violation. The examples of progressive discipline are:
  - a. Verbal warning from supervisor.
  - b. Written warning.
  - c. Suspension from work for several days.
  - d. Demoting the position
  - e. Being fired.

Although the order exists, the employees don't obey the rules by themselves but it needs the assistance of organization to manage the employee to obey the rules. To manage the employee to be disciplined, some principles of discipline are proposed as follows:

1. Discipline is done personally.  
Discipline is done by avoiding not to reprimand in front of people, because it can make the employee ashamed and angry.
2. Constructive discipline  
Besides showing the mistakes of the employees, it is necessary to give the way to solve them. So the employees are not confused to face the mistakes done by themselves. In doing the discipline to employees, equal treatment is needed without differentiating the employees.
3. The discipline is done when the employees are not absent  
The leader should do the discipline when the employees who made the mistake are present, so the employees will know that they made a mistake.

According to Hasibuan (2007: 194), indicators that influence the level of employee discipline are:

1. Goals and abilities
2. Leader's example
3. Recompensation
4. Justice
5. Intensive supervising

6. Punishment
7. Firmness
8. Humanitarian relations

Based on those opinions, it can be concluded that work discipline is the attitude of obedience from a person or people to the written or not written rules which reflect in the behaviour at a organization to achieve certain goals. The purpose of both collective and individual discipline is to direct behavior to a harmonious reality. To create these conditions, the harmony must be created between the rights and obligations of employees.

The main purpose of discipline is to encourage employees to have good behaviour in the place where they work. The behaviour is set as regulations or procedures that is functioned as law in the society. Discipline is one of functions from the management or human resource as the important operational function of MSDM. Because if the employees work well, they will achieve the goals. Without the discipline of the employees, it is difficult for organization to achieve the optimal result.

#### **4. Quality of Service**

The implementation of government is based on new paradigm, that is as a servant of society not being served by society, it is based on Good Governance. It is in line with the opinion of Widodo (2001: 1), he said that:

Essentially, the government is a servant of society, not to serve itself but to serve society and create the condition that allows the society develop the skill and creativity to achieve the goal together.

According to Kotler (2002: 83) the definition of service is any activities that can be offered by a party to another party, which basically does not result in any ownership. The production can be linked or cannot be linked to a single physical product. A service is the behaviour of producer in order to meet the needs and desires of consumers for the achievement of satisfaction on the consumer. In addition, Kotler also said that behavior can occur during, before and after the transaction. Generally high quality services will result in high satisfaction and frequently re-purchase. The word quality has a lot of definitions and meanings. Different people will define differently, but from the definitions we can find, it has similarities although it deals with the way to deliver. There are some elements as follows:

1. Quality covers the effort to fulfill the hope of customer.
2. Quality covers product, service, human, process, and environment.
3. Quality is a condition that always changes.

Triguno (1999: 76) stated the quality is as a standard to be achieved by person/group/institution/organization on the quality of human resources, quality of work, process, result of work, or the product such as goods and services. Quality has a meaning to satisfy the customer, both internal and external, in the meaning of fulfilling the needs of society optimally.

Based on the explanation above, it can be concluded that the quality of service is one of answers of individuals, groups, and organizations (public private) in addressing the era of competition with the emphasis aspect to fulfill the expectations of service users / customers. A quality service is a service that can fulfill the customer expectation, or even more.

Basically, quality which related with the service is an attitude of employees in serving the customers or society. Luthans in Moenir (2006: 17) stated that a service is a process of fulfilling the needs through activities of others to achieve the goals.

Quality of service has almost become a decisive factor in deciding the sustainability of a government bureaucratic organization or corporate organization. Good service which needs government service is very important to realize customer satisfaction (society). Thus, this quality must be adjusted with product specifications demanded by customers, although actually it is difficult to decide whether the product has quality or not. But the obligation of the provider of a service is to avoid any complaints from customers. As it is said by Lukman (1999: 9):

For customers, the quality of service is to adjust to the specifications demanded by customers. The customer decides how the quality is and if this valuable is. The customer considers a quality of service. The quality can be detected by its form, so that it can be found: (1) the quality of service is a promise, (2) the quality is the achievement of an expectation and reality as a commitment which is set before, and (3) quality and integrity are inseparable.

Customer satisfaction is very important to determine the successful of the implementation of quality services. Customer satisfaction can be achieved if there is conformity between what is expected by the customer with the reality obtained, in this case is the quality of a product in such as goods or services, Supranto (2001: 2) stated that "a product has a quality if it can meet their needs".

Sugiarto (1999: 39) stated that the measurement of the successful of service is not measured by the management but by service users. Then, it is used to build a modern service quality system to be effective. Gaspersz in Lukman (1998 : 14) formulated 13 steps to take. Those are as follows:

- 1) Define and specify the objectives and wisdom of quality.
- 2) customer satisfaction oriented.
- 3) Direct all activities to achieve the goals and policies of quality that have been established.
- 4) Integrate the activities within the organization.
- 5) Provide explanations and duties to workers that should be concerned with the quality of goods or services to do an integrated quality control program.
- 6) Specify the quality control to the seller.
- 7) Identify the quality of the equipment carefully.
- 8) Identify and streamline the flow of quality information, process it and control it.
- 9) Conduct training and motivate employees to continue to work with the orientation to improve quality.
- 10) Control the cost of quality and other measurements and set the quality standards.
- 11) Make the corrective action that has positive impact.
- 12) Continue the control system which covers the next step, receive feedback information, analyze the result, and compare with quality standard.
- 13) Check activities of the modern quality system periodically

Those steps above illustrate that no matter what the circumstances are,

The above steps illustrate that whatever the form is, the circumstance is, there is no reason for service provider not to satisfy the customer. The expectation of customer get the first place because it determines the existence of the organization itself, so it needs the strong commitment to realize the mission of excellent service.

In addition, Zethaml in Sedarmayanti (2007: 266-267) stated that the measurement of service quality can be measured by ten dimensions. Those are:

1. *Tangibles*, it consists of physical facilities, equipment, personnel, and communications.
2. *Realibility*, it consists of the ability of service units in creating a service which is promised.
3. *Responsiveness*, the ability to make the customer responsible for the quality of service provided.
4. *Competence*, it is a must for the apparatus giving the service to have good knowledge and skill.
5. *Courtesy*, friendly attitude or behavior, responsive to the needs of consumers, and want to make contact or personal relationships.
6. *Credibility*, honest attitude in every effort to attract public trust.
7. *Security*, the services provided must be free from various dangers and risks.
8. *Access*, it is easy to get contact or approach.
9. *Communication*, willingness to provide services to listen to the voice, desire or aspirations of customers, as well as the willingness to always convey new information to society.
10. *Understanding the Customer*, make every effort to know customer needs.

In practical operation, the quality service of government to society is the better service, the more timely, the easier to obtain, and the distribution is fair, faster service, reasonable, efficient, cheap, honest, responsive accommodative, innovative, productive, satisfying and profesional. Thoha (1995: 41, Pamungkas, 1996: 207, Rashid, 1997: 100, Ndraha, 1997: 63) as the perceptions, demands, needs, interests, aspirations, circumstances and conditions of society. It should be understood that general service is a duty that must be done by the government apparatus to achieve general satisfaction.

Employees in an organization or office in work must have high motivation. Employees can actualize themselves with the ability they have to take a role in the organization. Motivation that needs to be developed within the organization is the motivation of work. According to Siagian (1992: 128) motivation is "the whole business, ways, techniques and methods that encourage the members of the

organization to work consciously in order to achieve organizational goals efficiently, effectively and economically".

Employee motivation will arise when the needs of employees are met. Therefore, to encourage the employee working well, it needs to pay attention and meet the various needs of employees.

Mc. Clelland in Hasibuan (2007: 162) put forward his theory of Mc Clelland's Achievement Motivation Theory. The things that motivate employees are:

1. Need for Achievement, 2 Need for Affiliation, 3 Need for Power

The explanations are as follows:

1. The Need for achievement

The need for achievement is a trigger that motivate people's spirit to work because this need will encourage someone to develop their creativities and aim all skills and energies to achieve the job performance. The employees will be enthusiastic to work well, if they are given the opportunity. The need of achievement reflects from their desire to take a responsibility in doing a job given. They decide the goals and also count the risk from the job. They get feedback from their attitude and they try to do everything with creative and innovative. They realize that they will get high income if they work well. By the high income, they can fill their needs.

2. *The need of affiliation*

This is shown by the desire to associate where they emphasize on their work, they are are happy to cooperate, they ask other opinions to get the agreement form the others, and they do their job more effective if they cooperate with others in cooperation. Thus, this need attracts the spirit of employees to work because everyone wants things as follows:

- 1) *Sense of belonging*, 2) *Sense of important*, 3) *Sense of achievement*, 4) *Sense of participation*

3. *The need for power*

The need of power is a trigger that motivate people's spirit to work. This need reflects on someone who has influence over others, sensitivity to influence structure among groups or organizations, entering the organization that has the achievement, obeying the policy of the organization, trying to lead others by managing them and make them impressed, and keeping the reputation and leadership. Thus, this need will attract and motivate the spirit of employees to work and they are all out with their capabilities in order to achieve the power and good position.

Another factor that also affects the job satisfaction is the discipline of work. Institution makes rules which all employees obey and implement essentially with the the purpose that all employees can work well with their competencies.

Discipline is an attitude of obedience to a rule or provisions that is applied in the organization on the basis of the existence of awareness and conviction, not coercion. Heidjrachman and Husnan (2002: 15) stated that discipline is every individual and group that ensures compliance of the command and has initiative to do an action required if there is no command ". According to Davis (2002: 112) "discipline is a management action to encourage the implementation of organizational standards. This is the training that leads to efforts to justify and involve knowledge of attitudes and behaviors of employees so there is a willingness in the employee to cooperate and achieve better performance". Discipline is also defined as a willingness of someone that arises consciously to obey the rules in the organization.

According to Lateiner in Imam Soejono (1983: 72), generally, employee discipline can be measured by:

1. The employees come to the office orderly, and on time. By coming to the office orderly, and on time, so discipline of work is good.
2. Dressing neatly  
Dressing neatly is one of the factors that influence employees discipline, because dressing neatly will feel more comfortable and confidence.
3. Using the office facilities carefully  
Careful attitude can indicate that a person has a good working discipline because if the employees use the office facilities carelessly, the damage will happen and it becomes disadvantages.
4. Following the procedures of work set by the organization

By following the procedures of work set by the organization, it can indicate that the employees have a good working discipline and obey the rules of organization.

5. Having a responsibility

Responsibility has a big influential on the discipline of work. With the responsibility to the jobs, it can show that the discipline of employees is good.

### 5. Effect of Motivation on Service Quality

According to Mc. Clelland's theory, individuals have a potential energy reserves. How energy is released and used depends on the strength of someone, situation and available opportunities. Energy will be used by individual with the encouragement, such as: 1) the power of motive and the basic power that involved, 2) the expectation of success, and 3) the incentive value in the goals. Things that motivate someone are:

1. The Need for achievement: the needs for achievement innovative and creative indicators, feedback on achievement, choosing risks in work and having responsibility for achievement.
2. The Need for Affiliation: the needs for affiliation include cooperative indicators, maintaining social relationships, helping co-workers, and avoiding conflict.
3. The Need for Power: the needs for power include an indicator of the ability to speak in public, active in determining the direction of the organization, to feel pleased to be appointed as the leader of the organization, to feel happy to teach the knowledge to others.

### 6. Conclusion

1. Motivation has a positive and significant impact on service quality, the better the motivation the better the quality of service. so that the motivation has a real effect to improve the quality of service.
2. The discipline of employees has a positive and significant impact on the quality of service for example the better the discipline of employees the better the quality of service so the discipline of employees has a real effect to improve the quality of service.

### References

- [1]. Arief, Muhtosim, 2006, Pemasaran Jasa dan Kualitas Pelayanan, Bayumedia Publishing, Malang.
- [2]. Gie, The Liang, 1982, Administrasi Perkantoran Modern, Nur Cahaya, Yogyakarta.
- [3]. Handoko, Hani, 1990, Manajemen Sumber Daya Manusia, Ghalia Indonesia, Jakarta.
- [4]. Hasibuan, Malayu. S.P, 2005, Organisasi dan Motivasi, PT. Bumi Aksara, Jakarta.
- [5]. Heidjrachman – Husnan, 2002, Manajemen Personalialia, BPFE, Yogyakarta.
- [6]. Kotler, Philip, 2002, Manajemen Pemasaran di Indonesia : Analisis, Perencanaan, Implementasi dan Pengendalian, Salemba Empat, Jakarta.
- [7]. Moenir, A.S. 2006, Manajemen Pelayanan Umum di Indonesia, PT.Bumi Aksara, Jakarta.
- [8]. Sedarmayanti, 2009, Reformasi Administrasi Publik, Reformasi Birokrasi, dan Kepemimpinan Masa Depan (Mewujudkan Pelayanan Prima dan Pemerintahan yang Baik), Refika Aditama, Bandung.
- [8]. Siagian, Sondang P, 2004, Teori Motivasi dan Aplikasinya, PT.Rineka Cipta, Jakarta.
- [9]. Sinambela, Lijan Poltak, 2006, Reformasi Pelayanan Publik, Teori, Kebijakan dan Implementasi, Bumi Aksara, Jakarta.
- [10]. Soejono, 1997, Sistem dan Prosedur Kerja, Bumi Aksara, Jakarta.
- [11]. Susilo Martoyo, 1992, Manajemen Sumber Daya Manusia, BPFE, Jakarta.
- [12]. Terry, George R, 1993, Pengembangan Sumber Daya Manusia, Liberty, Yogyakarta.
- [13]. Tjiptono, Fandy, 2001, Strategi Pemasaran. Edisi Pertama. Andi Ofset. Yogyakarta.
- [14]. Winardi, 2000, Kepemimpinan Dalam Manajemen. Jakarta : Rineka Cipta.
- [15]. Wursanto, 1987, Manajemen Kepegawaian, Yogyakarta : Kanisius.
- [16]. Widodo, Joko, 2001. Good Governance, Telaah dari Dimensi Akuntabilitas dan Kontrol Birokrasi Pada Era Desentralisasi dan Otonomi Daerah, Insan Cendekia, Surabaya.

# The Disciplinary Arrangements to Autism Student in SD Inclusive Alfirdaus Surakarta

Mulyadi SK<sup>1</sup>, Minsih<sup>1</sup>, Ratna NP<sup>1</sup>, Imam Mujahid<sup>2</sup>

<sup>1</sup>Primary Teacher Education, Faculty of Teacher Training and Education,  
Muhammadiyah University of Surakarta, Central Java, Indonesia

<sup>2</sup>IAIN Surakarta, Indonesia

**Abstract.** This research is to describe the learning activities in getting the students in the low grade class in the autism student at Al-Firdaus Surakarta Elementary School. The type of this research is qualitative research with case study design. Techniques of collecting data using interviews, observation, and documentation. The validity of the data using technique triangulation and source triangulation. In this research, data analysis techniques performed according to Miles and Huberman is through the data reduction stage, display data, and withdrawal of conclusions or verification. The results of this study are the behavioral arrangement of teachers by making class rules in general and additional rules for autistic students as a precautionary measure of behavior. Teachers also provide reprimands, advice, guidance and therapeutic rolls with sponges for autistic students who perform unfavorable behavior. The disciplinary arrangements by the teacher to familiarize order are to impose penalties and rewards. Arrangement of interest and passion done by teachers by using various learning media, provide motivation and apply the principles of managing the class so that autistic students can perform their duties in an orderly manner. While the effort to overcome the autistic students disturbed by the noise when active learning is to calm the classroom atmosphere, if it is less effective <sup>102</sup>implementation of the autism students will be pulled into the therapy room PUSPA

**Key Word:** *the autism students, disciplinary arrangements*

## 1. Introduction

Inclusive education is one of the special services for children with special needs. According to Sunaryo and Surtikanti (2011: 3) Inclusive education is a learning process for addressing educational issues for children with special needs in regular schools, using existing resources to create opportunities for their preparation of life in society. One of the resources is teachers. A teacher is required to be able to master the various skills, one of which is a skill in class management or class management. Classroom management is an activity that aims to organize learners so that their behavior leads to good things and eliminates misbehavior, develops positive interpersonal and socio-emotional climate and develops and maintains effective and productive class organizations (Mulyadi, 2009: 4).

A teacher at an inclusion school is very important to have the skills to manage the class because the characteristics and conditions of each student are certainly different. According to Sunaryo and Surtikani (2011: 1) children with special needs are aimed at a group of children who have such abnormalities or differences from the normal average child in terms of physical, mental, emotional, social or a combination of these characteristics and cause them to experience obstacles to achieve optimal development so that they need special education services to achieve optimal development.

Therefore, teachers are required to be skilled in implementing classroom management in order to optimize all students' potential and eliminate barriers in the interaction of learning that may occur during the learning process especially in inclusive schools. According to Karwati and Donni (2014: 23) classroom management activities include two activities, namely the arrangement of learners and the arrangement of facilities. Students' arrangements include behavior, discipline, interests, learning

---

<sup>102</sup> Corresponding Author: mulyadisk@ums.ac.id. minsih@ums.ac.id

passion, and group dynamics. Arrangement of participants ddik include ventilation, lighting, comfort, sit position, and placement of learners.

The problems that arise in one of inclusion schools is due to teachers who have not fully understood and know how to handle children with special needs (ABK), especially regarding the behavior of ABK (Tarnoto, 2016). In an interview with the principal of SD Al Firdaus, the problems that are held are also found in the classroom teachers who have not fully mastered the crew during the learning process, especially the new teachers.

## **2. Method**

This research is included in the type of qualitative research with case study research design of 9 students with autism. According to Mulyadi (2016: 90) "case study is a form of in-depth research on an aspect of the social environment, including humans in it." The study was conducted at Al Surakarta School of Eden. This school is located at Jalan Yosodipuro No.56 Surakarta. The study was conducted in March to June 2017.

Data collection techniques with in-depth interviews, observation and documentation. The validity of the data using technique triangulation and source triangulation. In this research, data analysis technique is done according to Miles and Huberman in his book Sugiyono (2015) that is through data reduction step, display data, and withdrawal of conclusion or verification.

## **3. Results and discussion**

### **3.1 Results**

One of the activities undertaken by teachers in managing inclusion classes is to manage the behavior of autistic students. Based on the interviews, the teacher's behavioral arrangements to familiarize the students with autism is by making rules that apply to all students in the class and additional rules for each autistic student, then the class teacher and the companion teacher provide an explanation of the rules so that students autism can understand and run the rules that have been made. Based on the observation, if the behavior of students with autism is not good or not orderly then the classroom teachers and companion teachers provide advice and admonishment that the behavior is less good. Based on the results of interviews with companion teachers, autistic students who always repeat the actions that are not good and ignore the instructions of teachers, it will be done therapy in PUSPA (Child Care Center) by rolling the autistic student body using a sponge while giving advice so as not to repeat his actions . However, the therapy is done as a last resort if the ways that were done previously felt less effective.

Based on interview results, teachers use punishment and reward techniques to manage the discipline of low-grade autistic students in SD Al Firdaus. The penalties vary according to the rules or in accordance with the agreement and are educational. The prize can be a compliment or something the autistic student likes, such as drawing. Cakedik books or learner notes are also used as a tool to organize student discipline. Disciplined or undisciplined autistic students will be written in the cakedik and get the star as a form of reward or punishment for the autistic student so that later can be known by the parents of autistic students concerned.

Based on the observations made, that the school has a discipline to regulate the discipline of all students. Students who violate the rules will get sanction. But there is a class that has not attached the rules on the classroom wall as a reminder of existing rules. Teachers have familiarized learners including autism for discipline. Students must be present on time. Students who are late will have consequences. Before the lesson begins, the class teacher asks all the students to pray together. After the prayer proceed with short letter memorization done at the beginning and at the end of learning. It appears that autistic students follow it in an orderly manner. The class teacher also asks students to organize their bags to look neat. Class teachers and companion teachers always come on time and wear uniforms like the one in the school rules. It is expected to be a good example for the students.

Arrangement of interest and passion of learning is one of the activities of managing the class. High interest and passion of learning will make autistic students more orderly in following the learning. Based on the results of interviews, teachers use a variety of learning media to increase interest and passion of autistic student learning. Teachers also promise gifts such as drawing for autistic students who are lazy to do the task of being excited again.

Based on observation, in class 1B, 2B and 3C already have LCD screen. LCD screens and loudspeakers have been used by teachers to explain learning materials by adding interesting pictures and songs to their learning. Class 2B autistic students look enthusiastic to see the display on the LCD screen. Autistic students also sing along despite not knowing the lyrics. When explaining, the teacher does a hoax resembling what is in the lyrical content to make students laugh. Teacher is seen teaching in a humorous, friendly and always smiling style so that the atmosphere becomes fun. Occasionally teachers give oral questions to autistic students as a form of participation in learning. Teachers also always give credit to the answers of autistic students. Efforts are made is to conduct a discussion between class teachers, teachers and parents so that students are expected to be achieved both at school and home. Another obstacle is the noise caused by other students. Autistic students who feel disciplined in following the lesson then disturbed by the noise of other students will be less comfortable so that autistic students are screaming and difficult to control. Efforts to overcome these obstacles is to condition other students to not crowded then bring autistic students to the pull out in the PUSPA Therapy Room so that autistic students will feel comfortable in the room.

### **3. 2. Discussion**

The arrangement of behavior done by low class teachers to familiarize the students with autism in SD Al Firdaus is good enough. Based on interviews and documentation, there are class rules that apply to all students in the class. There are also additional rules for each autistic student as stated by Ibu Aisyah that there are additional rules from the accompanying teachers. Additional rules for each autistic student vary according to the behavioral character of each autistic student in the class. The rules will then be explained in slowly so that later can be understood and understood autistic students. It is as stated by Mrs. Mami Ambarsari that with assisted GPK, gradually understand autistic student to more obey the rules. This is in accordance with the opinion Simonsen, et al (2008) that the making of behavioral contracts that contain the expected behavior can improve student self-control.

While other actions performed by teachers are reprimands, advice, guidance and roll therapy for autistic students who have done poor behavior and disrupt the process of teaching and learning activities. The results are in accordance with the opinion of Suhardan (2010: 119) that the handling of behavior carried out with precautions and corrective actions. Preventive action is an action performed before the appearance of deviant behavior and can disrupt the optimal conditions of learning while the corrective action is an action against behavior that deviates and damages the optimal conditions of the ongoing teaching and learning process. The management of behavior done by the low grade teacher of Al Aldada is also in accordance with Nugraheni (2014) study which concludes that one of the strategies used by teachers to handle the behavior of students with special needs and other students is by using several approaches, such as giving rule from the beginning learning, giving advice to students, giving warnings, approaching students who are still talking to each other, and giving praise directly to students.

Discipline needs to be taught to students because discipline is an important thing in getting students to be disciplined in the classroom. This is in line with what The Liang Gie in Wiyani (2016: 159) means that discipline is orderly. In the autistic student discipline activity, the low grade teacher of SD Al Firdaus applies punishment and reward techniques. This means that teachers have used a power approach in regulating the discipline of autistic students. According to Wiyani (2016: 106) the power approach is the teacher's perspective that the conducive class is formed through enforcement of the rules in the classroom so that the learners make discipline. In SD Al Firdaus there are school rules and classroom rules that have been created and mutually agreed upon. But not all classes have attached the classroom order as a reminder and proof that there are rules to be obeyed together.

The punishment techniques and rewards applied by the teacher are expected to form students into a more disciplined person. This is in accordance with the journals of Aliyyah and Abdurakhman (2016) which states that through correct reward and punishment students are enabled to have high discipline, confidence, responsibility, and can understand the meaning of life that leads to the formation of good character. Based on observations, teachers as role models and role models have also provided good disciplinary examples for their students. Discipline has also been accustomed by the teacher before the start of learning activities.

The results of the research on disciplinary arrangements conducted by the teachers above in accordance with the opinion Wiyani (2016: 162) that there are three kinds of techniques in fostering class discipline are: (1) External control techniques is a technique in which the discipline of learners

should be controlled from outside students. Learners should continue to be monitored and controlled so as not to get carried away to destructive things. Learners should continue to be disciplined by punishment and reward. (2) Internal control technique is to try the students in order to discipline themselves in the classroom. The key to success of this technique is exemplary teacher in the discipline. (3) Cooperative control technique that is between teachers and learners work together in upholding discipline in the classroom. Teachers and learners make contractual agreements containing disciplinary rules that must be obeyed together. The use of punishment and reward techniques to teach discipline to students is also in accordance with Adeyemo's (2012) opinion that punishment or rewards should be given to motivate, and to address disciplinary situations in the classroom and school.

Interest and passion of learning is very important because it will affect the attitude of students during learning. Based on the interviews, the way the teacher in improving the interest and passion of student learning is by using varied learning media and providing continuous motivation to autistic students. The use of learning media to increase student interest in accordance with Hamalik's opinion in Arsyad (2013: 19) which says that the use of learning media in the learning process can generate new desires and interests. The use of media by teachers makes autistic students feel attracted to the images and songs they produce. This interest is shown by the autistic student's attention to the screen image and the participation in singing together. Autistic student's interest in the lesson will reduce the deviant behavior that has become the character of his disability so that he can pay attention to the teacher's explanation in an orderly manner. Based on the results of interviews and observations, teachers also provide motivation to increase the passion of learning according to Karwati and Donni (2014: 165) who said that learning motivation plays an important role in giving passion, pleasure and pleasure in learning.

Based on observations, teachers have also created a fun classroom atmosphere to increase interest and passion for learning. This is shown by teachers who are humorous, friendly and always smiling to the students. The effort of the teacher is in accordance with the principles of class management that is warm and enthusiastic. According to Wiyani (2016: 73) the warm and enthusiastic attitude of the teacher is an important factor to foster the spirit of learning and motivation to learn students in the classroom. Can be concluded that the attitude of the teacher who is humorous, friendly, and always smiling is very important to foster the spirit of learning of students, especially students with autism.

Teachers also do the principle of variation that is varying the movement of limbs and intonation of sound when explaining the learning materials. Variation of teaching style will increase the passion of learning because it can reduce boredom. It is in the opinion Wiyani (2013: 81) that the variation of teacher teaching style is needed because it can avoid boredom and boredom. Variations in movement of limbs performed by the teacher are also very useful especially for autistic students because it can help clarify the purpose that is being discussed by the teacher.

#### **4. Conclusions**

Based on the results of research and discussion, this study can be summarized as follows: Activities to familiarize orderly in low class in autistic students in the inclusive school of SD Al Firdaus Surakarta teachers make class rules and additional rules for autistic students as a precautionary measure of behavior disorderly. In addition, teachers also provide reprimands, advice, direction and therapy to roll with a sponge for autistic students who do not perform well. The disciplinary arrangements by the teacher to familiarize order are to impose penalties and rewards. Teachers also always remind all students to maintain discipline. Teacher also gives exemplary attitude discipline for all student. Teacher SD Al Firdaus uses a variety of learning media, providing direct motivation, praise, and drawing. Teachers also apply some principles of classroom management to increase students' interest and passion for autism so that autistic students can carry out their duties in an orderly manner.

#### **References**

- [1]. Adeyemo, A. 2012. The Relationship Between Effective Classroom Management And Students' Academic Achievement. *European Journal of Educational Studies*, 4, 3. Diakses tanggal 29 Desember 2017, dari <http://www.academia.edu>

- [2]. Aliyyah dan Abdurakhman. 2016. Pengelolaan Kelas Rendah di SD Amaliah Ciawi Bogor. *Jurnal Sosial Humaniora ISSN 2087-4928*, 7, 3. Diakses tanggal 24 Oktober 2017, dari <https://osf.io/preprints/inarxiv/z26fq>
- [3]. Arsyad, Azhar. 2013. *Media Pembelajaran*. Jakarta: PT Raja Grafindo Persada
- [4]. Karwati, Euis dan Donni Juni Priansa. *Manajemen Kelas: Guru Profesional yang Insiparif, Kreatif, Menyenangkan, dan Berprestasi*. Bandung: Alfabeta.
- [5]. Leach, D dan Duffy, ML. 2009. Supporting Student With Autism Spectrum Disorders in Inclusive Settings. *Intervention in school and clinic*, 45, 1. Diakses tanggal 29 Desember 2017, dari [journals.sagepub.com](http://journals.sagepub.com)
- [6]. Mulyadi. 2009. *Classroom Management*. Malang: UIN Malang Press
- [7]. Nugraheni, TN, Sri, H dan Jati, A. 2014. Strategi Guru Menangani Perilaku Bermasalah Siswa Berkebutuhan Khusus di Kelas Reguler (Studi Kasus Pada Sekolah Nasional Berbahasa Inggris di Semarang). *Jurnal Empati*, 3, 1. Diakses tanggal 17 Oktober 2017, dari <https://ejournal3.undip.ac.id>
- [8]. Sugiyono. 2015. *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Afabeta
- [9]. Suhardan, Dadang, dkk. 2010. *Manajemen Pendidikan*. Bandung: Alfabeta
- [10]. Simonsen, B, dkk. 2008. Evidence-based Practices in Classroom Management: Considerations for Research to Practice. *Education and Treatment of Children*, 31, 3. Diakses tanggal 30 Desember 2017, dari <https://corescholar.libraries.wright.edu> 31, 3. Diakses tanggal 30 Desember 2017, dari <https://corescholar.libraries.wright.edu>
- [11]. Sunaryo, Ilham dan Surtikanti. 2011. *Pendidikan anak Berkebutuhan Khusus (Inklusif)*. Surakarta: UMS Press
- [12]. Wiryadi, Sri Samiwasi. 2014. Pola Asuh Orangtua Dalam Upaya Pembentukan Kemandirian Anak Down Syndrome X Kelas D1/C1 Di Slb Negeri 2 Padang (Studi Kasus Di SLB Negeri 2 Padang). *Jurnal Ilmiah Pendidikan Khusus*, 3, 3. Diakses tanggal 24 Oktober 2017, dari <http://ejournal.unp.ac.id>
- [13]. Wiyani, Novan Ardy. 2016. *Manajemen Kelas: Teori dan Aplikasi untuk Menciptakan Kelas yang Kondusif*. Jogjakarta: Ar-Ruzz Media

# The Prospect of Nutmeg (*Myristica Fragrans Houut*) Organic Development(Case Study in Ngidiho Village Distric of West Galela, North Halmahera Regency)

Munawir Muhammad<sup>1</sup>, Arianto M Neka<sup>2</sup>

<sup>1</sup>Lecturer of Agribusiness Programe Study Agriculture Faculty UMMU Ternate  
Email :munawirmuhammad2012@yahoo.co.id

<sup>2</sup>Graduated of Agribusiness Programe Study Agriculture Faculty UMMU Ternate  
Email : ariyantonaqib131@gmail.com

**Abstract.** This research aims to determine the prospects of organic nutmeg development and analyze internal and external factors of organic nutmeg development. Further analyzed by the formula of SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) to analyze the development prospect of organic nutmeg. From the research result of development prospect of organic nutmeg which developed research area in Ngidiho Village of West Galela District of North Halmahera Regency is seen from biophysical aspect, seems that climate condition is very supportive, from social aspect also seems the local society are very supported the development prospect of organic nutmeg and also economic aspect one of the determinants in improving the economy of local society which also increasing the production because those are supported by aspects of the availability of agricultural facilities and experience in organic nutmeg. The result of identification by SWOT analysis of internal factors there are five strengths and five weaknesses, while on the external environmental factors there are five opportunities and five threats. The integration of IFAS 2.74 and EFAS value is 2.80. In the SWOT diagram shows that the position of organic nutmeg development located in quadrant I or strategy that is made by using all the strength to make use the opportunity of aggressive strategy that is to encourage farmers to maximize the land as the development of organic nutmeg by improving the product quality, intensification of agriculture done by doing development like giving organic fertilizer to nutmeg plants, to increase production and meet market demand.

**Keywords:** *Organic Development of Nutmeg (Myristica Fragrans Houut)*

## 1. Introduction

### 1.1 Studi Area

Nutmeg (*Myristica Fragrans Houut*) is a native Indonesian plant that has been known as a spice plant, so Indonesia is the world's largest nutmeg producer (70-75%). Indonesian nutmeg commodities are mostly produced by smallholders plantations which is about 98.48%. (Central Commodity Industry, Deptan, 2009).

North Maluku Province is one of the provinces that have the largest nutmeg plantation resources, but the nutmeg raw material available until now has not been maximally utilized, whereas if it is managed with the right tools and technology, nutmeg can produce high value economic product.

Seeing the opportunity of organic nutmeg forward is more tantalizing. BPTP of North Maluku has a big role to support organic nutmeg development throughout North Maluku. To achieve that, the Experimental Garden (KP) owned by BPTP of North Maluku which located in Bacan Island, South Halmahera can be used as a center for research and development of organic nutmeg. This program will not only optimize the potential of Experimental Garden, but will also become the reference center and 'show window' of Maluku North Maluku.

Besides that, post-harvest technology innovation must become the main tool of BPTP in increasing the income of North Maluku nutmeg farmers, because flesh fruit of the nutmeg is thrown away as waste after the seeds and fulli has taken. Whereas nutmeg flesh fruit is the largest part of fresh nutmeg (83.3%) compared to fulli (3.22%), seed shell (3.94%), and seeds (9.54%). BPTP has had

various innovations for processing nutmeg, such as nutmeg syrup, jam, and nutmeg balm. Now the processing of nutmeg is not evenly distributed throughout North Maluku, in the future this nutmeg processed innovation becomes the priority innovation in all central nutmeg in North Maluku.

North Halmahera Regency is located on the northern edge of Halmahera and directly adjacent to the Pacific Ocean, this geographical position is certainly very strategic to be the entrance of international trade. No wonder, when World War II this area became a struggle between Japan and the United States Allied. There are three dominant plantation crops in North Halmahera Regency: coconut, nutmeg and cloves. Currently North Halmahera Regency which is about 170 km from the Capital City Province, it has grown organic nutmeg. Nutmeg is traditionally maintained with cultivation techniques that use local wisdom, without chemicals. The biggest advantage that farmers perceive in this way is a much higher price compared to non-organic nutmeg. In this connection, Ngidiho Village, West Galela District, North Halmahera District, is one of the villages located in Galela Barat District, most of the community owns organic plant nut plantations. So based on the description above the author examines the *"The Prospect of Nutmeg (Myristica Fragrans Howut) Organic in Ngidiho Village Galela Barat District of North Halmahera"*

### 1.2. Formulation of the problem

Based on the above background then the problems in this study are:

1. How is the Prospect of Organic nutmeg development for the community in Ngidiho Village, West Galela District, North Halmahera District?
2. How are the internal and external factors of organic nutmeg development in Ngidiho Village, West Galela District, North Halmahera District?

### 1.3. Research purposes

The purpose of this study are:

1. To find out the prospect of organic nutmeg development in Ngidiho Village, Galela Barat Sub-district, North Halmahera District.
2. To analyze internal and external factors of organic nutmeg development in Ngidiho Village, West Galela District, North Halmahera District.

## 2. Research Methodology

### 2.1. Object of research

This research was held in Ngidiho Village, West Galela District, North Halmahera Regency. The determination of the location of this research is purposive, because in Ngidiho Village, Galela Barat Sub-district, North Halmahera Regency, is one of the central development of organic nutmeg. The research was doing in December 2017.

### 2.2. Sampling Method

The population in this research is organic nutmeg farmers located in Ngidiho Village, West Galela District, North Halmahera Regency, which amounts to 438 farmers of organic nutmeg. Arikunto (2003), explains that the Sample is part of the population. The study sample is part of the population taken as a data source and can represent the entire population.

Noting the statement above, because the population is more than 100 people, then the sampling in this study using a random sample (Random Sampling). Sampling technique using Slovin formula is as follows

$$n = \frac{N}{(N \cdot e^2) + 1}$$

$$n = \frac{438}{(438 \times 0,01) + 1}$$

$$n = 81 \text{ respondents}$$

Where :

n = Number of samples

N = Population

e = The critical value (limit of accuracy) used is 10%.

The population in this study was 438 people. Based on the formula, then the number of respondents in this study were as many as 81 people.

### **2.3. Data Retrieval Method**

Source of data used in this research are:

- a. Primary data  
Primary data is obtained by interview method using predefined questioner.
- b. Secondary data  
Secondary data is data and information collected from the community of organic nutmeg development and related institutions.

### **2.4. Data analysis method**

#### **2.4.1. Descriptive Analysis of Organic Nutrition Development Prospects**

Descriptive method is a method in researching a group of people, an object, a condition or a class of events in the present. The purpose of this analysis is to make description, or event factual and actual systematically about the facts, characters and between the phenomenon relationship who investigated. Literally, descriptive method is a research method to create a description of one occurrence, so this method is to hold accumulation of basic data only, and to identify the prospect of organic nutmeg development in Ngidiho Village, North Galela Sub-district of North Halmahera Regency.

#### **2.4.2. Analysis of Strength Weakness Opportunity Threat (SWOT)**

To analyze internal and external factors of organic nutmeg development in Ngidiho Village, Galela Barat Sub-district, Halmahera Utara District, conducted by using SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). This analysis is carried out by applying the criteria of conformity with quantitative data and description.

The weighting and scoring in the SWOT analysis is based on the interview result which is then justified in the form of weight and score. According to Rangkuti (2004), in Hermansah (2011), there are several steps performed in SWOT analysis, which are as follows:

##### **1. Data Collection Stage**

This stage is an activity of classification and pre-analysis. At this stage the data are divided into two, namely external data and internal data. External data comes from the external environment (opportunities and threats), while internal data comes from within the organizers of organic nutmeg development in Ngidiho Village, Galela Barat District, North Halmahera District (strengths and weaknesses). This stage uses two matrix models of internal strategic factors. The internal strategy factor matrix is prepared by the following steps:

- a. In the first column the forces and weaknesses are drawn up.
- b. In column two weighed against each factor, ranging from 1.0 (most important) to 0.0 (unimportant), the weighted sums for all strength and weakness factors equal to 1.0.
- c. The weighted value is derived from the average of each question divided by the average total of questions given by the respondent.
- d. In column three, the rating scale is from 4 (Outstanding) to 1 (Poor), based on the influence of these factors on the condition of organic nutmeg development in Ngidiho Village, West Galela District, North Halmahera Regency. Rating rating for strength is positive (value 4 = Very large, 3 = Large, 2 = Medium, and 1 = Small), while rating rating for weakness is negative (4 = Small, 3 = Medium, 2 = Large, and 1 = Very Large).
- e. Each rating scale is the average of the ratings given by the respondent;
- f. In column four is filled with the value of the multiplication of the weight and rating of a same factor. The value of the times is a weighted score of that factor.
- g. In column five is given a comment or note why certain factors are selected and how the weighting score is calculated.
- h. Sums the weighted score in column four.

Below is a bold 1 internal strategy strategy analysis (Internal Strategic Factors Analysis Summary):

**Table 1.** Internal Factor Strategy Analysis (IFAS)

<b>Internal Strategy Factors</b>	<b>Weighting</b>	<b>Rating</b>	<b>Score</b>	<b>Comment</b>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Strenght :				
-	A	B	AxB	
-				
Weakness :				
-	C	D	CxD	
-				
<b>Total</b>	<b>1,00</b>		$(\sum(axb)+\sum(cxd))$	

Matrix of External strategy factor is prepared using the following steps:

- In the first column there are opportunities and threats.
- Furthermore, column 2 is weighted against each opportunity and threat factor, ranging from 1.0 (very important), to 0,0 (unimportant). The total weight for all probability and threat factors equals 1.0.
- In column three is given rating scale from 4 to 1, based on the influence of these factors on the condition of organic nutmeg development in Ngidiho Village, West Galela District, North Halmahera District. The rating scores for opportunities are positive (value 4 = very large, 3 = large, 2 = medium, and 1 = small), whereas rating rating for threats is negative (value 4 = Small, 3 = medium, 2 = large, and 1 = very large).
- In column four is filled with the value of the multiplication of the weight and rating of a same factor. The value of the times is a weighted score of that factor.
- In column five is given a comment or note why certain factors are selected and how the weighting score is calculated.
- Sums the weighted score in column four. The value shows how the system reacts to external factors of its strategy.

The following table 2 analysis of external factors strategy (External Strategic Factors Analysis Summary):

**Table 2.** External Factor Analysis Analysis (EFAS)

<b>External Strategy Factors</b>	<b>Weighting</b>	<b>Rating</b>	<b>Skor</b>	<b>Comment</b>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Opportunity :				
-	A	B	AxB	
-				
Threats :				
-	C	D	CxD	
-				
<b>Total</b>	<b>1,00</b>		$(\sum(axb)-\sum(cxd))$	

Source: Rangkuti., 2004

## 2. Data Analysis Stage

At this stage, after all the information is collected, then utilize all the information in the quantitative models of strategy formulation. Data analysis used is SWOT analysis model, where there are four strategies that can be produced, that is strategy SO, WO, ST, and WT.

## 3. Decision Making Stage

At this stage, review of four strategies that have been formulated in the analysis phase. Thereafter a decision is made in determining the most profitable, effective and efficient strategy for the organization based on the SWOT Matrix and ultimately a strategic plan for the next activity will be developed. The decision-making phase with SWOT Matrix can be seen in the following 3:

**Table 3.** Result Matrix Model of SWOT

<b>External Strategic Factors Analysis Summary</b>	<b>Internal Strategic Factors Analysis Summary</b>	
<i>Opportunities</i>	<i>Stright</i>	<i>Weaknesses</i>
(O)	SO1	WO1
	SO2	WO2
	SO3	WO3
	...	...
Threats (T)	Son	Won
	ST1	WT1
	ST2	WT2
	ST3	WT3
	...	...
	STn	WTn

Source: Rangkuti., 2004

### 3. Results and Discussion

#### 3.1. Prospect of Organic Nutmeg Development

Organic nutmeg farmers in Ngidiho Village, Galela Barat District, North Halmahera Regency, have long been developing organic nutmeg as a prime crop, with the reason the prospect is quite good seen from the price and productivity produced in this village. Some aspects that support the development of organic nutmegs among the seeds:

##### 1. Biophysical aspects

Organic pepper plants require a hot climate with high rainfall and uneven / unchanged throughout the year with an ambient air temperature of 20-30oC. Nutmeg also includes a type of plant that is resistant to dry season for several months and requires loose soil and fertile, very suitable in volcanic soils and has good drainage. Nutmeg grows well on sand-textured soils to clays, high organic matter content, pH between 5.5-6.5, and has a height of 500-700 m above sea level (Hatta, 1993).

The nutmeg plants are very sensitive to strong winds, so these plants are not suitable in the open area without a shelter or windbreak. The wind is blowing too fast, not only the pollination of the bunga is disturbed, even the fruit, the flowers and the shoots of the plants will fall down. Therefore the areas that blow hard, in need of protective plants planted at the edge. However, too dense protective plants can inhibit nutmeg growth, and become rivals in obtaining nutrients (Hadad et al, 2006).

##### 2. Social Aspects

In addition to the appropriate biophysical conditions, the development of organic nutmeg species in the village of NgidihoGalela District of North Halmahera Regency is also favored by the community. Nutmeg is a type of plant that has long been known in the Village Ngidiho, District Galela West. So that the social development of nutmeg received by the local community. Farmers also have a good level of knowledge in nutmeg cultivation ranging from seeding to harvesting.

##### 3. Economic Aspects

Economic development of agriculture is basically directed to the utilization of natural resources (land) and human labor so that produces production that can improve people's welfare. For this reason, efforts to develop coastal areas need to be directed at increasing land productivity and increasing. Labor productivity. Increased agricultural productivity reflects a large marketable surplus and revenue retribution that benefits the agricultural sector (Todaro, 2005).

Farmers in Ngidiho Village, Galela Sub-district, North Halmahera Regency, in the development of organic nutmegs greatly benefit from the demand of domestic and overseas consumers is very high, so that economically can increase people's income.

#### 3.2. Analysis of Organic Nutrition Development Strategy

##### 1. Analysis of IFAS matrix (Internal Factor Analysis System)

Based on internal factors describe the strengths and weaknesses to determine the prospect of organic nutmeg development in Ngidiho Village, Galamas Sub-District, West Halmahera District. which is summarized into the IFAS matrix (Internal Factor Analysis System), for more details can be seen in Table 4 below:

**Table 4.** Internal Matrix Strategy Factor Analysis System (IFAS)

No	SWOT ANALYSIS FACTOR	Score=WeightingxRating		
		Weighting	Rating	Score
<b>STRENGTH (S)</b>				
1	Organic nutmeg quality	0.11	3.11	0.36
2	Farmers experience in developing organic nutmeg	0.12	3.04	0.37
3	The availability of sufficient labor	0.09	2.52	0.22
4	Smooth transportation and availability of support facilities	0.09	2.30	0.20
5	Availability of vacant land	0.10	2.81	0.28
<b>Amount</b>		<b>0.51</b>		<b>1.43</b>
<b>WEAKNESS (W)</b>				
1	Limited capital of nutmeg farmers	0.09	2.62	0.24
2	Processing technology is still simple	0.10	2.77	0.27
3	Information system is inadequate	0.09	2.53	0.24
4	Market information	0.09	2.43	0.23
5	Simple farm equipment to develop organic nutmeg	0.11	2.93	0.33
<b>Amount</b>		<b>0.49</b>		<b>1.31</b>
<b>Total</b>		<b>1.00</b>		<b>2,74</b>

Source: Primary data after being processed, (2017).

Based on the results of the interest made in Table 4 above, the total value of IFAS was obtained to find out the prospect of organic nutmeg development. of 1.31 which consists of a strength score of 1.43 or with the highest strength score of 0.37 is organic nutmeg quality and weakness score 1.09 or with the lowest weakness factor score of 0.17.

Therefore considering the strengths and weaknesses that exist, then the prospects of organic nutmeg development, still occupy a strategic position strong enough to continue to be developed because the strength factor is more dominant than the weakness factor.

## 2. EFAS Matrix Analysis (External Factor Analysis System)

After identifying external factors of opportunities and threats related to the development prospects (*Myristica Fragrans* Houut) of organic nutmegs summarized in the EFAS matrix (External System Analysis Factor), more details can be seen in Table 5 below:

**Table 5.** External Matrix of Analysis System Factor Factor (EFAS)

No	SWOT ANALYSIS FACTOR	Score=WeightingxRating		
		Weighting	Rating	Score
<b>Opportunity (O)</b>				
1	Prospect of domestic and overseas market	0.10	3.64	0.38
2	Government policies that support the development of Agroindustry	0.09	2.49	0.23
3	The development of post harvest nutmeg technology	0.11	3.36	0.37
4	Good relationship with nutmeg agent	0.09	2.83	0.26
5	There is attention from research and development for the development of organic nutmeg	0.09	3.25	0.31
<b>Amount</b>		<b>0.49</b>		<b>1.54</b>
<b>Threats (T)</b>				
1	The existence of competition for organic nutmeg development	0.10	2.78	0.28
2	Substitution product competition	0.11	2.31	0.26

3	Lack of local government attention to the development of organic nutmeg	0.10	2.15	0.22
4	Pest and disease attacks	0.11	2.70	0.29
5	Inconsistent local / central government policy between one Agency / Agency with others	0.09	2.48	0.22
<b>Amount</b>		<b>0.51</b>		<b>1.26</b>
<b>Total</b>		<b>1.00</b>		<b>2.80</b>

Source: Data After Processing (2017).

Based on the results of the interest made in the table above, obtained the total value of EFAS for organic nutmeg development results of (2.80) which consists of an opportunity score of (1.54) or with the highest chance score (0.38), ie domestic and foreign market prospects . For threat scores (1.26) or with the lowest threat factor score (0.22). Taking into account the existing opportunities and threats, the organic nutmeg development in Ngidiho Village still occupies a strategic position to continue to be developed as the chance score increases more than the threat score.

SWOT Matrix is a tool used to construct factors as a strategic alternative that can clearly illustrate how the strengths and weaknesses (internal) faced so that they can be adapted to the opportunities and threats (external) they have in the prospect of developing nutmeg (*MyristicaFragransHouut*) organic In Ngidiho village, Galela Barat District, North Halmahera District. Alternative development of organic nutmeg SWOT matrix, can be seen in Table 6 below:

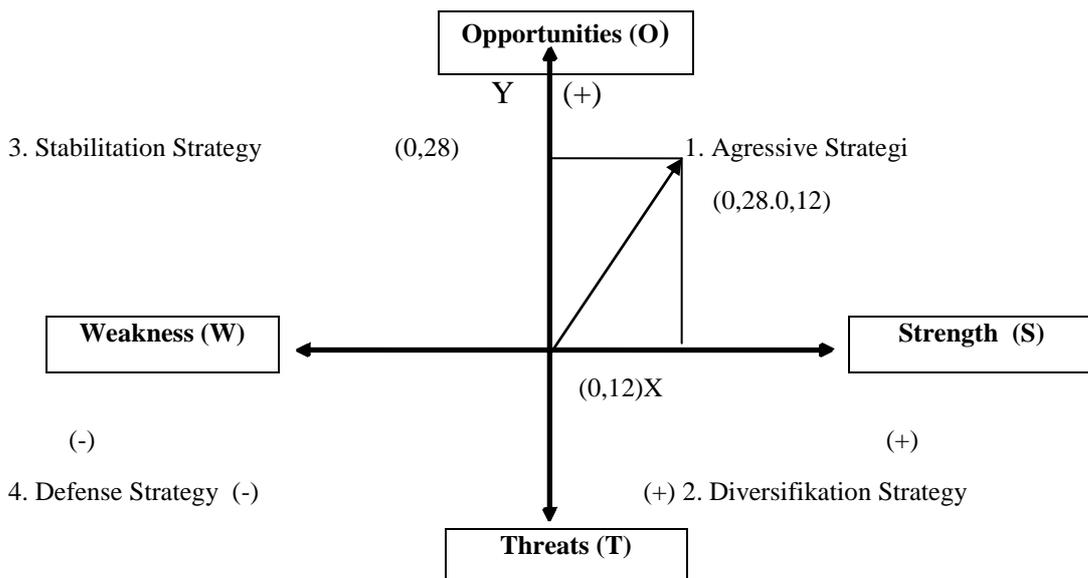
<b>IFAS</b>  <b>EFAS</b>	<b>Strength</b>	<b>Weaknesses</b>
	<ol style="list-style-type: none"> <li>1. Organic nutmeg quality</li> <li>2. Farmer's experience in developing nutmeg orgnik</li> <li>3. Availability of sufficient labor</li> <li>4. Smooth transportation and availability of supporting facilities</li> <li>5. Availability of vacant land</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited capital of nutmeg farmers</li> <li>2. Processing technology is still simple</li> <li>3. Information systems that have not been adequate</li> <li>4. Lack of market information</li> <li>5. Farmers' equipment is still simple to develop organic nutmeg</li> </ol>
<b>Opportunities</b>	<b>Strategy (S+O)</b>	<b>Strategy (W+O)</b>
<ol style="list-style-type: none"> <li>1. Prospect of domestic and overseas market</li> <li>2. Government policies that support Agro-industry development</li> <li>3. Delivery of post harvest nutmeg technology.</li> <li>4. There is attention from research and development for the development of organic nutmeg</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintaining the quality of organic nutmeg in meeting the needs of the buyers.</li> <li>2. Increase farmers' experience to maintain organic nutmeg quality.</li> <li>3. Optimize the availability of labor to optimize the availability of vacant land.</li> <li>4. Utilizing the market information of organic nutmeg growers</li> </ol>	<ol style="list-style-type: none"> <li>1. Increasing organic nutmeg production.</li> <li>2. Optimizing equipment owned.</li> <li>3. Access Open market information.</li> <li>4. There is support from research and development in involving farmers in trainings.</li> </ol>

<i>Threat</i>	<i>Strategy (S+T)</i>	<i>Strategy (W+T)</i>
1. The existence of organic nutmeg competition	1. Maintaining the quality of organic nutmeg in market competition.	1. Organic nutmeg development by optimizing and increase production yield.
2. Competition of substitution products	2. Assistance and training of farmers in the development of organic nutmeg.	2. Increase the production of organic nutmeg processing
3. Lack of local government attention to the development of nutmeg orgnik	3. Increase human resources of organic nutmeg farmers through appropriate technology training	3. Controlling the needs of farmers by borrowing from the Bank.
4. Pest and disease attacks		
5. Inconsistent local/central government policies among agencies		

### 3. Alternative Decision Making Strategy On SWOT Analysis

Based on the assessment of IFAS (Internal Factor Analysis System) and EFAS (External Factor Analysis System) conducted on the strategy of prospects of organic nutmeg development In Ngidiho village, West Galela District, North Halmahera District. It can produce an average total IFAS value of (2.74) with a strength score of (1.43) and a weakness value of (1.31) while the mean total value of EFAS is (2.80) of the value of the opportunity ( 1.54) and a threat value of (1.26). To find out the prospect of organic nutmeg development In NgidihoVillage, Galela Barat Sub-district, Halmahera Utara District, based on internal and external factor assessment, there is a reduction between the number of strengths and weaknesses on the axis (X), and the reduction between the number of opportunities and the threat to the axis (Y) value,  $X = (SW) = 1.43 - 1.31 = 0.12$  and the value of  $Y = (OT) = 1.54 - 1.26 = 0.28$

Therefore, the numbers on both axes (X and Y = 0.12 and 0.28 are positive for the nutmegdevelopment prospect (organic in Ngidiho village, West Galela district of North Halmahera District, for more details can be seen in the figure below.



**Figure 1.** SWOT Analysis Diagram

Based on the picture above can be seen that the prospect of organic nutmeg development in Ngidiho Village, West Galela District of North Halmahera Regency is in kuadrad I or strategy that is

made using all the power to exploit the aggressive strategy opportunity that is to encourage farmers to maximize the land as the development of organic nutmeg by maintaining and improving product quality, intensification of agriculture by means of processing development such as the provision of organic fertilizers, to increase organic nutmeg production and meet market demand.

#### 4. Conclusion

Based on the results of this research, the prospect development of organic nutmeg (*Myristica Fragrans Fouut*) in Ngidiho Village, West Galela District, North Halmahera District.

1. The prospect of organic nutmeg development in Ngidiho Village, West Galela District of North Halmahera Regency is viewed from the biophysical aspect, that is, the climate condition is very supportive, from the social aspect that the community is supportive in the prospect of organic nutmeg development and the economic aspect, is also one of the determinants in improving the economy community.
2. The result of internal and external factor analysis using SWOT are IFAS value equal to 2,74 and EFAS value equal to 2,80 and seen from SWOT diagram that prospect of organic nutmeg development in Ngidiho Village of West Galela District of North Halmahera Regency is in quadrad I.

#### Bibliography

- [1]. Armando, R., 2009. Memproduksi 15 Minyak Asiri Berkualitas, Penebar Swadaya, Jakarta.
- [2]. Awangsa SA, Santoso H, Widayati WT, Kustomo YN, dan Supardino. 2001 *Gurat Hutan Rakyat di Kapur Selatan*. Debut Press, Yogyakarta.
- [3]. Badan Pusat Statistik 2015, *Produksi Perkebunan pala di Maluku Utara*.
- [4]. Badan Pusat Statistik, 2009, Kabupaten Fak-Fak. Dalam Angka 2009., 22 Oktober 2011.
- [5]. Balai Komoditi Industry, Deptan. 2009. Budidaya Tanaman Pala
- [6]. BPS Kabupaten Banyumas. 2013. *Kecamatan Somagede* dalam Angka 2012. *Kecamatan Somagede* dalam Angka 2012. Bayumas.
- [7]. BPS Republik Indonesia. 2014. Statistik Indonesia 2014. Jakarta.
- [8]. BPS Maluku. 2006. Maluku dalam angka. Malukuin figure 2005/2006 Penerbit BPS Maluku. Ambon. Hlm 253-258.
- [9]. Bastaman S. 2008. Prospek Pengembangan Minyak pala banda sebagai komoditas ekspor Maluku. *Jurnal Litban Pertanian*.
- [10]. Departemen Pertanian, 2005. Prospek dan Arah Pengembangan Agribisnis Cengkeh. Badan Penelitian dan Pengembangan Pertanian Departemen Pertanian.
- [11]. Departemen Pertanian. 1986. Pala dan pengolahannya. Bagian Proyek Informasi Pertanian Irian Jaya.
- [12]. Direktorat Jenderal Perkebunan. 2010. Daerah Sumber Tanaman pala di Provinsi Jawa Barat. Jakarta.
- [13]. Fitriana 2007. Analisis Saluran Pemasaran Komoditas Pala (*Myristica fragran Houut*) dan turunannya : Studi Kasus Desa Taman Sari Kecamatan Kabupaten Bogor.
- [14]. Hadad M.E.A, Randriani, C. Firman dan T. Sugandi. 2006. *Budidaya Tanaman Pala. Balai Penelitian Rempah-Rempah dan Aneka Tanaman Industri*.
- [15]. Hadiyah I. 2005. Analisis Kelayakan Finansial usahatani tanaman perkebunan rakyat di kabupaten baru. Prosiding. Balai Pengkajian Teknologi Pertanian, Maluku.
- [16]. Hafisah. (2000., :198). Strategi Pengembangan. (www.bappeKab.SidoarjoKab. Go.id).
- [17]. Hatta S. 1993. Budidaya Pala Komoditas Ekspor. Yogyakarta. Hidayat R. 2011. Perbandingan Pendapatan dan keuntungan Petani Pala (*Myristica fragrans Houut*) Antara penjualan dalam bentuk basah dan kering di kecamatan tanjung Raya Kabupaten Agam.
- [18]. Made, A. 2009. Pala, tanaman multiguna. Diakses dari ww.Kompas.com (30 April 2011).
- [19]. Marzuki, I. 2007. Karakteristik produksi, proksimat atsiri pala Banda. Hlm. 233-240. *Prosiding Seminar Nasional Akselerasi Inovasi Teknologi Pertanian Spesifik Lokal Mendukung Ketahanan Pangan di Wilayah Kepulauan, 29-30 Oktober 2007*.
- [20]. Nurdjannah N. 2007. Teknologi Pengolahan Pala. Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian, Badan Penelitian dan Pengembangan Pertanian, Bogor.,

- [21]. Purseglove, J.W., Brown E.G., Green S.L., andRobbins. S.R.J. 1995. Spice, New York: Longmans, pp 175-228.
- [22]. Rangkuti, Freddy, 2004, Analisis SWOT Teknik Membedah Kasus Bisnis, PT, Gramedia. Jakarta
- [23]. Rangkuti, F, 2006, Analisis SWOT Teknik Membedah Kasus Bisnis, PT, Gramedia. Jakarta
- [24]. Rangkuti, Freddy, 2008, Tentang Analisis Swot Teknik Membedah Kasus Bisnis, PT, Penerbit PT Gramedia Pustaka Utama Jakarta 2008.
- [25]. Soekartawi, 1994. Pembangunan Pertanian, PT, RajaGrafindo Persada, Jakarta. 1995a. Analisis Usahatani, UI-Press, Jakarta. 1995b.
- [26]. Dasar Penyusunan Evaluasi Proyek. Pustaka Sinar Harapan Jakarta.
- [27]. Sunanto, H. 1993. Budidaya Pala Komoditas ekspor. Penerbit Kanisius. Yogyakarta.
- [28]. Todaro, M. P., 2005, Pembangunan Ekonomi Penerbit Bumi Aksara Jakarta.

# The Influence of School Culture on The Characters of The Students of Muhammadiyah Junior High School 1 of Ternate City

Musa Marengke

IAIN Ternate  
Email :

**Abstract.** The study shed light on the influence of school culture on the characters of the students of Muhammadiyah Junior High School 1 of Ternate City. It aimed at finding out the implementation and the influence of the school culture on the characters of the students of Muhammadiyah Junior High School 1 of Ternate City. It was a correlational study with quantitative method. Its samples were 88 respondents. Data were collected using questionnaire, interview and observation. The data were analyzed using simple regression analysis and descriptive technique with SPSS version 23.00. The results showed that the implementation of the culture of the Muhammadiyah Junior High School 1 of Ternate City has strengthened the personal character, the social character and the citizenship character of the students. It was indicated by the results of the evaluation of the personal character, the social character and the citizenship character of the students, which were in the category of good enough. The total culture coefficient value was 0.651. It might be stated that the culture of the school had positive influence on the students, which was categorized as good enough. Thus, it was concluded that there was significant influence of the culture of the school on the characters of the students of the Muhammadiyah Junior High School 1 of Ternate City.

**Keywords:** *School Culture, Student Character*

## 1. Introduction

School culture in this essay is interpreted as an assumption pattern, value, belief, tradition and behavior of school community and is held together because it is believed can be used to face school problems. Zamroni (2016:8) contended that school culture can solve problems in school because culture covers something that is taught, possessed and done together in life. And character according to National Education Ministry (2010: 3) is “someone’s nature, character, moral, or personality that is formed as the result of internatiation of various virtues that is believed and is used a basis to view point, think, behave, and act”, therefore character is someone’s special character, and character cannot be separated from sociocultural context because character is formed in particular sociocultural society (Wardani, 2008).

School culture and students’ character have inseparable and interrelated relationship. The aim is to find out school culture phenomena and its influence on students’ character, in terms of personal character, social character, and students’ national character. School culture is a society condition that has great influence on students. John Locke’s Clean Slate Theory that contended that, students are just like white clear paper and then they will any scratch and the scratch can be anything depends on outer element, in this sense teacher (school culture) that will determine what character that will be possessed by the students (Sardimana. AM, 2003:12). Bad school culture will create chance for the students to have bad character and however, good school culture will make the students have creativity, achievement and good character. According to Stephen Stolp (1994), school culture is correlated with motivation icrease and students’ learning achievement as well as work satisfaction and teachers’ productivity. School culture influence is proven to have great role in the increase of educational upgrade (Zamroni, 2007:60).

Regulations of Indonesian President, number 87 year 2017 about character education reinforcement, in konsederan it is stated that Indonesia as a cultured nation is a country that uphold good behavior, high values, wisdom and character. In order to create country and people who have

character, moral, religious character, ethics, tolerance, discipline, democratic and culturally creative, the government is currently implementing some policies, activities and learning development to enhance character education in every school. Indonesian regulation No.20 Year 2003 about National Education System, Chapter 3, explained the Function and Aim of National Education, which is developing students' ability and students' nature or character. Students who have good character is hoped to be able to create prestigious country civilization. However, character education ideality is not always in line with current students' character reality,

Phenomenon showed that, Indonesian students' character is currently face "Split personality", students moral decadence, drugs addiction, prostitution, brawl, fight between schools and between friends in a school, sexual behavior and other violence actions. Additionally, education process in school until today still focus more on cognitive and psychomotor aspects than its effectiveness. Evaluation model through national examination rather than honesty aspect. Even the more shocking news that the test participants are forced, because if many students could not pass the test the school headmaster will be given penalty by Education Department or regent or mayor. This is an internal challenge. Whereas the external challenge is one of the negative effects of globalization process is the possibility of social disintegration. Forms of global culture have entered all social life parts in micro level, so that it is worried that traditional and moral values that live within the society and the school will be eroded little by little. The birth of new ethno-nationalism nationalism or country form. There is a tendency on the development of national sentiment that shift into primordial sentiment, in form of culture, race, and religion. That problem phenomenon indicated on failures in character education in school. School is considered to give less maximum role in guiding the students' character, such as personal, social as well as state characters.

The government is currently often talking about character shaping. Without culture, a good school will be hard to employ character education for the students. If school culture is already sufficient, anyone who enters and joins that school will automatically follow available tradition. School culture is school life ambience where the students interact with peers, teachers with teachers, counselors with students, among educators, and among educators and educators and students, and among social group members with school society that is bounded with various rules, norms, moral and ethic that apply in a particular school (Kulsum, 2011:25).

Young Pai (1997:21) explained that school culture as view pattern that covers: knowledge, skill, ability, attitude, manner and belief as well as important artifact that is highly important to be transmitted from generation to generation. The more school culture the better the school quality, and vice versa, bad school culture describes bad culture of that school. As what is shown by researches results that organization culture has significant relationship and able to affect organization quality especially in organization person innovation, responsibility, and leadership aspects (Sayed Mahmoud Tabatabaee, Amirhasan Koohi, Abbas Ghandali & Tayebah Tajik, 2016 ). And also the implementation of Total Quality Management ( TQM) theory on school culture that can contribute to headmaster's performance as well as increase teacher team cooperation and effective communication in managing school quality ( L.K. Ejionueme & Anthonia Oluchi Oyoyo ,2015).

SMP Muhammadiyah 1 of Ternate City is implementing students' character habituation. Character education implementation activities are when the students enter school gate the students have to greet the teacher who stand near the school gate. Before and after learning the students march in the school yard to pray and read short Koran verses, such as alfatihah, al-ikhlas, an-nas and many others. With the assumption that learning process become well organized and the knowledge becomes beneficial for the students and the teachers always insert spiritual values in every learning, always implement 3 S (smile, say salam, and greet). And SMP Muhammadiyah always try to minimize various obstacles and problems of the students' character that is very varied in terms of tendency. There are often fight between students, still throwing garbage not in place, less learning motivation and many others. Observation showed that students of SMP Muhammadiyah 1of Ternate City besides showing good manner but there are also many conflicts with other friends (fights). According to the statement of the vice headmaster, in average there are 5 fights and misunderstanding between students so that teachers have to calm and guide them. According to John Field (2010:120-121), the impact of social conflict in the other hand can ignite imbalance especially because of access on types of different network that is distributed unequally...and as a facility to access status source and position by sacrificing other people. But social source can become social frame as what was said by John Field

(2010:75), that social source can balance economy and social maturity as the impact of social source to minority children's education that the research results showed social support among students from Mexico in California High School showed that they generally have higher values and dreams and also have higher social sources. In social theory, it can have impact on school life, where school culture dynamic as reflection of a daily social life reality.

School culture that is currently being created by SMP Muhammadiyah 1 of Ternate City covers honest, help each other, trust each other, cooperation, reading, discipline and efficient, clean, achievement, social and nation cultures through regular school activities, spontaneous activities, model activities and conditioning activities. Those school activities are hoped to be able to create change and betterment for the school in organizing the students' character. The observation result showed that students and teachers' discipline are good enough it was seen from morning parade, students' and teachers' attendance every morning. And also from close relationship between the teachers and the students when they enter the school, in the learning process and until after school time they always shake their hands and greet each other, and also the relationship between teachers, there are always togetherness and respect for each other. And there is even school awareness (teachers and headmaster) where if there is a shortage in students study cost the teachers will help to pay, there is salary tithe for poor and orphan students. But a question that arises is, can school culture implementation phenomenon in SMP Muhammadiyah 1 of Ternate City give impact to students' character? In form of personal, society and country characters.

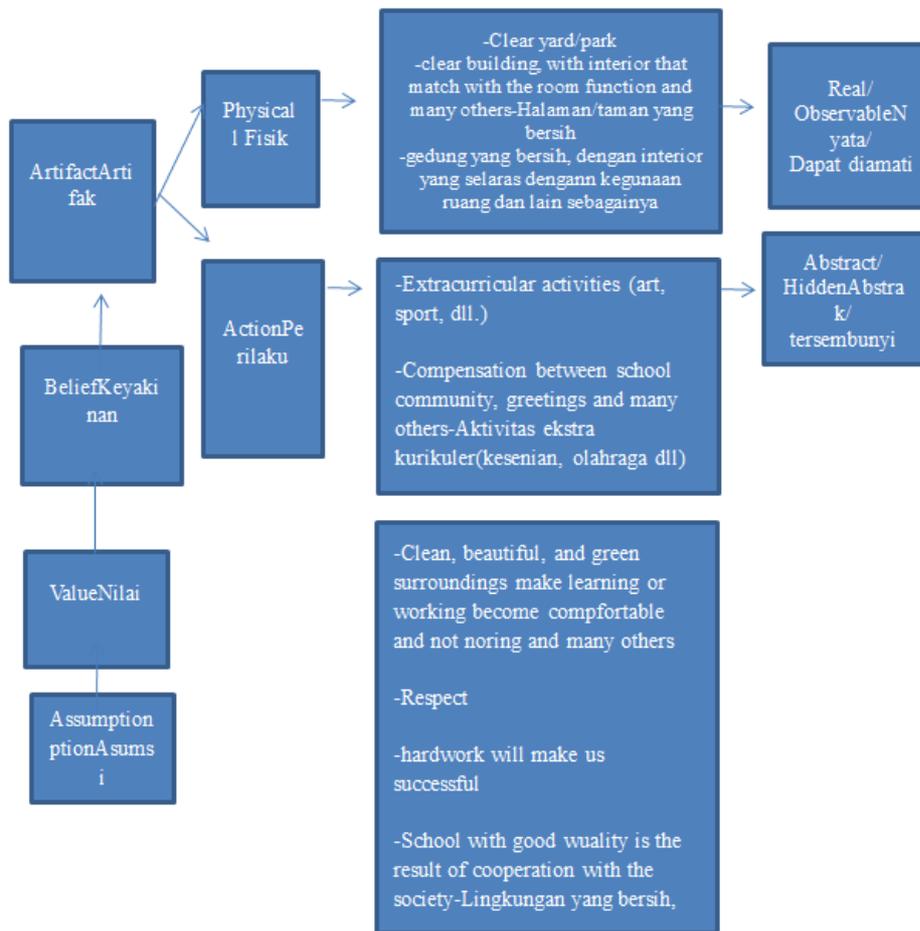
Culture that is understood in school can be in form of politeness, culture, maintenance and habituation (John M Echols & Hasan Shadily:2006:159). Linton (1995:32) contended that school culture creates configuration of behavior and behavior result where its forming elements are supported and continued by society members. However, school culture has complex pattern because it unities school community in one values and belief, custom and myths and every action to be united in one school organization (Roland Barth (2002:6). Edward T Hall (1987) said that school can make its own culture but it can be united but have relationship, which functions as a system to create, send, store, and process information as an inclusive communication system that combines human biological and technical actions in form or verbal and nonverbal.

Terrence E, Deal Kent D. Peterson (1999:2) explained that "School as a particular social institution has distinctive culture is not a new thing. "School has its own culture, custom irrational law, their morality (school community) and school community appropriate concept. And this obedience concept for Willard Waller (Peterson dan Deal, 2009: 8) has a series of value, norm, moral rules, and custom, that have formed actions and relationship that happen in it. And it can be done through roles of headmaster and teachers as what was contended by Short dan Greer (1997) that, school with belief, policy and custom can be formed, strengthened, and maintained through chiefs and teachers in school.

Positive attitudes and customs from the whole school community will create positive school culture condition but if the attitude and customs from the whole school culture is negative it will give school negative culture condition. Harold Entwistle (1986:6-7) contended that negative attitude and view can make social injustice become worse, but there is also positive culture, that has school moral value and normative aesthetics. Therefore, aspect that has to be seen in school culture is explicit and implicit aspect in school attitude. School explicit aspect can be seen from symbol or school artifact such as the school's physical and attitude of the school community. Whereas explicit tend to be about beliefs and values.

From this figures (Tabel 1), the school culture has two layers, the layers that are partially observable and partly unpredictable. The observable layers are spatial, exterior and interior, architecture, routines, customs, rules, veritas-stories, rituals, logos, symbols, ceremonies, slogans, pictures, flags, signs and ways of dressing. Whereas layers that can not be observed or can not be interpreted as a norm of behavior with the school community. *The first layer*, school culture, in the form of norms or behavior, various rituals, various ceremonies, symbolic objects, various habits that take place in school. These norms of behavior norms are generally difficult to change. This first layer is usually called the school artifact. However, there are those who argue that school culture is not a school artifact but an interpretable value and belief. These are the values, symbols, interpretations, and perspectives that distinguish one person from another in modern society (Banks & McGee, 1998: 57). *The second layer*, in the form of shared values held by the citizens of the school with what is

important, the good and the right, such as the norms of behavior desired by schools such as the expression of no pain no gain, book is the window of the world, and various depiction of value- and other beliefs. Being dilligent is the base of being bright, cleanliness of part of faith. The second layer cannot be observed because it is located in the together life. If the first coat of intangible behavioral norms is difficult to change, the second layer of values and beliefs is very difficult to change and takes time to change/being changed. And the bottom layer is an assumption used as a fundamental argument for behavior, beliefs and values, used in solving various problems and proven true so it become a guide, for example, assumption; all learners can master the subject matter based on different time volumes, studying vigorously provide a broader change of vision, diligent ehn coming to school school give many benefits, and so forth.



**Table 1.** Scope of School Culture Aspect  
(Source: Education Department of Padang Panjang City, 2010:151)

School culture has some aspects that become part of school attitude as what is explained by Zamroni (2016:45). Such as : (1) norms, values and faiths , (2) rituals, traditions and ceremonies, (3) shared hopes (4) symbols and physical products, (5) stories that create spirit, (6) Extracurricular activities, (7) decision making process, (8) cultural network that decides relationship between people.

Although school culture is something that is abstract but it has clear dimension and can be measured based on characteristics that can be used as a benchmark. According to Robbins (1994: 27), school culture can be seen from several general characteristics, namely: 1) individual initiative, 2) tolerance of risky action, 3) direction, 4) integration, 5) support from management 6) control, 7) identity, 8) reward system, 9) conflict tolerance, and 10) communication patterns. From these characteristics, Robbins further described the characteristics of school culture as follows:

1. The conduct of responsibility, freedom and independence of citizens or school personnel, school committees and others in giving initiative
2. How far the school can create clear vision, mission, aim, school target, and effort to make them true.
3. How far the units within the school are encouraged to work in a coordinated way.
4. The extent to which the principal provides clear information, assistance and support to school personnel.
5. The number of direct regulation and supervision used to monitor and control school behavior.
6. The extent to which school personnel identify themselves as a whole with the school rather than with a specific work group or professional area of expertise.
7. The extent to which the allocation of benefits is awarded is based on performance criteria.
8. The extent to which school personnel are encouraged to express criticism openly.
9. The extent to which communication between school personnel is limited by a formal hierarchy.

According to Mardapi (2003), there are three components or parts of school culture, namely: 1) positive culture, ie school culture in which there are activities that support the improvement of school quality, such as cooperation in achieving achievement, awards to the achievers, and commitment to learning, 2) negative culture that is, the atmosphere and activity of the school is reflected in contrast to the improvement of school quality, that is resistance to change, for example students are afraid of being wrong, students feel afraid to ask questions, and students rarely cooperate in solving problems, and 3) neutral culture, a school culture that does not focus on one side but can contribute to improve the quality of schools, such as school family gatherings, teacher uniforms, student uniforms and others.

School culture will be good if: a) the principal can act as a model, b) able to build teamwork, c) learn from teachers, staff, and students, and, d) have to understand good habits to continue to develop. Principals and teachers should be able to understand the specific school environment. Because, it will provide perspective and basic framework to see, understand and solve various problems that occur in school. By being able to understand complex issues as an in-depth unity, the principal and teachers will have the values and attitudes that are very necessary in maintaining and providing a conducive environment for the ongoing process of education in schools.

Each aspect is interconnected between the components of the school in building a school culture. School principals, teachers, students, employees, and school committees with all the different traits and personalities incorporated in a system of awareness building school will have an impact on the development of school quality. Collaboration system among all the citizens of the school will open a positive relationship for the development of their students, even impacting togetherness, and creativity of teachers and principals. The result of the study shows that collaborative school culture and teacher quality are very influential on student suspension where there is a decrease of 6.70%, where school culture factors have a great impact on the quality of students even on the development of school staff, this is because school culture is built from time to time (cultures that have behaved) led to collaboration between teachers, school leaders and parents

There are three components of school culture that must be developed in school such as 1) academic culture, 2) social culture 3) culture of morality. *First*, academic culture. Academic culture is indicated by every action, decision, policy, and opinion is supported by a strong academic foundation. This means referring to theoretical, legal basis, and tested truth value, not to mere popularity or presuppositions that have no strong empirical foundation. This is different from political culture or entertainment world. Thus, principals, teachers, and students always adhere to the theoretical footing in thinking, acting and acting in their daily lives. Academic culture is reflected in discipline in acting, wisdom in attitude, and expertise in thinking and arguing. *Second*, social culture. This culture is reflected in the development of schools that nurture, build, and develop positive social, such as *tenggang rasa*, price-appreciate, *silaturahmi*, participate in school manners, shared responsibility, justice, prosperity, humanity and others in the framework of human development completely. And 3) moral culture. This culture deals with aspects of school beliefs and values, such as morality, ethics, deliberation, justice, humanity, discipline, tradition, honesty, openness, life spirits, respect for people and others.

In this connection, Zamroni (2016, 5) presents some basic value components in the school culture such as: (1) have a commitment to work as well as possible at school, (b) commitment in

learning (c) trustworthy, d ) loyal to the school, (e) working together and collaborating, (f) egalitarianism, (g) serving students (h) emphasizing always making rational decisions, (i) having high ideals, (j) always planning, k ) seeks nonviolent efforts on the issues faced, and (l) has an open view. The value component requires the role and responsibility of the school principal to constrain the character of the student. The school headmaster should be able to see the school environment holistically, thus obtaining a broader framework for understanding difficult issues and complex relationships in the school. Through deepening his understanding of organizational culture in schools, he will be even better at providing sharpening of the values, beliefs and attitudes necessary to improve the stability and maintenance of his learning environment.

To shape the character of the students, the headmaster must pay attention to informal aspects, symbolic aspects, and the invisible aspects of school life that shape the beliefs and actions of every citizen of the school, so as to develop personal character, community character and student character. Kathy Ohm (2006: 15) asserted, the leadership role of headmaster has a relationship that cannot be separated from the school culture itself. The role of the headmaster by implementing the type of democratic leadership will have a positive impact on school culture, which provides motivation, innovation and achievement. Mugisha, Vancent M, (2013) in his research explained that culturally responsive instructional leadership requires action, creative, and collaborative needs of school principals to increase student involvement in school culture. School headmaster can use conflict management theory, because it becomes a reference in understanding the conflicts in schools. Soner Dogan (2016) explained that conflict management is essential in understanding the state of schools in Sivas-Turkey province, where conflicts often occur in schools because of the use of classes, ways of addressing peer problems, differences in teaching, social activities, school discipline, individual differences, political views and cultural differences among the citizens of the school.

Louise Stoll (1998) in the results of her research confirmed, schools have various cultures and of course the mindset is different so that there are four types of school culture that are ineffective to be used in different places and extreme in two dimensions of low social cohesion and high social cohesion. If low school social control means high social cohesion, but low social cohesion, school social control is also low. Student character as a form of mindset and pattern of action should be established through school culture (Abdullah Munir, 2010). The measure of the success of school culture in shaping the character of students can be seen in what are the school society's perception on culture and how the forms of school activities in fostering the character of students. Zamroni (2011: 157), asserted individuals who have good characters are individuals who can make decisions and attitudes to account for any consequences of the decision. Character can be regarded as the values of human behavior associated with God Almighty, self, fellow human being, environment, and nationality embodied in thoughts, attitudes, feelings, words and deeds based on religious norms, laws, manners, culture, customs, and aesthetics. Here, all school attitudes can generate all the potentials of students maximally. Characters that can be built through the school culture.

Lickona (Sudrajat, 2011: 49) pointed out seven reasons for the necessity of character education, as follows: The best way to ensure students have a good personality in their lives, ways to improve academic achievement, some students can not form strong characters for themselves in place etc., Preparation of students to honor the parties or others and can live in a diverse society, departing from the root of issues related to social moral problems such as immodesty, dishonesty, violence, sexual activity violations, and a low work ethic (study), best way to welcome behavior at work, learning cultural values that are part of the work of civilization. And therefore, Djemari Mardapi (2003: 5) contended that character is obtained through interaction with parents, teachers, friends, and the environment. Character is derived from the results of learning directly or observation of others. Direct learning can be in form of a lecture and discussion of character, while observation is gained through everyday experience what is seen in the environment including television media. Schools with culture can perform character education based on the basics of belief. According to the Ministry of National Education (2010) the values developed in cultural education and character are sourced or derived from religious values, Pancasila, culture, national education objectives, as follows:

Kemdiknas (2010: 9-10) has formulated religious, honest, tolerance, discipline, hard work, creative, independent, democratic, curiosity, spirit of nationality, love of the homeland, appreciate achievement, friendship or communicative, love peace, reading, environmental care, social care, and responsibility characters. Description of the character development of students according to the

Ministry of National Education (2010: 9-10). Additionally, Hoy and Miskel (2005: 174-184) stated that a good school culture will improve student achievement and motivation. Posnick-Goodwin (2004) also stated that: a good school culture teaches all school community (principals, teachers, students and staff) to obey the principle they want to build. The principle of togetherness, justice, friendliness, unity, unity, courtesy, harmony, and caring are to encourage students to create a good personality, possess the expected character. The character of the students that grow naturally along with the activity and creativity that is inside the school. Therefore, that school is in a position that determines the formation of character. Herein lies the role of principals, the role of teachers and their nature to create situations that support the ideal student character formation.

Character education requires an example or model as a model that is worthy of imitation. Something that will be imitated by the students, accompanied by the knowledge of why one needs to do what is imitated. For that reason, there should be an explanation why something should be done. Doing something must be serious, as a form of hard work. Attitudes and behaviors that are carried out must be enjoyed, done meaningfully, so that it provides experience for us. This experience can give meaning or spiritual to what is done. Thus, that behavior is internalized to the self that will become a habit. Ultimately, all of that was done with high hopes, that the behavior manifests the best results (Zamroni, 2011: 283).

## 2. Research Method

This research was conducted in September until December 2017. This research is kind of correlational research. Identify the effect of a single variable (school culture) on student character variable. The population in this study refers to the monthly report of the school in October 2017 SMP Muhammadiyah 1 of Ternate City which is a total of 130 students. The sample size using the Isaac and Michael table (2010) that is based on a 10% error,

$$S = \frac{\lambda^2 . N . P . Q}{d^2 (N - 1) + \lambda^2 . P . Q}$$

$\lambda^2$  with dk=1, error level 10 %

Note:

S=number of sample

$\lambda^2$  = Chi Kuadrat depends on dk that is 1 and error of 10 %, Chi Kuadrat value=2.706

N=Number of population

P=Correct chance (,0,5)

Q =Wrong chance (0,5)

d = Difference among sample with what happens.

$$S = \frac{\lambda^2 . N . P . Q}{d^2 (N - 1) + \lambda^2 . P . Q} =$$

$$S = \frac{2.706 \times 130 \times 0,5 \times 0,5}{0,5^2 (130 - 1) \times 2.706 \times 0,5 \times 0,5}$$

Samples =88

### 2.1. Data collection technique.

Data collection technique of this research used three ways such as (1) questionnaire, (2) observation/ interview, (3) documentation.

#### 1. Questionnaire technique.

This questionnaire is used as the main data retrieval technique. Arranged in the form of statements sheets consisting of two parts of the instrument, namely:

- A. Questionnaire that contains Students Character consists of (1) Personal character in form of 14 indicators, (2) Social character consists of 5 indicators, and country character consists of 7 indicators,
- B. Questionnaire that contains School Culture consists of: (1) Regular activity in form of 12 indicators, (2) Spontaneous activity consists of 3 indicators, (3) model consists of 7 indicators

and (4) conditioning consists of 7 indicators. The questionnaires were distributed to the students.

**2. Interview Technique.**

This technique as a technique of retrieving supporting data from the questionnaire, which is addressed to some students to know some things that are considered require detailed or in-depth explanation of the Questionnaire that has been filled.

**4. Observation.**

Observations are used to ascertain the veracity of the data (verification) of questionnaire data and/or information through interviews.

**3. Document.**

Documents in this study to be taken are photos, school monthly reports, short history of school, and other letters related to the needs in this study.

**2.2. Data Analysis Technique.**

The preparation of school culture influence instrument to the students' character consists of several indicators. Indicators are as mentioned above. The instrument of this study using Likert scale, which is 4 choices of answers. I.e (Strongly Disagree (STS), 2 = Disagree (TS), 3 = Less Agree (KS), 4 = Agree (S), and 5 = Strongly Agree (SS).

Data analysis technique that was used was descriptive analysis. It was used to provide an overview of the phenomenon and influence of school culture on the character of students. Table 7. Distribution of Data Categories.

No	Score Range	Category
1	(Mi + 1,5 SDi) until (ST)	High
2	(Mi + 0,0 SDi) until (Mi + 1,5 DSi)	Enough
3	(Mi - 1,5 SDi) until (Mi + 0,0 SDi)	Less
4	(SR) until (Mi - 1,5 SDi)	Low

**3. Results And Discussion**

**3.1. Description of Data**

The data in this study were obtained from the instrument in the form of a questionnaire given to students of grade 7, 8 and 9 SMP Muhammadiyah 1 of Ternate City as well as from interviews and documentation in the form of data collection and photo images. This chapter will describe the data that has been collected from each of these aspects.

**1. Description of Students' Character Description, Social and National Character.**

Based on student character questionnaire of SMP Muhammadiyah 1 of Ternate City with 30 samples of respondents taken from grade 7 = 29 respondents, 8th grade = 28 respondents and grade 9 = 33 respondents, with score range 1-4 on each item. The result of questionnaire that has been analyzed has empirical data, as table 2 below:

**Tabel 3.** Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
School Culture	88	2.76	4.86	4.1080	.64877
Students' Personal Character	88	1.86	4.64	3.7333	.73155
Students' Social Character	88	1.60	4.80	3.8467	.77135
Students' National Character	88	3.00	4.86	4.4048	.46113
Students' Character	88	2.46	4.69	3.9359	.58429
Valid N (listwise)	88				

Based on the table, the student's personal character consisted of 30 samples, had a value between 1.86 to 4.64, with an average of 3.733 and a standard deviation of 0.733. These results suggested that respondents' assessment of students had good personal character, as shown from the average value of which exceeds the average value of the ideal ((5 + 1): 2 = 3), namely 3.733 > 3. In

other words, the implementation of school culture in the aspect of character students in SMP Muhammadiyah 1 of Ternate City have succeeded in supporting the school culture. Likewise, the student's student character consisted of 30 samples, had a value between 1.60 to 4.80, with an average of 3.847 and a standard deviation of 0.771. These results suggested that the assessment of respondents to the student community have good character, as shown from the average value of which exceeds the average value of the ideal  $((5 + 1) : 2 = 3)$ , namely  $3.847 > 3$ . And this was supported by the empirical results of of Student Character of Muhammadiyah Junior High School 1 of Ternate City that consisted of 30 samples, had a value between 3.00 to 4.86, with an average of 4.405 and a standard deviation of 0.461. The results indicated that the respondent's assessment of the character of the student's state had been good, shown from the average value that exceeded the ideal average value  $((5 + 1) : 2 = 3)$  that is  $4.405 > 3$ . It means that all aspects, the character of the students, the character of society and the character of the state has grown among students as part of the character of the students of SMP Muhammadiyah 1 of Ternate City.

## 2. General Description of the Students' Character.

Based on table 10 above, the character of students consisted of 30 samples, had a value between 2.46 to 4.69, with an average of 3.936 and a standard deviation of 0.584. The results showed that the respondents' assessment of the character of the students in total was already good, as indicated by the average value that exceeds the ideal  $(5 + 1) : 2 = 3$  of  $3.936 > 3$ . This means that the school culture had a significant influence on the character of students of SMP Muhammadiyah 1 city Ternate, both aspects of personal character, social character and the character of the state. The enormous influence of school culture on character. It would be clearly described in the discussion.

## 3. Description of School Culture Variable.

Based on the school culture questionnaire of SMP Muhammadiyah 1 of Ternate City with 30 samples of respondents taken from grade 7 = 29 respondents, 8th grade = 28 respondents and grade 9 = 33 respondents, with score range 1-4 on each item. The result of questionnaire that has been analyzed has empirical data, as seen on table 4 below:

**Table 4.** Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
School Culture	88	2.76	4.86	4.1080	.64877
Students' Personal Character	88	1.86	4.64	3.7333	.73155
Students' Social Character	88	1.60	4.80	3.8467	.77135
Students' National Character	88	3.00	4.86	4.4048	.46113
Students' Character	88	2.46	4.69	3.9359	.58429
Valid N (listwise)	88				

Based on the table, the school culture obtained values between 2.76 to 4.86 with an average of 4.108 and a standard deviation of 0.649. If the analysis used interval and category then the respondent's assessment of school culture was good, also indicated from the average value that exceeded the ideal value  $(5 + 1) : 2 = 3$ , that was  $4.108 > 3$ . Thus, the implementation of culture schools or application of cultural values in SMP Muhammadiyah 1 of Ternate City had succeeded in creating a good school situation.

## 3.2. Discussion

### 1. Characters of the Students

Based on data collected through the school culture questionnaire that embraces the culture on the character of the students, the social character and the national character had used descriptive analysis that the students' character of school culture of students of SMP Muhammadiyah 1 of Ternate City was in the category of quite good, as described in table 10 above.

#### A. Personal Character(KP)

Based on the descriptive analysis above showing the value between 1.86 to 4.64 with an average of 3.733 with a standard deviation of 0.733, indicated that the implementation of school culture SMP Muhammadiyah 1 of Ternate City had been applied by students, especially in aspects of

student character (KP), as the value the ideal average  $(5 + 1) : 2 = 3$  is  $4.108 > 3$ . This was reinforced by the observation in the school that the school has applied the motto 3 S (smile, greetings), honest attitude, mutual respect, where the school apply the rules every morning to enter the school, among students and teachers greet each other, then was continued by reading Koran, letters of approach such as verses of alfatihah, al-ikhlas, an-nas, al-falaq and so on. In addition, students performed dhuha prayers before the teaching and learning activities and performed dzuhur prayer in the school's musallah before students come home or out of school.

#### *B. Social Character (KM)*

Based on the above descriptive analysis, that showed the value between 1.60 to 4.80 with an average of 3.847 with a standard deviation of 0.771, indicated that the implementation of the school culture in SMP Muhammadiyah 1 of Ternate city had been applied by students, especially in the aspect of social character (KM) ideal  $(5 + 1) : 2 = 3$  ie  $3.847 > 3$ . This was reinforced by the results of school observation that the school had been implementing culture of social character to students, as the school regulation number 3 / K / SMP Muh / 8/2015, mandated in addition to students praying, and praying before and after studying in school, students are also invited to help each other, appreciate friends, and reconcile friends when there were fighting or misunderstanding. This was explained by the vice principal of the curriculum: "that before this rule was made, there were frequent fights, bothering friends who were are learning and robbing food or drink from his friends, but after the application of this rule, students experienced change, there were rarely fights and disturbing friends. As said by Nur (student) from SMP Muhammadiyah 1 of Ternate City.

*"At 07.00 am we go in and start the lesson with a prayer together, followed by tadarusan. The time is 10 minutes. The purpose of the prayer is that we always remember God so that we initiate any activity with calm our hearts and minds. Tadarusan also motivates students to diligently study, train students to read the Koran fluently. While infaq was held so that the students are not miserly, want to distribute the money they have for others who need it. (Interview results, January 12, 2012).*

Thus, the school made school culture in the form of social character have become part of the school life that every moment the students as well as the teachers and the school leaders.

#### *C. National Character (KN)*

Based on the above descriptive analysis, which showed the value between 3.00 to 4.86 with an average of 4.405 with a standard deviation of 0.461, indicated that the implementation of school culture in SMP Muhammadiyah 1 of Ternate city had been applied by the students, especially in th by the results of school observations that the school had been implementing some indicators of the character culture of the state to the students, It can be seen on every morning at 7.15 students with teachers performed morning parade and flag ceremonies and after the ceremony of students sang national anthems, and students greet each other and amuse each other. In addition, students with religious backgrounds, and different tribes but this.

Thus, the character of the students in general has become a living part in the implementation of education and teaching in SMP Muhammadiyah 1 of Ternate city. Every moment the school implemented the 3 S concept (smile, greetings, greetings) and character education designed in the subject matter, such as religion education (aqidah, *tariq, ahlak, kemuhammadiyahahan*) and also material about citizenship. This become the target of the school so that students also have social competence in addition to having personal competence. It was mentioned on descriptive analytical data that of 30 samples have scores between 2.46 to 4.69 with an average of 3.93 indicating that the students of SMP Muhammadiyah 1 of Ternate city already have character with a good category, as the average value of the ideal  $(5 + 1) : 2 = 3$ , ie  $3.936 > 3$ .

#### *2. The Influence of School Culture on the Students' Character.*

Based on the results of research that was done with a simple regression test it can be concluded that there was influence of school culture on the students' character of SMP Muhammadiyah 1 of Ternate city:

##### *A. The Influence of School Culture on Students' Personal Character (KP)*

From the data analyzed from 30 samples using regression test analysis then the influence of school culture on the personal character of students of SMP Muhammadiyah 1 of Ternate city was analyzed. However, how big the school culture variables explained aspects of personal character of

students. Based on the determination test, the determination coefficient (R Square) value of 0.489 indicated that 48.9% of the students' personal characters can be explained by the school culture variables, while the rest (100% - 48.9% = 51.1%) was explained by the other variable outside the research variables. Therefore, the rules of decision were as follows:

H0= School culture has no positive influence on the student's personal character

H1= School culture has positive influence on the student's personal character

Real status:  $\alpha=0,05$ ,

Furthermore, to see whether there is influence or not of thw school culture on the personal character of students can be seen in table 4.

**Table 5.Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.495	.633		.781	.441
	School Culture	.788	.152	.699	5.175	.000

a. Dependent Variable: Students' Percona; Character

Based on the analiais data on t test, iit was shown that the value of school culture variables coefficient is 0.788, and the significance value of school culture variables was 0.000, smaller than  $\alpha = 0.05$ , then Ho was rejected. This means that school culture had a positive effect on the personal character of students of SMP Muhammadiyah 1 of ternate city. This was due to several factors that supported the implementation of the school culture that was the application of the behavior of Islamic values that are polite, honest, discipline, respect for others, and that islam, always apply religious behavior, and apply school code of conduct about the importance of self-with mental coaching, in the form of Training of Muhammadiyah Youth, Koran tadaruus and *Tapak Suci*. These activities. In addition, the school has implemented a 7 minute teaching for teachers and leaders to provide advice or encouragement and encouragement to students that was organized by the vice principal of student affairs. There were also school culture activities such as school routine activities, spontaneous activities, emodel and conditioning. Routine routine where schools perform routines of prayer activities duha congregation before the lesson begins and pray dzuhur congregation before students come home from school, as well as on spontaneous, where the school accommodate and teach students to visit friends who are sick, give donation to students or friends who received disaster or face family death. In addition, the school implemented model, instructed teachers to come early to school before students come, performed prayer and school provides facility for ablution, toilets, mushalah, pictures and pamflets as well as motto with a representative yard. This activity was essentially intended to provide personality therapy for the students so that the students at any time display their personality as a result of good behavior.

**B. The Influence of School Culture on the Students' Social Character (KM)**

From the data that were analyzed from 30 samples by using regression test analysis it was then analyzed that the influence of school culture on the social character of the students' of SMP Muhammadiyah 1 of ternate city. Nevertheless, how big the school culture variables explained the aspects of the students' social character? Based on the determination test, the determination coefficient (R Square) value of 0.380 indicated that 38% of students' social characters could be explained by school culture variables, while the rest (100% - 38% = 621%) was explained by other variables outside the research variables. This could be seen in the F test using 95% confidence, df 1 (number of variables-1) = 1, and df 2 (n-k-1) = 28, the results obtained for F table of 4,196 with a significance value of 0.000. So the value of F arithmetic > F table (17,156 > 4,196) or the value of  $p < \square$  (0,000 < 0,05), then Ho was rejected, meaning that the school culture variables significantly influenced the character of student society, based on rules of decision as follows:

H0= School culture has no positive influence on the students' social character

H1= School culture has positive influence on the students' social character

Real status:  $\alpha=0,05$ ,

Furthermore, to see whether or not there is influence of school culture on the social character of the students can be seen in table.5

**Table 5.** Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.836	.736		1.137	.265
	School Culture	.733	.177	.616	4.142	.000

a. Dependent Variable: Students' Social Character

Based on data analysis on t test it showed that the coefficient value of school culture variables was 0.733. The significance value of school culture variables was 0.000 which was smaller than  $\alpha = 0.05$ , then  $H_0$  was rejected. This means that the school culture had a positive influence on the social character of students of SMP Muhammadiyah 1 of ternate city. This was due to several factors that support the implementation of school culture. The results of the observations are described as follows

*"Schools carry out routine activities to support students' social characters by doing 3 S (smile, greetings, salaam), giving the task of donating to friends who are ill or less fortunate, takziah together when their friend are sick or passed away, and the students give infaq every day, as the students' saving, and used it when there are ill friends, social service and sponsorship to the orphanage or give it to their friends who are unable to pay the tuition fees "(interview, October 27, 2017).*

This social character was also supported by the behavior of teachers of SMP Muhammadiyah 1 of ternate city by conducting sponsorship activity to students who are less fortunate. The results of the observation showed that the teachers gave transport expense or SPP money and the achievement money from the teachers. This was witnessed by the researcher during the activity of Asyura Day (karbala day) which happened in October 2017. As the result of interview with Mrs. Lili, M .Pd."

*"We are here, about 8 teachers from 13 teachers already have data base about orphaned students, or poor students. And we give them in the form of clothes, groceries, shoes, still in form of money and we give food every odd semester, And this is an initiative from ourselves, the principal did not know. This is our sincerity. Because we teachers often give something to them (students) then when students are on vacation then return from their hometown, they (students) also give us (teachers) like fish, popeda, chicken egg etc."(interview, 27 October 2017).*

This activity was essentially designed to give social characteristic therapy of students of SMP Muhammadiyah 1 of ternate city. In order for them to become sensitive to their fellow friends, to others people and public in general.

### C. The Influence of School Culture on the Students' National Character (KN)

From the data that was analyzed from 30 samples by using regression test analysis it was then analyzed that the effect of school culture on the character of the community of SMP Muhammadiyah 1 of Ternate City, but how big the school culture variables explained the characteristic aspects of national society? Based on the determination test, the determination coefficient (R Square) value of 0.202 indicated that 20.2% of students' characters could be explained by the school culture variables, while the rest ( $100\% - 20.2\% = 79.8\%$ ) were explained by the variable other outside the research variables. This can be seen in the F test using 95% confidence,  $df_1$  (number of variables-1) = 1, and  $df_2$  ( $n-k-1$ ) = 28, the results obtained for F table of 4,196 with a significance value of 0.013. So the value of  $F_{arithmetic} > F_{table}$  ( $7.068 > 4.196$ ) or the value of  $p < \alpha$  ( $0.013 < 0.05$ ), then  $H_0$  was rejected, meaning that the school culture variables significantly influenced the students' character. Based on the rules of decision as follows:

$H_0$ = School culture has no positive effect on the student's national character

$H_1$ = School culture has positive effect on the student's national character

Real status: $\alpha=0,05$ ,

Furthermore, to see whether or not there was influence of school culture on the students' national character can be seen in table 6.

**Table 6** Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.094	.499		6.200	.000
	School Culture	.319	.120	.449	2.658	.013

a. Dependent Variable: The students' national character

Based on the above results it was obtained that the coefficient value of school culture variables was 0.319. The significance value of school culture variables was 0.013, which was smaller than  $\alpha = 0.05$ , then  $H_0$  was rejected. This means that the school culture had a positive effect on the students' national character.

The influence of the school on the national character, because the school has routine school activities that are carried out daily as routine activities, such as red and white flag ceremonies and perform morning parade together at school and sing Indonesian national anthems and struggles, such as Hymns songs, *halo-halo bandung* songs, indonesia raya song and many others. These songs according to the counseling tutors (Nurhaya) are often contested in the school and were taught to the students through our attitude not to distinguish each other so that the students did not distinguish them. Additionally, the school implemented a culture of mutual help, such as the devotion and the big event-state activities.

From the description above, that with the visible positive and interrelated relationship between school culture and the character of the students of SMP Muhammadiyah 1 of Ternate City. According to the whole data analysis between school culture and the characters of the students of SMP Muhammadiyah 1 of Ternate City towards the significant influence on the development of the students' personality. This was consistent with the test results, using 95% confidence,  $df_1$  (number of variables-1) = 1, and  $df_2$  (n-k-1) = 28, results obtained for F table of 4,196 with a significance value of 0.000. So the value of  $F_{arithmetic} > F_{table}$  (30,708 > 4,196) or the value of  $p < \alpha$  (0,000 < 0,05), then  $H_0$  was rejected, meaning that the school structure variables significantly influenced the character of the students.

**Tabel 7.** Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.260	.489		2.579	.015
	School Culture	.651	.118	.723	5.541	.000

a. Dependent Variable: The Students' Character

Based on the decision criteria at the real level of 0.05, the coefficient value of the school structure was 0.651. The significance value of school culture variables was 0,000 which was smaller than  $\alpha = 0.05$ , then  $H_0$  was rejected. This means that school culture had a positive effect on the character of the students. The results of this study were strengthened by other studies that used the same variables of school culture and student character. Bayu Rahmat (2012) stated that there was a positive and significant relationship that was the school culture level of 69.48%, teacher exemplification of 59.08%, and the character of students was 64.86% was considered as in good criteria.

#### 4. Closing

1. School culture of SMP Muhammadiyah have implemented reinforcement concept of personal, social and national characters. In addition, it has been done as part of the school's program, through routine, spontaneous, model and conditional school activities.
2. School culture had positive influence in the students' personal character with coefficient value of 0,788. As well as on school culture on the students social and national character, with coefficient value of 0,733 and 0,319.
3. Based on the results of hypothesis testing in this study it was found the influence of school culture on the character of students with the value of 0.651 were categorized as good so that it can be concluded that there was a significant influence of school culture on the character of the students of SMP Muhammadiyah 1 of Ternate city.

#### References

##### Book

- [1]. Abdulah Munir. (2010). *Character Education Builds Children's Character from Home*. Yogyakarta: PT. Pustaka Insan Madani.
- [2]. Djemari Mardapi. (2003). *Junior High School Students' Competence-Based General Guideline of Learning Result Evaluation System*. Yogyakarta: Postgraduate Program of UNY.
- [3]. Indonesian National Education Department, Language Centre, Indonesian Great Dictionary (1998)
- [4]. John Field. (2010). *Social Modal translated by Nurhadi from a book by John Field "Social Capital"; Bantul Yogyakarta: Discorse Creation*).
- [5]. John M. Echols & Hasan Shadily. (2006). *English Indonesian Dictionary; An English-Indonesian Dictionary: Cet. XXVIII, jakarta: PT. Gramedia Pustaka Utama*
- [6]. Kulsum Umi. (2011). *The Implementation of PAIKEM-Based Education (A new Paradigm of Education in Indonesia)*. Surabaya: Gena Pratama Pustaka.
- [7]. Kathy Ohm. (2006). *Leadership and culture: The close connection, Leadership*.
- [8]. Linton, R. (1995). *The Cultural Background of Personality*, New York
- [9]. Sugiyono. (2010). *Quantitative, Qualitative, and R&D Educational Research Method*. Bandung: Alfabeta
- [10]. Sardiman, A.M. (2003). *Interaction and Teaching-Learning Motivation*. (1<sup>st</sup> ed.; Jakarta: Raja Grafindo Persada.
- [11]. Zamroni. (2016), *School Culture* (1<sup>st</sup> ed.; Yogyakarta: Gavin Kalam Utama.
- [12]. Zamroni. (2007). *Education and Democration in Transition*. Jakarta: PSAP Muhammadiyah.
- [13]. Zamroni. (2007). *Education Management: An Effort to Increase School Quality* (1<sup>st</sup> ed.; Yogyakarta: PSAP Muhammadiyah, 2007).
- [14]. Zamroni. (2011). *Democration Education in Multicultural Society*. Yogyakarta: Gavin Kalam Utama.

##### Journal

- [1]. Banks, J.A.B & McGee. C.A. (1989). *Multicultural Education*. Needham Heights, MA: Allyn & Bacon.
- [2]. Hoy dan Miskel. (2005). *The relationship between school culture and leadership practices*. Egitim Arastirmalari-Eurasian Journal of Educational Research,
- [3]. Barth, Roland. (2002). *The Culture Builder, Educational Leadership*.
- [4]. Education Department of Padang Panjang City, Teacher Journal "Learning in Elementary and Middle School, No 2 Volume 7 December 2010, Issn.0216-0692,
- [5]. Edward T Hall. (1987). *Hidden Differences Doing Business with the Japanese*. Anchor Books.
- [6]. Harold Entwistle (1986) *Class Culture and Education*.
- [7]. [https://link.springer.com/chapter/10.1007/978-3-319-56083-0\\_11](https://link.springer.com/chapter/10.1007/978-3-319-56083-0_11), retrieved on December 20, 2017
- [8]. Haryanto. (2011). Education Scientific Journal "Education Firmament": *Character Education According to Ki Hajar Dewantara*. Yogyakarta: ISPI-LPM UNY. Edition XXX M ay 2011 page 15 s.d 27

- [9]. Kroeber, A.L. & Kluckhohn, C. (1952), *Cultural: A critical Review of Concepts and Definitions*: Harvard University Peabody Museum of American Archeology and Ethnology.
- [10]. Louise Stoll. (1998). Journal *Reprinted from School Improvement Network's Bulletin, No. 9*, Institute of Education, University of London. *School Culture*,
- [11]. Matthew Ohlson, Anne Swanson, Andrea Adams & Anna Byrd. (2016). Journal: Education and Learning Published by Canadian Center of Science and Education, volume 5, number 1, 2916. *A Culture Success Examining School Culture and Student Outcomes via a Performance Framework*.
- [12]. Young Pai (1997), *Cultural Foundations of Educational*, Columbus, Ohio-Merril Publishing Company.
- [13]. Peterson, Kent D. and Terrence E. Deal. (2009). *Shaping School Culture Fieldbook*. San Francisco: Jossey-Bass.
- [14]. Posnick-Goodwin. (2004). *A collaborative culture for school improvement: Significance, definition, and measurement*. Unpublished manuscript, College of Education, University of Missouri-Columbia, Missouri.
- [15]. Seyed Mahmoud Tabatabaee, Amirhasan Koochi, Abbas Ghandali & Tayebbeh Tajik. (2016). Journal, vol.9; number 5. *The Study of Relationship between Organizational Culture and Organizational Belonging in Employees of Varamin County Office of Education*
- [16]. Soner Dogan, (2016). International Journal of Higher Education, Turkey, volume 5, number 1, 2016. *Model Values-Based Management Process in Schools: Mixed Design Study*;
- [17]. Terrence E. Deal Kent D. Peterson. (1999). *Shaping School Culture; The Heart of Leadership*: California: Jossey-Bass Publishers San Francisco.,

**Guideline Book:**

- [1]. Kemendiknas. (2010). Values that are Developed in Culture Education and National Character.
- [2]. -----(2011). Guideline of the Implementation of Character Education. Jakarta: Curriculum and Book Centre.

**Regulation:**

- [1]. Regulation of The Republic of Indonesia number 20 year 2003 about National Education System.
- [2]. President Regulation (PP), The Republic of Indonesia, number 87 year 2017 about character education reinforcement.

# Determining Uniform Minimum Variance Unbiased Estimator (UMVUE) on Random Variables Using Cramer Rao Lower Bound Theorem

Muzakir Hi Sultan<sup>1</sup>

<sup>1</sup>Departement of Mathematics, Faculty of Mathematics and Sciences  
Muhammadiyah University Of Nort Maluku

**Abstract.** In a mathematical statistic an estimator is said to be unbiased best if each estimator reaches the lower Bound of UMVUE (Uniform Minimum Variance Unbiased Estimator). UMVUE can be searched using two methods, namely Cramer Rao Lower Bound (CRLB) method and sufficient statistical concepts. The discrete distribution function in this research is Poisson distribution and Bernoulli distribution, while in the continuous distribution function is the Normal distribution and Exponential distribution provided that it has been proved that distributions are included in the exponential family. From the distribution function can be searched parameter estimation using Likelihood maximum method, then to determine the unbiased of an estimator on discrete or continuous distribution used the CRLB Theorem which  $\text{Var } T \geq \text{Var } T^*$ . Before determining the variance it first proves the unbiased of the estimator, provided that  $\hat{\theta}$  is called the best unbiased estimator for parameter  $\theta$  when  $E(\hat{\theta}) = \theta$ . If the estimator is an unbiased estimator it can proceed to determine the variance. The results showed that the parameter estimator of the functions of these distributions was the best unbiased estimator

**Keywords:** *Discrete and Continuous distributions, Exponential Family, Maximum Likelihood method, UMVUE and Cramer Rao Lower Bound Theorem*

## 1. Introduction

The use of inferencing statistics is needed in studying advanced statistics other than descriptive statistics. Inferential / inductive statistics is statistically related to the way inferences based on the data obtained from the sample to describe the characteristics of a population. Withdrawal conclusions in inferencing statistics, one of which can be done by parameter estimation [10]. In an experiment can be determined the probability of the values of random variables, which are then used to determine the function of probability distribution. From the probability distribution function it is estimate to the parameter.[8] There are two types of parameter estimators of a distribution function, ie point estimation and interval estimation. The point estimator of a parameter is a value obtained from the sample and is used as an estimate of a parameter value is unknown. Whereas the parameter interval estimator is an interval of value such that the possible values of that parameter will be included in that interval with a certain probability [4]

A good estimator must satisfy some of the expected properties of a distribution function, which is unbiased and has minimum variance. The usual method of estimating is one of them using the Likelihood maximum method.[8]. Then to determine the size of the goodness of an estimator on the distribution used Theorem Cramer-Rao Lower Bound. The uniform minimum variance unbiased estimate (UMVUE) is obtained if each unbiased estimator reaches the lower bound of variance.[9]

So the purpose of this study is to determine the best unbiased estimator (UMVUE) using Cramer-Rao Lower Bound Theorem on the discrete probability distribution of poisson distribution and bernoulli distribution. As well as the continuous probability distribution of the normal distribution, and the exponential distribution.

## 2. Basic Theory

### 1. Random Variable

#### Definition 1

Random variable is a function defined in the sample space  $S$ . ie  $S = \{e_1, e_2, \dots, e_n\}$ . so resulting a value  $X(e) = x$ , with  $e \in S$  and  $x \in R$  [2].

### 2. Discrete Probability Distribution

function  $f(x)$  is a discrete probability density function (pdf) if and only if sufficient conditions both satisfy the properties for the set of real numbers  $R$  measurable  $x_1, x_2, \dots, x_n$  then [5]:

- $f(x_i) \geq 0, \forall x_i$
- $\sum_{i=1}^n f(x_i) = 1$
- $P(X = x) = f(x)$

### 3. Continuous Probability Distribution

function  $f(x)$  is a continuous random probability density function  $X$  (pdf) defined in the set of all real numbers  $R$  then [5]:

- $(x_i) \geq 0$ , for all  $x \in R$ .
- $\sum_{i=1}^n f(x_i) = 1$
- $P(a < x < b) = \int_a^b f(x) dx$

### 4. Expectations

The probability distribution has various properties or characteristics used to identify a distribution. Characteristics that are usually used is the average count or expectations dan variance [9].

#### Definition 2

Let  $X$  be a random variable with the probability distribution  $f(x)$  the expected value or the mean of  $X$  is [6]:

$$\begin{aligned} \mu &= E(X) = \sum_x x f(x), & \text{if } X \text{ discrete} \\ \mu &= E(X) = \int_{-\infty}^{\infty} x f(x) dx, & \text{if } X \text{ continuous} \end{aligned} \quad (1)$$

Next by using expectations, the variance of the probability distribution can be determined by the following relations:

$$Var(X) = \sigma^2 = E(X^2) - (E(X))^2 \quad (2)$$

### 5. Exponential Families

#### Definition 3

Family densities are called exponential families if they can be expressed as [8]:

$$f(x|\theta) = h(x)c(\theta)\exp\left[\sum_{i=1}^k w_i(\theta)t_i(x)\right] \quad (3)$$

di mana:

$h(x)$  : Random sample

$c(\theta)$  : Parameter

$t_i(x)$  : Sufficient statistics

for  $h(x) \geq 0, t_1(x), t_2(x), \dots, t_k(x)$  the real function of  $x$  ( independent on  $x$ ),  $c(\theta) \geq 0$  and  $w_1(\theta), w_2(\theta), \dots, w_k(\theta)$  the real function of  $\theta$ .

### 6. Maximun Likelihood Method

#### Definition 4

Let  $x_1, x_2, \dots, x_n$  is i.i.d a sample of population with density  $f(x|\theta_1, \dots, \theta_n)$  likelihood function is defined as [3].

$$L(\underline{x}|\underline{\theta}) = L(x_1, \dots, x_n|\theta_1, \dots, \theta_n) = \prod_{i=1}^n f(x_i|\theta) \quad (4)$$

When likelihood function is differentiated in  $(\theta_i)$  then the value  $(\theta_1, \dots, \theta_n)$  such that..

$$\frac{\partial L(\underline{x}|\underline{\theta})}{\partial \theta_i} = 0, \quad i = 1, 2, \dots, n \quad (5)$$

To prove that  $\underline{x}$  maximun. It must be determined that:

$$\left. \frac{\partial^2 L(\underline{x}|\theta)}{\partial^2 \theta^2} \right|_{\theta=\underline{x}} < 0, \quad (6)$$

### 7. Mean Squared Error (MSE)

#### Definition 5

Mean square error (MSE) of the estimator  $T(\underline{x})$  parameter  $\theta$  is a function defined by  $E_{\theta}(T(\underline{x}) - \theta)^2$ . we can see that  $E_{\theta}(T(\underline{x}) - \theta)^2 = Var(T(x)) + (Bias(T(x)))^2$  with  $Bias(T(x)) = E_{\theta}(T(\underline{x})) - \theta$ . So the unbiased estimator is [2]:

$$E_{\theta}(T(\underline{x}) - \theta)^2 = Var(T(\underline{x})) \quad (7)$$

#### Definition 6

Estimator  $T^*$  called the best unbiased estimator for  $g(\theta)$  if  $ET^* = g(\theta)$  and for any other estimator  $T$  that satisfies  $ET = g(\theta)$  such that  $Var T^* \leq Var T$  for each  $\theta$ .  $T^*$  disebut "is called "uniform minimum unbiased variance estimator" or *UMVUE* from  $g(\theta)$  [1].

### 8. Cramer-Rao Lower Bound Theorem

#### Theorem 1

Let  $x_1, x_2, \dots, x_n$  are sample with density  $f(x|\theta)$  and  $T(\underline{X}) = T(x_1, x_2, \dots, x_n)$  is any estimate by  $ET(\underline{X})$  differentiable in  $\theta$ . Suppose density along  $f(x|\theta) = f(x_1, x_2, \dots, x_n|\theta)$  will meet [8]:

$$\begin{aligned} \frac{d}{d\theta} \int \dots \int h(\underline{x})f(\underline{x}|\theta)d\underline{x} \\ = \int \dots \int h(\underline{x}) \frac{\partial}{\partial \theta} f(\underline{x}|\theta)dx \end{aligned} \quad (8)$$

For each function  $h(\underline{x})$  with  $E[h(\underline{x})] < 0$  then

$$Var(T(\underline{X})) \geq \frac{\left[ \frac{d}{d\theta} ET(\underline{X}) \right]^2}{E \left[ \frac{\partial \log f(\theta)}{\partial \theta} \right]^2}$$

#### Theorem 2

Let  $x_1, x_2, \dots, x_n$  are i.i.d with density  $f(x|\theta)$  and  $T(\underline{X}) = T(x_1, x_2, \dots, x_n)$  any estimator of  $\theta$  with  $ET(\underline{X})$  function  $\theta$  differentiable. when the joint distribution of  $f(x|\theta) = \prod f(x|\theta)$  then [8]:

$$Var(T(\underline{X})) \geq \frac{\left[ \frac{d}{d\theta} ET(\underline{X}) \right]^2}{-nE \left[ \frac{\partial \log f(\underline{x}|\theta)}{\partial \theta} \right]^2} \quad (9)$$

### 3. Research Result

Application of Cramer Rao Lower Bound Theorem to determine the best unbiased estimator on discrete and continuous distribution functions. the discrete distribution functions used in this study are limited to the Poisson distribution, and Bernoulli distribution, while in the continuous distribution function on the Normal distribution and Exponential distribution, previously it has been proved these distributions belong to the exponential family.

#### 3.1. *UMVUE on Descrete Distribution*

##### a. *Poisson distribution*

Poisson distribution function with parameter  $\lambda$  is [6]:

$$f(x|\lambda) = \frac{e^{-\lambda} \lambda^x}{x!} \quad (10)$$

Maximun likelihood estimator

$$\hat{\lambda} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}$$

To determine the minimum unbiased estimator (*UMVUE*) of  $\lambda$ , it will first be determined the value of:

$$\frac{\left[\frac{d}{d\lambda}ET(\lambda)\right]^2}{-nE\left[\frac{\partial^2 \log f(x|\lambda)}{\partial \lambda^2}\right]}$$

where  $ET(\lambda) = \lambda$  and  $\frac{d}{d\lambda}ET(\lambda) = 1$ , using by MLE method obtained:

$$\log f(x|\lambda) = \log \frac{e^{-\lambda}}{x!} + \log \frac{\lambda^x}{x!} = \log e^{-\lambda} - \log x! + \log \lambda^x - \log x!$$

$$= \lambda \log e - \log x! + x \log \lambda - \log x!$$

$$\frac{\partial}{\partial \lambda} \log f(x|\lambda) = -1 + \frac{x}{\lambda}$$

$$\frac{\partial^2}{\partial \lambda^2} \log f(x|\lambda) = -\frac{x}{\lambda^2}$$

$$E\left[\frac{\partial^2}{\partial \lambda^2} \log f(x|\lambda)\right] = E\left[\frac{x}{\lambda^2}\right] = -\frac{1}{\lambda^2}ET(X) = -\frac{1}{\lambda}$$

then

$$\frac{\left[\frac{d}{d\lambda}ET(\lambda)\right]^2}{-nE\left[\frac{\partial^2 \log f(x|\lambda)}{\partial \lambda^2}\right]} = \frac{1}{-n\left[-\frac{1}{\lambda}\right]} = \frac{\lambda}{n}$$

Since  $E(\hat{\lambda}) = E(\bar{X}) = \lambda$  qualifies the unbiased estimator  $E(\hat{\lambda}) = \lambda$  then  $\hat{\lambda} = \bar{X}$  is the unbiased estimator.

$$Var(\hat{\mu}) = Var\bar{X} = \frac{\lambda}{n}$$

Unbiased estimator  $\hat{\mu} = \bar{X}$  reaching the lower bound of variance, ie:

$$Var(T(\hat{\lambda})) \geq \frac{\left[\frac{d}{d\lambda}ET(\lambda)\right]^2}{-nE\left[\frac{\partial^2 \log f(x|\lambda)}{\partial \lambda^2}\right]}$$

$$\frac{\lambda}{n} = \frac{\lambda}{n}$$

So:

$$\hat{\mu} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}, \text{ is the minimum variance unbiased estimator of } \lambda.$$

### b. Bernoulli distribution

Bernoulli distribution function with parameter  $\theta$  is [6]:

$$f(x|\theta) = \theta^x (1 - \theta)^{1-x}, \text{ for } x = 0,1 \text{ and } 0 \leq \theta \leq 1 \quad (11)$$

Maximum likelihood estimator

$$\hat{\theta} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}$$

To determine the minimum unbiased estimator (UMVUE) of  $\theta$ , it will first be determined the value of:

$$\frac{\left[\frac{d}{d\theta}ET(\theta)\right]^2}{-nE\left[\frac{\partial^2 \log f(x|\theta)}{\partial \theta^2}\right]}$$

where  $ET(\theta) = \theta$  and  $\frac{d}{d\theta}ET(\theta) = 1$ , using by MLE method obtained:

$$\log f(x|\theta) = \log \theta^x + \log (1 - \theta)^{1-x} = x \log \theta + (1 - x) \log (1 - \theta)$$

$$\frac{\partial}{\partial \theta} \log f(x|\theta) = \frac{x}{\theta}$$

$$\begin{aligned}\frac{\partial^2}{\partial \theta^2} \log f(x|\theta) &= -\frac{x}{\theta^2} \\ E \left[ \frac{\partial^2}{\partial \theta^2} \log f(x|\theta) \right] &= E \left[ \frac{x}{\theta^2} \right] = -\frac{1}{\theta^2} ET(X) = -\frac{1}{\theta} \\ \frac{\left[ \frac{d}{d\lambda} ET(\theta) \right]^2}{-nE \left[ \frac{\partial^2 \log f(x|\theta)}{\partial \theta^2} \right]} &= \frac{1}{-n \left[ -\frac{1}{\theta} \right]} = \frac{\theta}{n}\end{aligned}$$

Since  $E(\hat{\theta}) = E(\bar{X}) = \theta$  qualifies the unbiased estimator  $E(\hat{\theta}) = \theta$  then  $\hat{\theta} = \bar{X}$  is the unbiased estimator.

$$Var(\hat{\theta}) = Var \bar{X} = \frac{\theta}{n}$$

Unbiased estimator  $\hat{\mu} = \bar{X}$  reaching the lower bound of variance, ie:

$$\begin{aligned}Var(T(\hat{\theta})) &\geq \frac{\left[ \frac{d}{d\theta} ET(\underline{X}) \right]^2}{-nE \left[ \frac{\partial^2 \log f(x|\theta)}{\partial \theta^2} \right]} \\ \frac{\theta}{n} &= \frac{\theta}{n}\end{aligned}$$

So

$$\hat{\theta} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}, \text{ is the minimum variance unbiased estimator of } \theta.$$

### 3.2. UMVUE on Continuous Distribution

#### a. Normal distribution

Normal distribution function with parameter  $\mu, \sigma^2$  is [6]:

$$f(x|\mu, \sigma^2) = \frac{1}{\sqrt{2\pi\sigma}} e^{-1/2\left(\frac{x-\mu}{\sigma}\right)^2}, -\infty < x < \infty \quad (12)$$

Maximum likelihood estimator

$$\hat{\mu} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}$$

To determine the minimum unbiased estimator (UMVUE) of  $\mu$ , it will first be determined the value of:

$$\frac{\left[ \frac{d}{d\mu} ET(\mu) \right]^2}{-nE \left[ \frac{\partial^2 \log f(x|\mu, \sigma^2)}{\partial \mu^2} \right]}$$

where  $ET(\mu) = \mu$  and  $\frac{d}{d\mu} ET(\mu) = 1$ , using by MLE method obtained:

$$\begin{aligned}\log f(x|\mu, \sigma^2) &= \log \frac{1}{\sqrt{2\pi\sigma^2}} + \log e^{-1/2\left(\frac{x-\mu}{\sigma}\right)^2} \\ &= \log \sigma^{-1} + \log (\sqrt{2\pi})^{-1} + \log e^{-1/2\left(\frac{x-\mu}{\sigma}\right)^2} \\ &= \log \sigma^{-1} + \log (\sqrt{2\pi})^{-1} - 1/2 \left(\frac{x-\mu}{\sigma}\right)^2 \log e \\ \frac{\partial}{\partial \mu} \log f(x|\mu, \sigma^2) &= \frac{2x}{2\sigma^2} - \frac{2\mu}{2\sigma^2} = \frac{x}{\sigma^2} - \frac{\mu}{\sigma^2} \\ \frac{\partial^2}{\partial \lambda^2} \log f(x|\mu, \sigma^2) &= -\frac{1}{\sigma^2} \\ E \left[ \frac{\partial^2}{\partial \theta^2} \log f(x|\mu, \sigma^2) \right] &= E \left[ -\frac{1}{\sigma^2} \right] = -\frac{1}{\sigma^2} ET(X) = -\frac{1}{\sigma^2}\end{aligned}$$

$$\frac{\left[ \frac{d}{d\mu} ET(\mu) \right]^2}{-nE \left[ \frac{\partial^2 \log f(\underline{x}|\mu, \sigma^2)}{\partial \lambda^2} \right]} = \frac{1}{-n \left[ -\frac{1}{\sigma^2} \right]} = \frac{\sigma^2}{n}$$

Since  $E(\hat{\mu}) = E(\bar{X}) = \mu$  qualifies the unbiased estimator  $E(\hat{\mu}) = \mu$  then  $\hat{\mu} = \bar{X}$  is the unbiased estimator.

$$Var(\hat{\mu}) = Var\bar{X} = \frac{\sigma^2}{n}$$

Unbiased estimator  $\hat{\mu} = \bar{X}$  reaching the lower bound of variance, ie:

$$Var(T(\hat{\mu})) \geq \frac{\left[ \frac{d}{d\mu} ET(\mu) \right]^2}{-nE \left[ \frac{\partial^2 \log f(\underline{x}|\mu, \sigma^2)}{\partial \theta^2} \right]}$$

$$\frac{\sigma^2}{n} = \frac{\sigma^2}{n}$$

So

$$\hat{\mu} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}, \text{ is the minimum variance unbiased estimator (UMVUE) of } \mu.$$

### b. Exponential distribution

Exponential distribution function with parameter  $\theta$  is [6]:

$$f(x|\theta) = \frac{1}{\theta} e^{-\frac{x}{\theta}}, \quad x \geq 0 \tag{13}$$

Estimator maksimum likelihood

$$\hat{\theta} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}$$

To determine the minimum unbiased estimator (UMVUE) of  $\theta$ , it will first be determined the value of:

$$\frac{\left[ \frac{d}{d\theta} ET(\hat{\theta}) \right]^2}{-nE \left[ \frac{\partial^2 \log f(\underline{x}|\theta)}{\partial \theta^2} \right]}$$

Where  $ET(\theta) = \theta$  and  $\frac{d}{d\theta} ET(\theta) = 1$ , using by MLE method obtained:

$$\log f(x|\theta) = \log \frac{1}{\theta} + \log e^{-\frac{x}{\theta}} = \log \frac{1}{\theta} - \frac{x}{\theta} \log e$$

$$\frac{\partial}{\partial \theta} \log f(x|\theta) = -\frac{1}{\theta} + \frac{x}{\theta^2}$$

$$\frac{\partial^2}{\partial \theta^2} \log f(x|\theta) = \frac{1}{\theta^2} - \frac{x}{\theta^3}$$

$$E \left[ \frac{\partial^2}{\partial \theta^2} \log f(\underline{x}|\theta) \right] = E \left[ \frac{1}{\theta^2} - \frac{x}{\theta^3} \right]$$

$$= \frac{1}{\theta^2} - \frac{x}{\theta^3} ET(X)$$

$$= \frac{1}{\theta^2} - \frac{x}{\theta^3} \theta = -\frac{1}{\theta^2}$$

$$\frac{\left[ \frac{d}{d\theta} ET(\theta) \right]^2}{-nE \left[ \frac{\partial^2 \log f(\underline{x}|\theta)}{\partial \lambda^2} \right]} = \frac{1}{-n \left[ -\frac{1}{\theta^2} \right]} = \frac{\theta^2}{n}$$

Since  $E(\hat{\theta}) = E(\bar{X}) = \theta$  qualifies the unbiased estimator  $E(\hat{\theta}) = \theta$  then  $\hat{\theta} = \bar{X}$  is the unbiased estimator.

$$Var(\hat{\theta}) = Var\bar{X} = \frac{\theta^2}{n}$$

Unbiased estimator  $\hat{\theta} = \bar{X}$  reaching the lower bound of variance, ie:

$$Var(T(\hat{\theta})) \geq \frac{\left[ \frac{d}{d\theta} ET(\theta) \right]^2}{-nE \left[ \frac{\partial^2 \log f(x|\theta)}{\partial \theta^2} \right]}$$

$$\frac{\theta^2}{n} = \frac{\theta^2}{n}$$

So

$$\hat{\theta} = \frac{\sum_{i=0}^n x_i}{n} = \bar{X}, \text{ is the minimum variance unbiased estimator (UMVUE) of } \theta.$$

#### 4. Conclusion

Based on the results of the research, it can be concluded that the parameter estimator on the discrete distribution of poisson distribution and bernoulli distribution, as well as the continuous probability distributions of normal, and exponential distributions are unbiased and reach the lower bound of variance using Cramer Rao Theorem so it can be said to satisfy the minimum unbiased estimator (UMVUE). for further research can be done on other distributions especially that included in the discrete and continuous distribution.

#### Reference

- [1] Bruce and Cliford, 1990. *Mathematical Statistics*. Duxbury Press. California
- [2] George C and Roger L. B. 2002. *Statistical Inference*. Second Edition. Duxbury Press. California.
- [3] Freund, J.E. dan R. E. Walpole. 1987. *Mathematical Statistics*. Fourth Edition. Prentice-Hall, Inc. Englewood Cliffs. New York.
- [4] Khreshna. 2011. *Statistika Matematika*. F-Mipa Institut Teknologi Bandung
- [5] Lee J. B. and Max E . 1992. *Introduction to Probability and Mathematical Statistics*. Second Edition. Duxbury Press. California.
- [6] Nar H and Tuti G, 2009. *Pengantar Statistika Matematis*. Yrama Widya. Bandung.
- [7] Spiegel, M.R. B. 1982. *Probability and Statistics*. Schaum's outline Series. McGraw-Hill International Book Company. Singapore
- [8] Subanar, 1996. *Statistik Matematika II*, F-Mipa UGM, Yogyakarta.
- [9] Walpole, R.E. 1982. *Pengantar Statistik Edisi Ke 3*. PT. Garamedi Pustaka Utama Jakarta

# The Position of The Law The Verdict KPPU in System Indonesia of The Law

Nina Yolanda<sup>1</sup>

<sup>1</sup>FH.Universitas Palembang  
Email ninayolanda51@yahoo.co.id

**Abstract.** The phenomenon has grown and is supported by the presence of associated relations between the decision makers with the party efforts, either directly or indirectly, that more aggravate in situation. The implementation of national economics lack spur to the mandate of the constitution that is Article 33 UUD 1945, as well as tend to show the pattern of a very monopolistic. The businessmen near with elite authorization get the easies of profuse that impact to asymmetry of social. The emergence of conglomerate and a small group of powerful employers that is not supported by the spirit of entrepreneurship is one of the factors that resulted in the resilience of the economy to be very fragile and not able to compete. The pay attention to the situation and the conditions mentioned above, demanding us to examine the fund reorganize business activities in Indonesia, so that businesses can grow and develop in a healthy and right, that create a climate of healthy competition, as well as avoiding concentration of economic power on individuals or specific groups, another in the form practical monopoly and competition efforts is not healthy of damage society with contradiction with ambition of justice. In the principle of verdict to made CSBC is not bind for parties dispute. Because in formal or normative CSBC is not competent made the verdict and given doubt that is the judiciary. If seen from the verdict remove, that is not include in the verdict condemnator although the verdict of declarator. Therefore, the writer can be conclusion that position of the verdict remove by CSBC in system Indonesia of the law is not clear and confused. That is not clear because not arrange in distinct by Legislations, confuse because of the verdict can not input in the verdict condemnator although verdict declarator. The verdict to remove by CSBC only character entirely administrative not juridical technical that is verdict institute other outside the court that is verdict P4P, Bapepam, BPSK, institute Arbitration etc.

**Keywords:** *The Commission for the Supervision of Business Competition and Doubt.*

## 1. Introduction

### 1.1. Background

Development of economy in Long-Term Development First (LTDF) has result more progress, another with increase prosperity of society. Progress of development has achieve above, push by policy the development some sector, include policy of development in sector economy to pour in the Board Guidelines of State Policy (BGSP) and Five-Year Development Plan (FYDP), along with some the policy of economic other.

Although has more progress to achieve during LTDF, the indication with grown high economic, but still more challenge and problems especially in the development economic is not solved, in a row with existence inclination globalisation economics matters along with dynamic and development a business private.

The opportunity business to create for not making a decade ago in fact, the whole community able and can participate in the development some economic sector. Development business private in period, on the one hand of colour by various forms of the policy of the government is lacking right so that the market into distorted. Another side, development business private in the facts partly a big is realization from condition competition business is not healthy.

The phenomenon has grown and is supported by the presence of associated relations between the decision makers with the party efforts, either directly or indirectly, that more aggravate in situation. The implementation of national economics lack spur to the mandate of the constitution that is Article 33 UUD 1945, as well as tend to show the pattern of a very monopolistic.

The businessmen near with elite authorization get the easies of profuse that impact to asymmetry of social. The emergence of conglomerate and a small group of powerful employers that is not supported by the spirit of entrepreneurship is one of the factors that resulted in the resilience of the economy to be very fragile and not able to compete.

The pay attention to the situation and the conditions mentioned above, demanding us to examine the fund reorganize business activities in Indonesia, so that businesses can grow and develop in a healthy and right, that create a climate of healthy competition, as well as avoiding concentration of economic power on individuals or specific groups, another in the form practical monopoly and competition efforts is not healthy of damage society with contradiction with ambition of justice<sup>103</sup>

Therefore, to supervise the practice monopoly and competition effort unhealthy should be formed a institutions that have been instruction by the constitution that is The Commission for the Supervision of Business Competition (CSBC) for maintain regulation of the law and given protection sama for every parties business in efforts to create competition business healthy. CSBC is an institution the independent in spite of the influence of the government and the other party, the authority to conduct supervision of business competition and to impose sanctions. The sanction in the form of administrative measures, whereas criminal sanctions are the authority the court.

In formal CSBC is an institution the independent in operate of duty. However along the existence of the institution is still questioned the status of law whether including of the institution justice or not. Because in the Legislations No 5 of 1999 of the institution was not expressed assertively whether the authorities using *irah-irah* or not as it is the other justice.<sup>104</sup>

Along with it up, a very ironic is almost all the verdict CSBC canceled by The Court Country. The Administrative Court and Supreme Court .<sup>105</sup>

This certain caused by a very basic, because it is from the beginning has been no obscurity the position of the law CSBC in system the court in Indonesia.

### **1.2. Problems**

From the description of the author present in the background , that into problems in paper work this is (1) How the position of the law verdict CSBC in system of the law Indonesia? (2)As far as where the remove by CSBC have the power of bind for the parties dispute?

### **1.3. Method of the Writing**

Type of the research in this writing paper work is descriptions with normative approach. Main data resources is secondary data the writer from library in forms regulation of constitution along with literature relate with problems. After all collect data, then to analysis the descriptive qualitative, so that what is the problem in the paper can missed.

## **2. The Observation Of Review And The Framework Of The Theory**

### **2.1. The Observation of Review**

In various of country in world,<sup>106</sup> handling of the case practice monopoly and competition business unhealthy handled by institution especially, for example in America Serikat implementation of Constitution Anti Monopoly implemented by *The Justice of Departement dan Federal Trade Commision (FTC)*. In the practical, this both in collaboration and mutual complete in their duties carry out of Constitution Anti Monopoly.

---

<sup>103</sup> Penjelasan Undang-undang Nomor 5 Tahun 1999 tentang *Larangan Praktek Monopoli dan Persaingan Usaha Tidak Sehat*.

<sup>104</sup> Marwah M. Diah dan Joni Emirzon, *Aspek-Aspek Hukum Persaingan Bisnis Indonesia (Perjanjian yang dilarang, perbuatan yang dilarang dan posisi dominant)*, Penerbit Unsri, 2003, hlm 75.

<sup>105</sup> Sebagai contoh yang dikemukakan dalam makalah oleh Dr. Iur Silalahi, SH., LLM. Pada diskusi panel *tentang competition law & practice* tanggal 20 Desember 2006 yang diselenggarakan oleh CSIS, kasus Indomaret dan PT. Indomobil, Mahkamah Agung membatalkan putusan Pengadilan Negeri sekaligus membatalkan putusan KPPU batal demi hukum.

<sup>106</sup> Marwah M. Diah & Joni Emirzon, *Op.Cit*, hlm 75

In Japan, for perform of Constitution Anti Monopoly established (*Fair Trade Commission*), this commission in administrative under the authority of the Prime Minister. However based on the determine of Constitution, Chairman of FTC and commission agent have freedom in operate duties maintain of the law anti monopoly. Chairman and commission is person have skill in sector of the law and economy. The appointment and discharge chairman of FTC in confirmation by caesar Japan.

In Australia, implementation of Constitution Anti Monopoly implementd by (*Trade Practice Commission/TPC*). TPC get mandate for operate of Constitution and have authority for carry out investigation, include investigation deign with complaint offense of Constitution Anti Monopoly.

In Jerman in responsible for the implementation of the Legislations Kartel is (Federal Carter Office/FCO) to founded by every the part of Country. The main of duty from (Federal Carter Office/FCO) is about problems to relate with restriction about competition of healty in the part of Country. Especially investigation about merger of company handled by FCO in collaboration in independent. This office have nine division to each division have authority in sector economic of certain. With thus, it office can resolve all the activities in sector economic and attitude of competition company from companies to work in sector it. The main of duties institute it is carry out investigation and collect of data from company of suspicious carry out practice of business dishonest even on the permission the court competent for carry out ransacking of company and confiscate a goods of prove.<sup>107</sup>

How in Indonesia?, Based on the Legislations no 5 of 1999 about Prohibition of Monopoly and Practice of Business Unhealthy, institute given authority for handle the case of practice monopoly and competition of business unhealthy is Commission for the Supervision of Business Competition (CSBC). This institute to form based on the Legislations No 5 of 1999 and The Verdict of President No 75 of 1999. While the way handle the case to arrange in Article 38 untill with Article 46 of Legislations No 5 of 1999 in connection with The Verdict of CSBC No : OS/KPPU/Kep/IX/2000.

According to Article 30 Paragraph 2 UU No. 5 of 1999, commission is an institute independent regardless from influence and authorization of government along with other party. Commission consist of chairman person member, a vice double as member and at least 7 (seven) members. The member of commission appointed and stopped by president on the agreement PRC, while the time of position members of the commission is 5 (Five) years and can back appointed one of the position to be continue.

## **2.2. Theory of Framework**

There are some theory to relevant with about strength to bind the verdict, that is :<sup>108</sup>

### **1. The Theory of Law Material**

According to this theory, strength for the verdict usual mentioned "gezag van gewijsde" have character of the law material, therefore organize about authorit and obligations the court of justice, for example decide, delete or change. According to this theory, that verdict can to the surface or abolish relationship of the law. To mention as study of the law material because given cause to character of the law materil in the verdict, to remember that verdict it only bind parties and not bind third parties. According to Professor Sudikno Mertokusumo, this theory not just because of not give the authority to maintain a person's right to the third.

### **2. The Theory of Law Event**

According to this theory, the verdict not only resources of the law material, but the source of on the power of prosesuil, who was in a verdict avowed as the owner that his with medium prosesuil about his opponent can act as the owner. This theory very narrow, cause the verdict not solely only source authority prosesuil, but also aim to determine definitely about relationships of the law is a basic of dispute.

### **3. The Theory of Law Authentication**

According to this theory, the verdict is a proof of what is set forth that have a binding force because according to this theory of proving the opponent against a decision which has obtained

---

<sup>107</sup> Abdul Hakim Garuda Nusantara dan Benny K. Harman, *Analisa dan Perbandingan Undang-Undang Anti Monopoli (UU Larangan Praktek Monopoli dan Persaingan Usaha Tidak Sehat)* PT. Elek Media Komputindo dan Bank Naskah Gramedia, Jakarta, 1999, hlm 109.

<sup>108</sup> Sudikno Mertokusumo, *Hukum Acara Perdata Indonesia*, Liberty, Yogyakarta, 1988, hlm 178-181

permanent law force which is definitely not allowed. This theory to include ancient has not a lot of followers.

#### **4. The Theory of Binding the Parties on the Verdict**

Binding the parties on the verdict can have a positive meaning and the meaning of negative. The means a positive of the binding force on the verdict is that what has been terminated by the parties is applicable as a positive right, what has been terminated by judge must opinion right : “res judicata pro veritate habetur”, binding the opponent not possible. Binding the parties it basic on the Article 1917 and 1920 KUH Civil. While means a negative for the binding force on the verdict is that may not break the case ever decided previously between the parties same with about main of the case same (nebis in idem, Article 134 Rv).

A replay of this action will not have law effect.

#### **5. The Theory of Force of the Law of Definite**

A verdict obtain force of the law of definite or constant (*inkracht van gewijsde*) if not again efforts of the law usual available, include efforts of the law usual that is an opposition, appeal and cassation. With obtain force of the law of definite and constant, so that verdict it's not again can change, although by a higher court, except with efforts of the law special, that is request civil and opposition the third parties.

From the theorist above, can be used as the basis for determining the existence of a verdict made by an institution, if not fulfill requisite that thing not verdict an institution the court.

### **3. Discussion**

After the formation of CSBC, has some the case to finish and disconnected by CSBC, some between is a verdict which controversial and invitation argue the expert about the position or status of the law of verdict of CSBC, if have a binding force that is a verdict of institution the court. The main cause of the emergence of this problem is Constitution No 5 of 1999 as umbrella provision maintenance of the law competition efforts in Indonesia does not explicitly to clarify of CSBC is an institution juridical to replace the actor court in the cases of efforts competition.

Will not other parties, Constitution has given to CSBC the authority opinion similar of institution the court. The authority to include authority for investigate and break doubt administrative for the parties reputed contravene of Constitution No 5 of 1999.

On the basis is then used as the argument to consider of CSBC as institution have an authority similar the institution juridical, with other word of CSBC same with operate guasi juridical, in the mean of CSBC authority for operate the function similar with function institution the court, that is checking and decide.

For the discussion how to the position or status of the law on the verdict of CSBC, necessary to know previously construction of the law, the character and implementation on the verdict issued by CSBC as implied in Constitution No 5 of 1999.

#### **1. The Construction of the Law on the Verdict of CSBC**

In the article 36, determine that of CSBC given the authority for decide and sets there or not infraction against of Constitution with dropped sanctions administrative against the report, In here then to appear of the problmes, that is in the Constitution No 5 of 1999 not settle in distinct about format or the form on the verdict of CSBC, that to the surface interpretation or confusion of against the verdict of CSBC.

The difference with construction of the law on the verdict other institute, for example arbitration. In the Constitution No 30 of 1999 about Arbitration, in the Article 54 paragraph 1 of constitution, with clear to determine of the form or format the verdict to issued by arbitration of institution. In this Article, the verdict arbitration must to load:<sup>109</sup>

“ Head on the verdict, nickname the parties which dispute, a brief description of the dispute the establishment of the parties, name is Jengfap and arbitration address, considieration and conclusion of committee the arbitrage about totality of dispute, opinion in each arbitrage in things against difference opinion in committee of arbitrage, injuction on the verdict, the place and date on the verdict and signature the arbitrage or arbitrage committee”.

---

<sup>109</sup> Pasal 54 ayat 1 Undang-Undang Nomor 30 Tahun 1999 tentang *Arbi trase dan Penyelesaian Sengketa*.

## **2. The Character on the Verdict of CSBC**

If viewed from the character on the verdict to issued by CSBC, The Constitution No 5 of 1999 determine if the verdict to issued by CSBC the explain to prove guilty of the infraction against the Constitution No 5 of 1999, so that commision the authority in the verdict dropped sanctions in the form of action by CSBC does not authority using irah-irah, so he does not have the power of exsecutorial.

## **3. The Implementation on the Verdict of CSBC**

From the aspect of implementation, there are some on the verdict of CSBC does not work by punished or punished not implementation on the verdict, so often in the case to character content of the parties the winner only got a difficult to force the victory opponents for fulfill the obligation to in the verdict.

The doubt and confusion in the implementation of the execution verdict of CSBC cause by not clear for the format or form on the verdict to issued by CSBC. In the Constitution No 5 of 1999 also not settle in distinct about using words irah-irah. Based on theory and determine of constitution that verdict of judge have power exsecutorial 70. The requisite on the verdict have power exsecutorial is doing "For the Sake of Justice Based on An Impersonal Mighty Esa".

There are two character to contains in the verdict to got execution, that is : (1). The Verdict on Condemnator, that is verdict to contains action of penalization against self defendant, in general agains in the case contentiosal. The case of contentiosal a dispute or case to character party and there is party of defendent to submit accustion against defendent party, with process an examination in contradictoir that is plaintiff party and defendent have right for responsible answer. (2) The Verdict on Declarator, that is verdict which injUNCTION or decision only contains declaration of the law without together with condemnation. In generally, this form of verdict against in the case to form volunteer that is case to form petition unilaterally, for example petition to submit request to court, so that appelant have position of certainty of the law bind on the self appelant alone, therefore verdict declarator dont have power of the law exsecutorial.

To seen from character to contain in verdict like writer to express above, so that verdict of CSBC can not input right in the verdict condemnator although verdict of declarator because verdict of CSBC only character administrative only.

## **4. Closing**

### **4.1. Conclusion**

In principle on the verdict to made of CSBC does not bind for the parties to dispute. Because in formal or normative of CSBC not authority made verdict and given sanction that is justice. If seen from verdict to issued, does not include in the verdict of condemnator although verdict of declarator. Therefore can writer to conclusion that position on the verdict to issued by CSBC in system of the law of Indonesia does not clear and confused. Does not clear because not settle in distinct by Constitution, confused because verdict can not input by CSBC only character administrative not juridical tehcnical that is verdict other institute out the court like is verdict P4P, Bapepam, BPSK, institute Arbitration etc.

### **4.2. Suggestion**

The Constitution No 5 of 1999 has not obtain until 7 years more found weakness and lack, one of about CSBC. Therefore it is better if made a change or revision of constitution so this business competition laws in Indonesia can be enforced properly.

## **References**

### **Books**

- [1]. Abdul Hakim Garuda Nusantara dan Benny K. Harman, *Analisa dan Perbandingan UU Anti Monopoli (UU Larangan Praktek Monopoli dan Persaingan Usaha Tidak Sehat)*, PT. Elek Media Komputindo dan Bank Naskah Gramedia, Jakarta, 1999.
- [2]. Marwah M. Diah dan Joni Emirzon, *Aspek-Aspek Hukum Persaingan Bisnis Indonesia (Per/anjian yang dilarang, perbuatan yang dilarang dan Posisi Dominan)*, Penerbit Unsri, 2003.
- [3]. Sudikno Mertokusumo, *Hukum Acara Perdata Indonesia*, Liberty, Yokyakarta, 2013.

**Constitutions**

- [1]. Undang-Undang Nomor 5 Tahun 1999 tentang Larangan Praktek Monopoli dan Persaingan Usaha tidak Sehat
- [2]. Undang-Undang Nomor 30 Tahun 1999 tentang Arbitrase dan Penyelesaian Sengketa

# Sexual Abuse (Study of Child Sexual Abuse in Poleang District Bombana Regency)

Nursalam<sup>1</sup>, Darman Manda<sup>2</sup>, Suardi<sup>3</sup>

<sup>1</sup>Universitas Muhammadiyah Makassar., Email : *nursalam.h@unismuh.ac.id*

<sup>2</sup>Universitas Negeri Makassar., Email : *darmanmanda@unm.ac.id*

<sup>3</sup>Universitas Muhammadiyah Makassar., Email : *suardi@unismuh.ac.id*

**Abstract.** Victims of under-age fornication are the victims of those around them, which have profound and long-lasting impacts if failed to addressed. This study aims are (i) to analyze the causal factors of child abuse; (ii) analyze the impact of fornication on minors; and (iii) analyzes how the role of nuclear families in empowering victims of child sexual abuse. It use descriptive qualitative research method and conducted in Poleang District of Bombana Regency. The informants were determined by purposive sampling of 15 people. This study focuses on the factors, impacts and roles of families in rehabilitating minor victims of child sexual abuse. The instruments used are notebook, tape recorder, camera and observation sheet. Data collection techniques used are observation techniques, interviews and documentation. Data validity technique using data triangulation technique. The results of this study indicate that (i) factors causing the occurrence of abuse are caused by internal factors (family) such as lack of supervision from parents, lack of early child sex education, peer and environmental influences (ii) sexual abuse such as physical, psychological and social impact. (iii) the role of the family in rehabilitating child sexual abuse victims through affective, protective, and recreational functions.

**Key words:** *Sexual abuse, child sexual abuse, family role*

## 1. Introduction

Definition of children based on Constitution No. 23 of 2002, is a person who is under 18 years of age, include a child who is still in the womb. Children who are the next generation (Rahman, A. 2005). Certainly need to get a good education therefore their potentials will grow rapidly and develop into human beings who have a variety of life beneficial abilities and skills. The reverse of a country is determined by the previous generation. The child is the investment and hope of the nation's future and also the successor of future generations. In the life cycle, the childhood is the phase where the child experiences growth that determines his future. It is vital to optimize the development of the child, because in addition to crucial also at that time the child requires attention and affection of parents or family so that the basic rights and needs of children can be met appropriately. Children should be able to grow and develop into healthy, physical and spiritual beings, intelligent, happy, high moral and praiseworthy, because they are the future assets that determine the civilization quality (Sari, R., Nulhaqim, SA, & Irfan, M. 2015). Therefore, the family as the smallest community unit has a strategic role in the effort to foster and educate the children's personality. The genuine and sincere affection of the parents is very much useful for the survival of the next human life, later they will be useful to others and can bring the surname even to the State (Napis, A. D. 2017).

According to Sri Lestari in Holik, E. A. (2016) family has several characteristics, namely: (1) consists of two or more individuals bound by blood relations, marriage or adoption; (2) family members usually live together or if separately they still pay attention to each other; (3) family members interact with each other and each has a social role: husband, wife, child, brother, and sister; (4) has the purpose of creating and maintaining culture, improving the physical, psychological, and social development of members. Family act as an educational institution and the community must play a role and responsible in providing appropriate supervision so that they will create a strong and quality generation. According to Syaodih, E., & Agustin, M. (2014) any problems faced by children is an issue that cannot be separated from parents role at home. Family is the first environment known to the child and is instrumental in the development of the child. Throughout the family, child learns to

respond to others, knows himself, and at the same time learns to manage his emotions (Setyowati, Y. 2013). It shows a very large family role in the children education.

However, today in the world of children there are various negative phenomena that quite disturb. The various social aberrations present in the society are becoming more and more and most of them are in the children development. Developmental deviation is still a problem for children in Indonesia (Susanty, A., Fadlyana, E., & Nataprawira, H. M. 2014).

Although the law on deviation has been issued, the criminal act of obscenity according to Constitution No. 23 of 2002 consists of two sides, namely from the side of the defendant and from the side of the victim of the criminal act of abuse by providing rehabilitation efforts, protection from identity discreet by mass media and to avoid labeling, giving guarantee of safety for victim-witnesses and expert-witnesses either physically, mentally, as well as social and accessibility to get information about the progress of the case (Rahmawati, V. 2010). As already amended by Constitution No. 35 of 2014 on child protection can be exercised by the Panel of Judges by applying Article 82 of the Child Protection Act that is at least 3 (three) years (SOENYOTO, RA 2016), if the defendant is found to meet the objective and subjective elements (PUTRI, R. N. A. K. (2015) ) But the perpetrators of social aberrations still dare to carry out any action wherever, whenever and to anyone, especially children. One is a matter of sexual harassment. Such as cases of child sexual abuse that occurred in Jakarta International School (JIS) (Sari, R., Nulhaqim, SA, & Irfan, M. 2015). In Medan, a father aggressively abused his 18-month-old daughter. In Kukar, an elementary school teacher became a suspect of a sodomy case against a student. In Cianjur, a pedophilia involves an elementary school teacher at the Al-Azhar Foundation. While in Aceh, a police officer is arrested after kidnapping five boys (Noviana, I. 2015). Particularly in Paleang District Bombana Regency, based on the results of early observation, occurred number of cases of sexual harassment committed by people close to the victim. The Commission on Child Protection (KPAI) on the crime of child abuse and sexual abuse by the closest children is increasingly troubling. It indicates that more child sexual abuse are perpetrated by people around the child. (PUTRI, R. N. A. K. 2015).

Abuses against children is a coercion of sexual behavior towards children of both the opposite and the same gender. Various kinds of obscenity consists of exhibitionism, voyeurism, kissing by inserting the tongue into the child's mouth, fondling, fellatio and cunnilingus, pornography, and inserting fingers, objects or genital organs of the child's genitals (Indriati, E. (2001). Patricia A. Moran in *Slayer of the Soul* book in Sari (2015) says, according to research, victims of sexual harassment are boys and girls aged infants up to age 18. Sexual harassment or abuse today is an important issue to discuss. Ironically, the average victims of sexual harassment or violence are children as a generation of people who are in desperate need of help and support from those around them such as the family. Therefore, family is one of the central institutions that possess a very important role to rehabilitate the victims of child abuse.

## **2. Research Method**

The study titled the role of families in rehabilitating child sexual abuse in Poleang District Bombana Regency. This research used descriptive qualitative research. Sampling technique used in this study was purposive sampling. Where purposive sampling is by selecting directly informants or respondents based on the criteria or which are expected to answer or provide information about the required researcher. The categories of informants used in this study are key informants, prime informants, and additional informants. The focus of this research is the factors of obscenity, the impact of obscenity, and the role of the family in rehabilitating child victims of obscenity both the nuclear family and extended family. In the research instrument, the main instrument is the researcher himself using the instrument in the form of interview guides, observation, document source, documentation (camera) as well as personal computer (PC). Data analysis through stages of composing, editing, classifying, and then elaborating to get conclusions. Technique validity of data used is triangulation technique, time triangulation, and triangulation of data source.

### **3. Discussion**

#### **3.1. Causative Factors of Child Sexual Abuse**

##### **a. Lack of Parental Supervision**

Lack of supervision from parents gives much impact to the child's life. Parents who have never taught a child how to behave with a new person make it vulnerable to child abuse. Various other research results also show that the lack of parental supervision as a factor causing child sexual abuse (Harun, R. 2015, Nurrahmi, H. 2015, Handayani, D., Kuswardhani, SH, & Hum, M. 2016, Mulya, RP 2017, Julva, A. 2017, Annisa, F. 2017). The offender takes advantage of the innocence of a child who is not careful of strangers. Parental negligence in observing child's friends is also make child become more free and make it exposed widely of various deviances in society and also make him/her the target of deviance of the perpetrators.

##### **b. Absence of Sex Education**

Sexual education is a way of teaching or education that can help children understand their sexual position in society. Thus sexual education aims to explain all things related to sex and sexuality in a reasonable form. In this case, sexual education should first be given by parents, even many parents who intensively provide sex education to their children (Kulsum, U. 2013). Early sexual education from parents is needed by a child so that they better understand about sexuality they have started from what can and should not be done when it relates to their sexuality. Sex education needs to be given in early ages because it is associated with the human sexual libido itself and other considerations, sex education is given earlier because the basic human character was formed in childhood (Syaodih, E., & Agustin, M. 2014). Broadly speaking, sex education is given from an early age (and in adolescence) with the following goals (Michael Reiss-J. Mark Halstead, 2006): (1) Helping children to know biological topics such as growth, puberty, and pregnancy; (2) Preventing children from acts of violence; (3) Reduces guilt, shame, and anxiety due to sexual acts; (4) Prevent underage girls of pregnancy; (5) Encouraging good relationships; (6) Prevent underage youth from engaging in sexual intercourse; (7) Reducing cases of infection through sex; and (8) Helping young people to ask about the role of men and women in society. Therefore, this sex education serves to protect children from the threat of people who want to take advantage of their helplessness and lack of understanding about all things related to their sexuality. The results of Katherine's research in Syaodih, E., & Agustin, M. (2014), shows that women who have received sex education at an early age, 57% are happily married. Other research results indicate that appropriate sex education at an early age is necessary to prevent sexual deviance behavior (Abidin, A. A., & Luthfi, M. (2016).

##### **c. Hang-Out Crowd**

In this study, children who become victims are aged 14-15 years, so it can be said that they are children while passing through their teenagers. Teenage is a period where a child will seek to find his identity. Rahma, A. N. (2012). Children who undergo adolescence usually have a very large curiosity so that in their association is not too directional. Most teenagers will choose their peers to be somewhat older than themselves because adults are considered more experienced in everything. A social friend has a direct influence on the adolescent self (Soetjningsih, CH (2008) .The involvement of a child in this association often plays a child in free sex. The development of teenagers association, the rampant circulation of drugs, the security of metropolitan and regional (Maslihah, S. 2011). In addition to causing children to be perpetrators of various deviances, intercourse also often causes children to be victims of the perpetrators of deviance, including child sexual abuse.

##### **d. Offender's Personality Disorder**

The main factor that makes children vulnerable to sexual harassment is the characteristic personality that deviates from the perpetrators of sexual harassment, even if anyone can be a perpetrator of sexual violence against children or pedophiles. Noviana, I. (2015). The perpetrator of sexual violence is usually a very normal figure by naked eye, very difficult to distinguish from normal people in general. Even perpetrators of irregularities do not always violate the norm, they usually violate one norm but adhere to the other (Ahriani, A. 2016). The characteristic abnormalities of the perpetrators are the ones that make it difficult to

distinguish normal people in general, so that people are easily deceived. Perpetrators of sexual violence against children are not only committed by people who have personality disorder, but not a few also perpetrators of violence is done by normal people. It is also appropriate to be disclosed by Forza Psychologist Reza Indragiri Amriel who explains that not all sexual violence in children is carried out by adults who have a sexual orientation in children, but can also occur with the perpetrators of normal adults (Noviana, 2015). In addition, sexual violence perpetrators are those who are close to child victims of sexual abuse. The perpetrators of sexual violence against children are generally people who are known and trusted child (Maslihah, S. 2013). According to Paramastri, I., & Priyanto, M. A. (2010) in his research The perpetrators of sexual violence in this child are generally known as children (66%) including their own parents (7.2%).

### **3.2. Repercussions of Child Sexual Abuse**

#### **a. Physical Repercussion**

Children who became victims of obscenity in Poleang District Bombana Regency have a physical repercussion on their body, such as bleeding or pain. Moreover, the type of obscenity experienced by the child is a type of "sodomy". Sodomy is the anal intercourse to get the satisfaction of one's sexuality (Mawardi, M. 2017). Perpetrators engaging in sexual activity in places that should not certainly not a common thing and a negative impact. Moreover adults who do that against minors who certainly the child's vital organs have not grown perfectly like adults let alone child victims of sexual violence get coercion to give a very fatal impact. The impact is like pain when defecation, rectal anus, and the worst is HIV/AIDS disease.

#### **b. Psychological Repercussion**

Physically, children who become victims of abuse in District Poleang Bombana Regency, may not be much to worry about. But the most noteworthy impact is that they are experiencing a prolonged psychological impact if not addressed properly. The psychological impact experienced by a child due to sexual violence is usually a prolonged trauma. The impact of trauma due to sexual violence experienced by children, among others: betrayal or loss of confidence of children against adults (betrayal); traumatic sexualization; feel powerlessness; and stigmatization (Noviana: 2015). According to Roosa, Reinholtz, Angelini, (1999) that the effects of sexual violence against children include guilt and self-blame, the shadow of events in which children receive sexual violence, nightmares, insomnia, fear of abuse-related matters (including objects, smells, places, doctor visits, etc.), self-esteem problems, sexual dysfunction, chronic pain, addiction, suicidal injury, suicide, somatic complaints, depression. In addition, there are psychological disorders such as post-traumatic stress disorder, anxiety, other diseases (including personality disorders and dissociative identity disorder, tendency to revictimize in adulthood, bulimia nervosa, physical injury to children (Levitan, Rector, Sheldon, & Goering, 2003; Messman-Moore, Dinwiddie, Heath, Dunne, Bucholz, Madden, Slutske, Bierut, Statham et al., 2000).

#### **c. Social Repercussion**

Aside from the physical and psychological repercussions experienced by children as a result of obscenity in Poleang District Bombana Regency, another common impact is social repercussion. Social repercussion is the impact that strikes on the child's social life after the abuse occurs. The social repercussion is to feel embarrassed to associate with others, even the shame experienced by the victim's family, has a bad stigma towards him that causes him embarrassed to mingle outside the home and make the child more closed to others than ever before that friends sebayannya more in adults. Betrayal or loss of confidence of children against adults (Noviana, I. 2015). Children who are victims of sexual violence even in childhood have the potential to become perpetrators of sexual violence later on as stated by Weber and Smith in Maslihah, S. (2013).

### **3.3. Role of Nuclear Family in Rehabilitating Victims of Child Sexual Abuse**

Families provide social rehabilitation for victims of child sexual abuse which can be conducted in various ways. The results showed that the rehabilitation of children conducted by the family is done by executing affective, protective and recreational affections of the families of children. Rehabilitation of social behavior consisting of mental coaching.

**a. *Affective Fuction***

Children who are victims of child sexual abuse experience psychological trauma resulting from sexual violence they do not want in Poleang District Bombana Regency. This is not just a short-term and long-term repercussion. For short-term such as physical effects such as bleeding or pain, while long-term as a psychological impact such as the shame for victim and family. Noviana, I. (2015) in his research on child sexual abuse: its impact and treatment reveal that child sexual abuse will have a long-term impact, as well as impact on later health problems, as well as with prolonged, even adult trauma such as treason or loss of the child's belief in the adult (betrayal); traumatic sexualization; feel powerlessness; and stigmatization. The trauma experienced by child sexual abuse is a child's nightmares, embarrassed to associate with those around them including the family, which leads to the ineffectiveness of a child in activity, such as activity in the formal environment (school), nonformal, even family (informal). Therefore, child sexual abuse not only suffer in physical but also suffer psychically and socially. At times like that a child desperately needs the affection and attention of the figure of the person they trust the family. Because every child has the right to protection, care, compassion (Wahyuni, A. P. 2014). In order for his personality to grow optimally and harmoniously, children need love and understanding (Rahmawati, V. 2010). Because of that parents have an obligation in educating, supervising, and providing love, support or support to children who have become victims of abuse (Harun, R. 2015). Families with affective functions should really run the function so that a child can still feel the comfort and affection. The affective function of this family is indispensable in helping to restore a child who has been victimized by abuse. To recover the child from the psychological disturbance he suffered as a result of obscenity requires the affective function of a family.

**b. *Protective Function***

Family in Poleang District Bombana Regency provides protective function not only serves to protect the physical family members of the family but also serves to protect the psychological of each family member for victims of child abuse. Generally families and friends who know that some of their members are experiencing violence will try to help by all means (Astuti, P. 2002). The abuse of a child also needs to be addressed as soon as possible therefore it does not become a prolonged psychological trauma. The connection with the protective function that is owned by the family here in protecting the child in order to recover from psychological trauma is done by keeping the events of children from the surrounding people including the child's peers so that children will still feel comfortable with people around and do not feel excluded by others. Victims find it hard to trust others to keep their sexual violence confidential. Noviana, I. (2015).

**c. *Recreative Function***

The family function in Poleang District Bombana Regency aims to provide a fresh and happy atmosphere to victims of sexual abuse child sexual abuse in the family environment. Recreational function is run to seek entertainment for family members, one of which is done by the family is to take their children out of the area and even stay a while outside the city. Much is done by every member of the family to perform the recreative function. Recreational-educative, needs to be done in order to eliminate the saturation, fatigue, and sadness experienced by the victim (Anggraini, A. D. 2017).

**4. Conclusion**

1. Factors causing abuse of underage children is lack of supervision from parents, the lack of early sex education to children, association and sexual abnormalities of the perpetrators.
2. The repercussion of abuse is viewed from the child's physical sense of pain in the limbs that have obscenity. The repercussion on the child's psychological decline in the effectiveness of children and make the child more closed to others. While viewed from the social repercussion, child who became a victim of obscenity to be embarrassed to mingle and interact with others and the emergence of feelings ostracized by others.
3. The role of the victim's parents in rehabilitating children is by running family functions such as affective function, protective function, recreative function.

## References

- [1]. Abdussalam, R. dan Adri Desasfuryanto. (2016). Hukum Perlindungan Anak. Jakarta: PTIK.
- [2]. Abidin, A. A., & Luthfi, M. (2016). Urgensi Pendidikan Seks Pada Siswa Madrasah Ibtidaiyah Dalam Upaya Pencegahan Perilaku Penyimpangan Seksual Di Kabupaten Jombang. *Jurnal Ilmiah Didaktika*, 17(1), 18-37.
- [3]. Ahriani, A. (2016). Fenomena Sosial Gaya Hidup Lesbian di Kampoeng Popsa Kota Makassar (Doctoral dissertation, Universitas Islam Negeri Alauddin Makassar).
- [4]. Anggraini, A. D. (2017). Penanganan anak korban kekerasan seksual di Pusat Pelayanan Terpadu (PPT) Seruni Kota Semarang (analisis azaz–azaz dan fungsi bimbingan konseling Islam) (Doctoral dissertation, UIN Walisongo).
- [5]. Annisa, F. (2017). Penegakkan Hukum Terhadap Anak Yang Melakukan Tindak Pidana Pencabulan Dalam Konsep Restorative Justice. *ADIL: Journal of Law*, 7(2), 202-211.
- [6]. Astuti, P. (2002). Kemandirian dan Kekerasan terhadap Istri. *Buletin Psikologi*, 10(2).
- [7]. BPS. (2014). Kabupaten Bombana dalam Angka. Bombana: Badan Pusat Statistik Kabupaten Bombana
- [8]. Darwis (2013). Pembinaan Sebagai Upaya Rehabilitasi Sosial Pengguna NAPZA (Studi pada Lapas Narkotika Kelas IIA Sungguminasa Gowa). *Dialektika Kontemporer*, 1(1).
- [9]. Dinwiddie, S., Heath, A. C., Dunne, M. P., Bucholz, K. K., Madden, P. A., Slutske, W. S., ... & Martin, N. G. (2000). Early sexual abuse and lifetime psychopathology: a co-twin–control study. *Psychological medicine*, 30(1), 41-52.
- [10]. Handayani, D., Kuswardhani, S. H., & Hum, M. (2016). Perlindungan Hukum Terhadap Anak Sebagai Korban Tindak Pidana Pelecehan Seksual (Studi Kasus Di Polres Ngawi) (Doctoral dissertation, Universitas Muhammadiyah Surakarta).
- [11]. Harun, R. (2015). Analisis Yuridis Tentang Tindak Pidana Pencabulan Anak. *LEX CRIMEN*, 4(4).
- [12]. HOLIK, E. A. (2016). Pengembangan Religiositas Anak melalui Pendidikan Agama Islam dalam Keluarga. *Tsamrah al-Fikri| Asosiasi Mahasiswa Program Pascasarjana IAID*, 10.
- [13]. Indriati, E. (2001). Child sexual abuse (pencabulan terhadap anak): tinjauan klinis dan psikologis. *Berkala Ilmu Kedokteran*, 33(2001).
- [14]. Ivo noviana. (2015). Kekerasan Seksual Terhadap Anak: Dampak Dan Penanganannya. *Kementrian Sosial RI*, 1(1), 13-28.
- [15]. Julva, A. (2017). Peranan Penyidik Dalam Penanggulangan Tindak Pidana Pencabulan Terhadap Anak Tuna Rungu. *Jurnal Poenale*, 5(2).
- [16]. Kulsum, U. (2013). Intensi Dan Perilaku Orang Tua Dalam Memberikan Pendidikan Seks Pada Anak Usia Dini (Studi Deskriptif Pada Ibu-Ibu Di Kelurahan Sekaran Kecamatan Gunungpati Kota Semarang). *Developmental and Clinical Psychology*, 2(1).
- [17]. Levitan, R. D., N. A. Rector, Sheldon, T., & Goering, P. (2003). "Childhood adversities
- [18]. Maja Simarmata. (2013). Proses Rehabilitasi Terhadap Anak Sebagai Korban Kekerasan Seksual. Universitas Atma Jaya Yogyakarta, 1-15.
- [19]. Maslihah, S. (2011). Studi tentang hubungan dukungan sosial, penyesuaian sosial di lingkungan sekolah dan prestasi akademik siswa smpit assyfa boarding school subang jawa barat. *Jurnal Psikologi Undip*, 10(2), 103-114.
- [20]. Maslihah, S. (2013). Play Therapy dalam Identifikasi Kasus Kekerasan Seksual terhadap Anak. *Jurnal penelitian psikologi*, 4(1).
- [21]. Mawardi, M. (2017). Penyimpangan Seksual Dalam Hubungan Suami Istri Perspektif Hukum Islam Dan Undang-Undang Nomor 23 Tahun 2004 Tentang Kekerasan Dalam Rumah Tangga (KDRT). *QIYAS*, 2(2).
- [22]. Messman-Moore, T. L., & Long, P. J. (2000). Child sexual abuse and revictimization in the form of adult sexual abuse, adult physical abuse, and adult psychological maltreatment. *Journal of interpersonal violence*, 15(5), 489-502.
- [23]. Michael Reiss- J. Mark Halstead, (2006) Pendidikan Seks Bagi Remaja: dari Prinsip ke Praktik. Yogyakarta: Alenia Press
- [24]. Mulya, R. P. (2017). Analisis Kriminologis Pencabulan yang Dilakukan Ayah Terhadap Anak Laki-Laki Kandung (Studi Kasus di Polres Lampung Utara). *JURNAL POENALE*, 5(4).

- [25]. Napis, A. D. (2017). Peran Keluarga Dalam Pendidikan. *Jurnal Buah Hati*, 4(2).
- [26]. No, U. U. (23). Tahun 2002 Tentang Perlindungan Anak. 2010. Bandung: Refika Aditama.
- [27]. Noviana, I. (2015). Kekerasan seksual terhadap anak: Dampak dan penanganannya. *Sosio Informa*.
- [28]. Nurdin, N., & Hambali, H. (2015). Partisipasi Tokoh Masyarakat Dalam Memberikan Pendidikan Seks pada Anak. *equilibrium*, 3(2), 195-202.
- [29]. Nurrahmi, H. (2015). Konseling Bagi Anak yang Mengalami Perilaku Kekerasan. *Raheema*, 2(1).
- [30]. Octalina, Benedhicta Desca Prita. (2014). Perlindungan Hukum Terhadap Anak Korban Eksploitasi Ekonomi. Yogyakarta: Universitas Atma Jaya Yogyakarta.
- [31]. Paramastri, I., & Priyanto, M. A. (2010). Early prevention toward sexual abuse on children. *Jurnal Psikologi*, 37(1), 1-12.
- [32]. Putri Rabiatul Adawiyah. (2015). Perlindungan Hukum Terhadap Anak Korban Kekerasan Seksual Perspektif Hukum Positif Dan Hukum Islam. *Jurnal. Mataram: Universitas Mataram*
- [33]. Putri, R. N. A. K. (2015). Tindak Pidana Pencabulan Terhadap Anak Yang Terjadi Di Sekolah Dalam Perspektif Perlindungan Anak (Doctoral Dissertation, Universitas Airlangga).
- [34]. Rahma, A. N. (2012). Hubungan efikasi diri dan dukungan sosial dengan penyesuaian diri remaja di panti asuhan. *Psikoislamika*.
- [35]. Rahman, A. (2005). Eksploitasi Orang Tua Terhadap Anak Dengan Mempekerjakan Sebagai Buruh. *Jurnal Sodality*, 5(2), 10-20.
- [36]. Rahmawati, V. (2010). Tinjauan tentang pelaksanaan perlindungan hukum terhadap anak korban kekerasan pencabulan menurut undang-undang nomor 23 tahun 2002 tentang perlindungan anak (Studi Kasus di Pengadilan Negeri Surakarta) (Doctoral dissertation, Universitas Sebelas Maret).
- [37]. Roosa M.W., Reinholtz C., Angelini P.J. (1999). "The relation of child sexual abuse and depression in young women: comparisons across four ethnic groups". *Journal of Abnormal Child Psychology* 27 (1): 65–76
- [38]. Roqib, M. (2008). Pendidikan Seks pada Anak Usia Dini. *Insania*, 13(2), 271-286.
- [39]. Sari, R., Nulhaqim, S. A., & Irfan, M. (2015). Pelecehan Seksual terhadap Anak. *Prosiding Penelitian dan Pengabdian kepada Masyarakat*, 2(1).
- [40]. Semboda, A. (2016). Sanksi Pidana Bagi Pelaku Kekerasan Pencabulan Terhadap Anak Menurut UU No. 23 Tahun 2002 dan Hukum Islam (Studi Putusan PN Bengkulu No. 185/PID. B/2013/PN. BKL). *QIYAS*, 1(1).
- [41]. [41] Setyowati, Y. (2013). Pola komunikasi keluarga dan perkembangan emosi anak (studi kasus penerapan pola komunikasi keluarga dan pengaruhnya terhadap perkembangan emosi anak pada keluarga Jawa). *Jurnal Ilmu Komunikasi*, 2(1).
- [42]. Soenyoto, R. A. (2016) Analisis Yuridis Tindak Pidana Pencabulan Terhadap Anak (Putusan Pengadilan Negeri Serang Nomor: 180/Pid. Sus/2013/PN. Srg).
- [43]. Soetjningsih, C. H. (2008). Faktor-faktor yang mempengaruhi perilaku seksual pranikah pada remaja.
- [44]. Susanty, A., Fadlyana, E., & Nataprawira, H. M. (2014). Manfaat Intervensi Dini Anak Usia 6–12 Bulan dengan Kecurigaan Penyimpangan Perkembangan. *Majalah Kedokteran Bandung*, 46(2), 63-67.
- [45]. Syaodih, E., & Agustin, M. (2014). Bimbingan Konseling untuk Anak Usia Dini.
- [46]. Wahyuni, A. P. (2014). Analisis Hukum Pidana Islam Terhadap Putusan Pengadilan Negeri Sidoarjo Nomor: 09/Pid. B. An/2013/PN. Sda Tentang Pencabulan Yang Dilakukan Oleh Anak (Doctoral dissertation, UIN Sunan Ampel Surabaya).

# Nyeburin Marriage Under the Balinese Customary Law, Indonesia

Putu Dyatmikawati

Faculty of Law, Dwijendra University, Indonesia

**Abstract.** In Bali, the patrilineal family system which makes the position of men in the family entitle to inherit the parent's wealth, might become something of interest if the inheritance system in Bali will be given to women, where the position of women in terms of family inheritance in Bali, including *sentana rajeg* done through marriage. In the nyeburin marriage, the man (*purusa*) will change the status as *predana* and the woman (*predana*) changed the status to *purusa*. This will certainly give a different legal effect from an ordinary marriage. The purpose of this research is to know the form of *nyeburin* marriage in Balinese customary law; and know the ethics of the implementation of *nyeburin* marriage.

*Nyeburin* marriage form in Balinese customary law is a marriage in which a husband follows a wife. At first glance, this form of marriage appears to deviate from the system of *kepurusa* which emphasizes that the offspring continued by male offspring (*purusa*). *Nyeburin* marriage was actually still consistent with the family system of *kepurusa* because in this marriage wife status is *purusa* since it has been established as *sentana rajeg* in his family. In the form of ethics of this marriage, the husband who is the status as *pradana* released his legal relationship with his family then entered in the family of *kepurusa* of his wife. *Nyeburin* marriage generally consists of two ways namely *mepadik* (formal married) and how to *ngerorod* (elopment).

**Keywords:** *Patrilineal, marriage, nyeburin, heredity*

## 1. Introduction

Marriage is a mental bond between a man and a woman as husband and wife in order to form a happy and eternal family (household), which will have valid legal consequences if the relationship is considered lawful (Subekti, and Tjitrosudibyo, 2004; Saragih, 1980). In Bali the familial system adopted is the patrilineal kinship system meaning male (*purusa*) is the most important in family life. Male or descendants of men born of legal marriage are, in principle, entitled to inherit the property of their parents. Including adopted son and *sentana rajeg*, i.e. girls who were given status as man, as long as not fall their rights as heirs.

The patrilineal family system that makes the position of men in the family in Bali entitled to inherit the parent's estate, becomes something of interest if the inheritance system in Bali will be given to women, where the position of women in terms of family inheritance in Bali, including *sentana rajeg* done through marriage. Some forms of marriage in Bali are:

1. Ordinary marriage (*marriage mepadik*) is a form of marriage where the woman will switch to the family of men. This marriage is generally held in Bali.
2. *Nyeburin* marriage is a form of marriage in which the male will switch to the female family. This marriage is usually done by those who do not have sons in the family.
3. *Pada gelahang* marriage, marriage that is held according to the Hinduism and Balinese customary law, which does not include ordinary marriage (married out) and also excludes marriage *nyentana* (married into), but the husband and wife remain male status in their respective homes (responsibilities), which is to continue the family responsibilities of the wife and also to continue the husband's family's responsibility, within a certain period, depending on the agreement of the couple and their family (Windia, 2010).

In the *Nyeburin* marriage, where the man (*purusa*) will change the status as woman (*predana*) and the woman changed the status to man. This will certainly have a legal effect different from ordinary marriage, whether in terms of the status of the parties, as well as in the case of the holder of rights and obligations (inheritance) in the future. Because in the marriage of *Nyeburin*, the woman

raised his status to be a man, then he will be entitled to inherit property that will be abandoned by his parents and if there is a divorce the husband is not entitled to the inheritance. This is caused by the men here regarded as the women so that the inheritance will fall directly on their children from the marriage.

In marriage of *Nyeburin*, when *sentana rajeg* died while in the marriage has no children, it would influence the inheritance. This will be closely related to her husband's inheritance and status. If the husband has a second marriage it should be clear how the status and responsibility for the rights and duties in the next marriage. Considering that Law Number 1 Year 1974 concerning Marriage only stipulates the principal principles of marriage so that if in fact the cases arising out of reach of the marriage law, the arrangement will be submitted to the customary law and religious law in each region concerned. The purpose of this research is to know the form of *Nyeburin* marriage in Balinese customary law; and know the ethics of the implementation of *Nyeburin* marriage.

## 2. Theoretical Basis

According to Wignyodipuro (1989), marriage is one of the most important events in the life of society, because it is not only about bride and groom and surrender, but also the parents of both sides, their brothers, even their families each. Marriage is the coexistence of a man and a woman who fulfills certain conditions "(Prodjodikoro, 1974, Subekti, 1974, Rusli and Tama, 1984; Saleh, 1982). Law Number 1 Year 1974 Concerning Marriage stated that: "Marriage is the inner bond between a man and a woman as husband of Wife with the aim of forming a happy and eternal family (household) based on the God". Paragraph (1) of Law Number 1 Year 1974 concerning marriage declare marriage is lawful if done according to the law of their respective religion and belief. In the further explanation it is mentioned that there is no marriage outside the law of their respective religion and belief.

According to the notion of Hindu law, inheritance is one way of obtaining rights to property called inheritance. Pudja (1977) also says that inheritance is the legal relation or legal precepts that govern the legal relationship between the heirs and the heirs of the inherited property or property, either after the heirs died or while the heir is still alive. So the inheritance is not only done after the heir is dead, but can also be done as the heir is still alive. According to Ali (2008), customary inheritance law is a set of rules governing the passing and transferring of inheritance or inheritance from one generation to another, whether related to property or relating to material rights (material and non material). It is further mentioned that the outline of inheritance system is divided into three kinds of inheritance system:

### a. Individual Inheritance System

Inheritance with an individual or individual system is a system of inheritance in which each inheritance gets a share to be able to master and upon possession of inheritance according to their respective parts.

### b. Collective inheritance system

Inheritance with the collective system is where the heirs jointly inherit the inherent property of the possessions to each of the heirs.

### c. Major inheritance system

The system of true inheritance is in fact also a collective inheritance system, only the transfer and transfer of the right of control over the undivided property is transferred to the eldest son who served as the household leader or the head of the family to replace the father or mother as the head of the family. Major inheritance system is there are two kinds due to differences in hereditary system that is followed:

- 1) The male Majorate, that is, the right of control over the undivided property is bestowed upon the eldest son.
- 2) Majorate women that is the right of control over the undivided property is delegated to the eldest daughter.

The three inheritance systems do not each directly refer to a particular form of society in which the inheritance system prevails. The system can be found in various forms of society, even in a form of community structure can be found in more than one inheritance system.

### 3. Research Method

The type of research used is qualified as empirical research is to examine the problems encountered in terms of legal view by doing research that emphasize on empirical nature of the study in the field directly. The data source used by the author in completing this final task is to use primary data and secondary data. Primary data is binding legal material that consists of (i) Law Number 1 Year 1974 About Marriage; and (ii) Government Regulation of the Republic of Indonesia Number 9 Year 1975 on Implementation of Law Number 1 Year 1974. While secondary data is legal material that explains primary law material that consists of books, report materials, articles and other literature materials which relates to this study. Data collection technique is library research (library research). The method of data processing is qualitative analysis.

### 4. Nyeburin Marriage Under Bali Customary Law

#### 4.1 Marriage of Nyeburin

Since the issuance of Law Number 1 Year 1974 on Marriage, various implementing regulations have been made. In addition to Government Regulation Number 9 Year 1975, which is the most important regulation in the implementation of the Marriage Law, the regulations in the field of Marriage may be regarded as the National Marriage Law applicable to all regions and Indonesian citizens. *Sentana* is a word derived from the Sanskrit language which is then adopted into a particular term in Balinese. Windia (2004) says ordinary male sons are also called *sentana*. *Sentana* has a hereditary meaning that has children, grandchildren, great-grandfather, and so on (Kaler, 1982).. So *sentana* can be defined as a child or a descendant. In general, the term biological child is used to declare a child born from a legal marriage between a man and a woman.

The term of *sentana* is also used to express the child of his own being the sole heir or the leading heir (Panetje, 2004). *Sentana* consists of children *sentana* and children *sentana rajeg*. Biological children or *sentana* according to Balinese customary law are boys and girls born of legal marriage. Children of men born from legal marriages and adopted sons in principle become the successors of the family in relation to society. But did not rule out any daughter can be a successor to his family as well as boys i.e. with the establishment of the daughter becomes *sentana rajeg*. Here it means to assign the girl to become a male, a daughter who is a *sentana rajeg* who will later continue his descendants from his father because of his status as a son (*purusa*).

Balinese Hindu society, boys do have an important value in continuing offspring. It is the sons who will inherit the custom and continue the rights in society. This is different from girls who have no obligation like boys. As a result, families with no sons will try to find a sentence to continue their offspring. The Balinese Hindu community, whose familial patrilineal (paternal) marriage system is done should take fully into account the prevailing customary system. Many cases in Bali, a boy loses his inheritance rights for marriage that is deemed to be contrary to the prevailing custom which is due to the marriage of *nyeburin*. The *nyeburin* marriage is a marriage of a man participating in his wife's family, living in the house of his wife and all his descendants belonging to the wife's family. The notion of *sentana rajeg* is not expressly stated in the source of law in Bali, however, according to Sukerti (2007), that in the patrilineal community in Bali where girls are changed status through *nyeburin* marriage to become equal status with boy status .

For people who are married *nyeburin* usually caused a family concerned do not have sons as heirs who will continue offspring. To continue the offspring of the family concerned so as not to break up, the family that does not have a son feels the need to assign one of his daughters as *sentana rajeg* who will look for *sentana* to be invited to stay at home. However, in practice in Balinese life if in one family has more than one daughter, then based on the decision of big family, not only one daughter who can do *nyeburin* marriage, but other sisters can look for *sentana*. So that means in a family that has more than one daughter can do two or more marriage *nyeburin* according to the decision of the extended family.

#### 4.2 Married Form of Nyeburin In Balinese Customary Law

In the Balinese community, families who do not have sons as progeny of descendants will generally try to marry *nyeburin* as a descendant of the offspring. With her son doing the *nyeburin* marriage is one way out to get children. For people who adopt the marriage system of *nyeburin*, a family raises *sentana* if the family does not have a male child as an heir who will continue his offspring. So to continue the family descent concerned, the family who does not have a boy feels the

need to set one of his children as *sentana rajeg* who will look for *sentana* to be invited to live in his house. The girl is set directly by her parents to continue the offspring with *nyeburin* marriage.

In the form of marriage is precisely the husband who follows the wife. At first glance, this form of marriage appears to deviate from the system of *kepurusa* which emphasizes that the offspring continued by male offspring (*purusa*). *Nyeburin* marriage was still consistent with the family system *kepurusa* because wife status is being male (*purusa*). In the form of this marriage, the husband who is a *pradana* status is released his legal relationship with his family of origin and then entered in the family *kepurusa* his wife. Thus, the descendant in the family *kepurusa* was continued by a child with a status *purusa*. The child born of this marriage is legal in the family of his mother, so fulfill the obligation and get her right in the mother's family.

The feature that shows that the marriage is *nyeburin* and is not solely because the husband (generally) lives in the house of the wife's family, but more can be seen from the fact that the ceremony of marriage validation is carried out at the home of the bride's family and the bride's family.

Some people assume that this *nyeburin* marriage form as a tribute to Balinese women because with its status as a *sentana rajeg*. Women who marry by this marriage at the same time become the heirs of the property of his parents. Associated with inheritance, perhaps the view is true because the daughter who was not originally an heir could be the heir of his parents' property. But in certain cases, the view is not entirely true, especially if it is associated with the freedom of girls in choosing a mate. As a result of his responsibilities to be determined as *sentana rajeg* who must stay at home he must be careful to fall in love with men, because he must investigate and make sure in advance that the men who approached him will be sorry.

#### 4.3 *Nyeburin Marriage Ethics*

Especially for the Balinese Hindu community, whose patrilineal inheritance system should take fully into account the prevailing customary system. Many cases in Bali a boy loses his inheritance rights due to marriage which is considered to be contrary to the prevailing custom which is due to *nyeburin* marriage. In this kind of marriage, a man participated in his wife's family, living at home wife and all descendants belong to the family wife. The rules of marriage with a marriage commonly practiced in most societies are also slightly unique. In ordinary marriage, it is usually a man who proposes a girl to be his wife. However, in *nyeburin* marriage a woman is being the one who applies for the man to be her husband for next to be invited in her house. Meanwhile his descendants will belong and continue the offspring of his wife's family. There is a process of changing the status and position of women in a custom. She is being male even though biologically still remains a woman. So women have the position and obligation as:

1. As a man in the family in terms of determining the family.
2. Heirs to the family.
3. Successor of family ancestry.
4. Take care of the family.
5. Become a member of an adat village that has the same rights and obligations.
6. Continuing the traditions that the family has inherited.
7. Fostering the integrity of the family.

In general, the implementation of *nyeburin* marriage and ordinary marriage is almost the same, only in marriage *nyeburin* marriage ceremony performed in relatives wife. The way the implementation is tailored to the custom of each village. In ordinary marriage ceremonies there is a mixture of religious law with local customary law relating to each other. *Nyeburin* marriage generally takes through two ways namely *mepadik* (married) and how to *ngerorod* (elopment). The process is done by way of *mepadik* (marriage) usually because both parties have previously had a good relationship. Marriage done by way of *ngerorod* (elopment) is usually one of the causes because of the difference of the caste. Based on interviews with Mr. I Made Radiawan (who did the *nyeburin* marriage), because the relationship with the prospective husband already familiar, the marriage process is done by way of *mepadik*..

In the marriage process as an ethic conducted in *mepadik* one follows 4 stages are: (i) pre visit (*mesuaka*); (ii) retrieval; (iii) basic ceremony; and (iv) farewell. While the process of marriage is done by way of *ngerorod* (elopment) is taken with three stages: (i) delivery messenger; (ii) preparation of ritual ceremony; (iii) farewell.

Implementation of *nyeburin* marriage taken by way of marriage is passed by the following stages:

1. Stage of pre-visit (*Mesuaka*)

Based on the results of interview with Mr. I Made Radiawan (who did *nyeburin* marriage) At this stage both families have agreed and agreed, then determined good day to continue application to the men. Regarding the grace period of the guidelines in the *mesuaka* stage varies depending on well-approved day standards, or looking at the local family situation and conditions.

Based on the interview with Mr. I Nyoman Rukeg, the family of Ni Made martini (who made a *nyeburin* marriage) that *mesuaka* done to initiate good relations with prospective family, in order to build a harmonious relationship among fellow family.

2. Stage of retrieval (*Nyuanng*)

The grace period between taking the groom and the day of marriage validation is also based on the election, the variation of the grace period selection generally lasts three days or five days, but there is also one day from the previous or precise in the marriage certificate, which is an odd number of numbers.

Based on interviews with Ms. Ni Made Martini (who did the retrieval marriage), saying such a situation is not only based on the presence or absence of good days, but also for cost efficiency and shorten the time and process as long as it does not reduce its core meaning.

The taking of the groom is equipped with innate in the form of ritual, the following day is accompanied by the sound of *kentongan* in the groom's sub-village as a sign that one of the members of his village has been married out. All the offerings and means of all kinds were handed over to the bridegroom's house as a witness in a discussion meeting by the representatives of both families. Then the two prospective brides to the home of the prospective brides. Place of ceremony held.

Based on the interview with Mr. I Ketut Meja (Head of customary village of Sidakarya) said that this stage the female family report to head of customary village and head of administrative village, that there has been a marriage event by mentioning the name and the origin of the groom, as well as to request the attendance at the ritual ceremony (ritual endorsement).

3. Stages of basic ceremony

At this stage is called the ceremony of *mebyakala* or *mebeakaon* as the top of the series of marriage ceremonies. Marriage is regarded valid after the this ceremony. This is based on the decision of the Raad Kerta in Singaraja number: Number 49 On April 11, 1932, and the decision of Karangasem Raad Keria Number 290 / Civiell, dated 14 October 1932.

Both of the decisions that became jurisprudence above then received support from Parisadha Hindu Dharma Center, that for uniformity then the validity of marriage according to religion is after the ceremony of *mebyakala* or *mebeakaon*. This ceremony is led by the priest of the Brahmana to deliver the *mantram* as an appeal to God, the ancestors are called the gods of witnesses. The testimony of customs officers and the official village officials who will record the bridal data as the process of recording the marriage and the relatives of the two brides are called human elements witnesses and testimony to devil spirits are called bhuta witness elements.

With the aboved witness then marriage is declared valid, according to Hindu religious law. Prior to the enactment of Law Number 1 Year 1974 on Marriage, marriage events are not registered, as long as it meets the awig-awig provisions and has been witnessed by the customs. But the marriage is considered complete. With the enactment of Marriage Law No. 1 of 1974, marriage must be registered.

At the beginning of the enactment of Law No. 1 of 1974, the subdistrict head was referred to as a marriage recorder for Hindus (decree of Governor KDH TK 1 Bali, No. 61 / Kesra / II / C / 504/75, dated 29 September 1975) and since 1988 recording of marriage for Hindus in Bali was done by the Civil Registry Office (the decision of the Governor of KDH TK 1 Bli No. 242 of 1988, dated June 9, 1988,) based on Bali Governor's Decree no. 233 of 1990. On 26 May 1990, head of customary village was appointed as an assistant employee of marriage registration in Bali and appointed head of sub-district government affairs as coordinator.

Based on interviews with Mr. I Ketut Meja (head of customary village of Sidakarya) the appointment of head of customary village is seen as a very appropriate step with the first reason he has always been present in every marriage as a witness to legalize customary marriage to establish

a citizen begin to enter into a member of customary village. Therefore, based on the practice of registering the marriage generally done by head of customary village who also attended to attend the ceremony, with a special form then petitioned the priest who led the ceremony ritual ceremony, witnesses and signatures of the brides as a condition of getting marriage deed. After the ceremony is completed both brides are required to follow up the letter to the sub-district level, and proceed to the civil registry office in the district / municipality in the area where the marriage takes place. This is done to comply with the provisions of article 2 (1) and (2) of Law number 1 of 1974, concerning marriage.

4. Stage of farewell. In addition to the three stages of marriage implementation above also apply the stage of the table, this stage is also called the proposed stage of implementation is carried out simultaneously with the stage of picking up the prospective bride, this depends on the consideration of each family bride. Usually when the distance from the origin of the bride is relatively far then the process of the table as an additional stage done in conjunction with the pickup stage, but if the distance is relatively close then this stage is done following after the main stages.

Based on interviews with Mr. I Gusti Putu Sutha (Head of subvillage of Sidakarya), the last stage is called by stage of the table (farewell) done by the bride to the groom's house. In accordance with the description of 4 male respondents in this event the bridegroom performing ritual joy in the temple of his ancestors, essentially to ask for blessing and apologize to his ancestors for leaving the obligation to change his wife's ancestors. For a boy who take *nyeburin* marriage considered out of the family of origin and he is no longer regarded as part of kinship members and lose the right as an heir.

#### **4.4 Factors Causing Nyeburin Marriage**

The prominent role of the boys in Balinese society is expected to continue the village activities called *ayahan* such as: mutual cooperation, making temple building, tradition of making penjor, irrigation of subak, performing cremation ritual, and so on which rely more on physical strength. The introduction of *nyeburin* marriage in indigenous communities openly gives opportunity to take the form of marriage as a matter of course, unlike indigenous people who still consider taboo and holds a strong tradition of patrilineal kinship then married by *nyeburin* way strange, as in indigenous areas Bali parts of Karangasem, Bangli and Buleleng.

*Nyeburin* marriage is the second form of marriage known by indigenous peoples of Bali in addition to regular marriage form, some of the factors supporting *nyeburin* marriage is

1. To avoid the right of camput (no heir)
2. for not having brothers
3. The wishes of parents
4. As a single daughter

Based on the interview with Mr. I Nyoman Rukeg, the family of Ni Made Martini (who made the *nyeburin* marriage), the above reasons coupled with other supporting factors because they want to give a total inheritance to their biological children. Based on the interview with Mr. I Made Radiawan (who did the *nyeburin* marriage) explained the reason for the marriage *nyeburin* because of economic factors, and in his house has more than two brothers, too. Some of the advantages that can be taken from the meaning of adoption of a single daughter to be *sentana rajeg*, as follows:

- a. Single daughter who was appointed as *sentana rajeg*, automatically stay at home.
- b. Parental inheritance can be enjoyed in full by the biological child
- c. Parents have legal certainty because the responsibility of continuing the maintenance of the inheritance is continued by someone who can be trusted.
- d. Later when the parents died, the certainty of the ceremony *pengabenan* itself can be implemented.

The Customary law of village arranges the girls who is being *sentana rajeg*, after marriage obliged to go down her obligations/responsibilities, replacing parent's obligation. Girls who do *nyeburin* marriage must take customary responsibilities in the village after 1 month of marriage. Counting 1 month since the marriage of a girl who is married *nyeburin* must perform obligations in traditional village. With the shift of this obligation, the parents have been free from customary village obligations. In the case of only one child and women born, it can be ascertained based on the wishes of large families, the child will also be suggested to look for *sentana* to continue the ancestral family descendants. But if there is no child in the marriage then the inheritance of parents will inevitably fall

to the side of the husband, but the husband has a moral obligation in maintaining the inheritance and also other obligations he has entered into a female family. So if in marriage of *nyentana* has no children and *sentana rajeg* died first (can not inherit) then the inheritance of parents passed to the husband. Husband's position here becomes "widow".

Based on an interview with Mr. I Ketut Meja, explaining "a man as in a *nyeburin* marriage have rights and obligations in marriage of *nyentana*, with the entry into the family of the woman. Then all the relationships with the family of origin have been disconnected; obtain inheritance or obligation to bear the customary village fathers / duties of the village of origin.

The right of a *sentana* in the family of his wife is to use all facilities in the house of the women as long as it is not contrary to the rights possessed by his wife and the rules in the family. While the obligation that follows a *sentana* is doing all activities related to the obligations of men (father) in the customary village where his wife's family. Speaking of the right of inheritance, a man in this *nyeburin* is being a status as a woman, so that if his wife died then the status of *sentana nyeburin* this is as a widow, and a widow is not the heir but entitled to enjoy the property of his wife as long as he keep running his duty as a widow. If the death of wife due to the divorce, he returns to the home of his native family. He has no longer legal duties and responsibilities and in the family of his wife, so *nyeburin* not entitled to enjoy the estate of his deceased wife, except the property brought and acquired during marriage (for the rich) and also concerning the born child and his marriage will follow her mother line instead of her father.

#### 4. Closing Remarks

*Nyeburin* marriage form in Balinese customary law is a marriage in which a husband follows a wife. At first glance, this form of marriage appears to deviate from the system of *kepurusa* which emphasizes that the offspring continued by male offspring.. But if carefully observed, *nyeburin* marriage was still consistent with the family system *kepurusa* because in this marriage wife status is man because it has been established as *sentana rajeg* in his family. In the form of this marriage, the husband who is a female (woman) status is released his legal relationship with his family of origin and then entered in the family of his wife. Thus, the descendants in the family were continued by a child with a status of woman. The child born of this marriage is legal in the family of his mother, so fulfill the obligation and get her right in the mother's family. Ethical execution of *nyeburin* marriage generally takes through two ways namely *mepadik* (married) and *ngerorod* (elopment). The process is done by way of *mepadik* (marriage) usually because both parties have previously had a good relationship. Marriage done by way of *ngerorod* (elopment) is usually one of the causes because of the difference of the caste.

#### References

- [1]. A.A. Ngurah Gde Dirksen, 1986, *Seni Hukum Perdata Hukum Perkawinan dan Permasalahannya*, Toko Setia Kawan, Denpasar
- [2]. Ali, Zainuddin, 2008, *Pelaksanaan Hukum Waris di Indonesia*, Sinar Grafika, Jakarta
- [3]. Djaren, Saragih. 1980, *Pengantar Hukum Adat Indonesia*, Penerbit Tarsito Bandung.
- [4]. Griadhi, Wirtha, 1990, *Sikap Masyarakat Bali Terhadap Kemungkinan Terwujudnya Sistem Hukum Waris Bilateral Individual*, Universitas Udayana Denpasar
- [5]. Hadikusuma, Hilman, 2003, *Hukum Waris Adat*, PT Citra Aditya Bakti, Bandung
- [6]. Kaler, I Gusti Ketut, 1982, *Butir-butir Tercecer Tentang Adat Bali 2*, Bali Agung, Denpasar
- [7]. K.Wantjik Saleh, 1982, *Hukum Perkawinan Indonesia*, Ghalia Indonesia, Jakarta
- [8]. Panetje,Gde, 2004, *Aneka Catatan Tentang Hukum Adat Bali*, Cetakan Ketiga, Ceyayu Mas
- [9]. Prodjodikoro, 1974, *Hukum Perkawinan di Indonesia*, Cetakan keempat, Sinar Baru, Bandung.
- [9]. Subekti, 1979, *Pokok-Pokok Dari Hukum Perdata*, Cetakan XIV, Intermedia, Jakarta.
- [10]. Pudja, Gde, 1977, *Hukum Kewarisan Yang Diresepir Kedalam Hukum Adat di Bali dan Lombok*, Cetakan I
- [11]. Rusli dan R. Tama, 1984, *Perkawinan Antar Shantika Dharma*, Bandung.
- [12]. R. Soeripto Prawiroharoiddojo dan R. Soebijono Tjitronoto, 1986, *Pluralisme Dalam Peundang-Undangan Perkawina Indonesia*.

- [13]. Soemitro, Ronny Hanitijo, 1988, *Metodelogi Penelitian Hukum Dan Jurimetri*, Ghalia Indonesia, Jakarta
- [14]. Soepomo, 1984, *Bab-bab Tentang Hukum Adat*, Pradnya Paramita, cetakan ke – 9, Jakarta
- [15]. Subekti, dan Tjitrosudibyo, 2004, *KHUPerdata dengan tambahan UUPA dan Undang-Undang Perkawinan*, Penerbit Pradnya Paramita.
- [16]. Sudiyat ,Iman, 1987, *Hukum Adat Sketsa Adat*, Liberty, Yogyakarta
- [17]. Sukerti, Ni Nyoman, 2007 “*Gender Dalam Hukum Adat*”, Fakultas Hukum Universitas Udayana, Denpasar
- [18]. Wignjodipoero, Soerojo, 1973, *Pengantar Asas-asas Hukum Adat*, Alumni, Bandung
- [19]. Wignyodipuro Surojo, 1989, *Pengantar dan Agama*, Ghalia Indonesia, Jakarta
- [20]. Wayan P. Windia, 2004, *Danda Pacamil Catatan Istilah Hukum Adat Bali*, Upada Sastra, Denpasar, hlm. 47
- [21]. Wayan P. Windia, *Pelaksanaan Perkawinan Pada Gelahang di Bali*, Disajikan dalam seminar hukum adat yang diselenggarakan mahasiswa Program Ekstensi FH Unud, pada tanggal 3 Juli 2010, bertempat di Aula FH Unud, Kampus Bali, Denpasar.
- [22]. Wayan P. Windia, 2004, *Danda Pacamil Catatan Istilah Hukum Adat Bali*, Upada Sastra, Denpasar, hlm. 47.

# Implementation of Character Education in Forming Self-Assistance on Special Requirements (Case Study at Madania Center Banjar Bumi Sari Denpasar Barat)

Putu Ronny AnggaMahendra

Pancasila and Citizenship Education Program Study, The Faculty of Education,  
University Dwijendra Denpasar  
Email : puturonny87@gmail.com

**Abstract.** The increasing number of autistic children is a matter of shared responsibility, not just the medical or psychological sections. In terms of behavior, autistic children tend to hurt themselves, not confident and be aggressive. In line with these issues character education plays an important role to direct them into an independent human being and then developed in accordance with the potential that existed in him so that it can be beneficial to himself and the environment around him. One of the schools dealing with the problem of autistic children is the Madania Center School located at JalanSatelit No.56 Sanglah-Denpasar Barat. This research is a qualitative research using educational psychology approach. The subjects of the study were principals, teachers and autistic students. The data collection techniques using interviews, observation and documentation. Data analysis through data reduction, data presentation, and conclusion. The purpose of this study to determine the application of character education in establishing independence in children with special needs and know the constraints faced.

The results of this study show that the application of character education in children with special needs through the first six strategies, through the basic principles of educational services children with special needs, the second through habituation and good culture in school, the third through exemplary, fourth through morality applicative, the fifth through religious therapy , and sixth through massage therapy.

**Keywords:** *Character Education, Independence, Children with Special Needs.*

## 1. Introduction

Education is a conscious effort to prepare learners in their roles in society today and in the future, as individuals and as citizens of the nation and state. Character education is the basic foundation in shaping the future generation of the nation that is able to compete in the era of globalization, not just academically smart but also emotionally intelligent.

Related to the effort to realize character education as mandated in RPJPN which has been stated in Law Number 20 Year 2003 regarding National Education System (UUSPN), that is : "National Education functions to develop and shape the character and civilization of a dignified nation in order to educate the nation's life, aims to develop the potential of learners to become human beings who believe and piety to God Almighty, noble, healthy, knowledgeable, skilled, creative, independent , and become a democratic and responsible citizen. "Ministry of National Education," Law of the Republic of Indonesia Number 20 Year 2003 on National Education System, Chapter II, Article 3 (Reader Justice, 2009: 101).

Studying the character of learners for a teacher is a strategic effort to gain a comprehensive understanding of the development of learners, which is useful for efforts to educate, guide, or facilitate the child in developing his potential optimally, while in the process of learning a teacher faced with children with special needs in class, how a teacher is prepared to educate professionally according to the student's needs effectively in accordance with what he needs. Understanding the needs and characteristics of all children in general is fundamental to understanding the needs and characteristics of children with special needs that need to be implanted in the psyche of every teacher is the belief that

every child has the same rights, the right to get attention, compassion, protection and education. Just a different way of dealing with a child with the disorder he has. One of the most important things for children with special needs is the solution of how to give them attention by applying character education that can encourage children with special needs so as not to feel alienated, able to live socialize with their environment without any offense to the derogatory words or physical harassment actions against them .

In Indonesia, the issue of children with autistic disorders was found around the 1990s and became widely known in the 2000s. Accurate data showing the number of children with the disorder is not known with certainty. The number of children with autistic disorders is growing every day, requiring competent experts, educational systems, curricula, adaptable services, and government policies to make an important contribution to the world of children with special needs in the context of Autistic children. The need for knowledge, literature, and scientific research results is needed to provide education for them. Government programs in the application of character education for learners, is expected to form a generation of nations who have the ability to interact with their social environment. In autistic children not having the ability to interact, children with autistic disorders are difficult to communicate and language, aggressive behavior, emotional disturbance even in motor aspects.

Based on the background of problems that have been described then can be formulated problems as follows: (1) How the application of character education in establishing independence in children with special needs in schools Madania Center ?, (2) What are the constraints faced in applying character education in children special needs Autistic?

Based on the formulation of the problems that have been described, the objectives to be achieved in this study are (1) To understand the characteristics of children with special needs through the application of character education, (2) To know the constraints faced in establishing independence in children with special needs Autistik.

## **2. Theoretical Basis**

In Law Number 20 Year 2003 regarding National Education System in Article 1 paragraph (1) stated that Education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual power of religion, self-control, personality, intelligence, noble character, and skills needed him, society, Nation and State.

The essence of education is the process of humanization, humanizing human beings. Education as one stage of maturity of a person to himself physically, mentally, mind and heart to achieve happiness in the life of the world and the hereafter.

Ki Hajar Dewantara views character as character or character, according to him character is unity between motion, mind, feeling, and will or will which then generate power.

Character education is a systematically designed and executed effort to help learners understand the values of human behavior related to God Almighty, self, fellow human being, environment, and nationality embodied in thoughts, attitudes, feelings, words , and deeds are based on norms of religion, law, order karma, culture, and customs.

Independence or autonomy as the ability to control and manage their own thoughts, feelings and actions freely and self-directed to overcome feelings of shame and doubt.

It can be concluded that independence is the ability to organize and control thoughts, feelings, and actions freely and strive to determine itself without the help of others to complete the task. By completing the task itself results will be more satisfying than the work assisted by others. Learners who have independence will make the learning process smoothly so that teachers can also enjoy teaching. Independent learners will be able to serve their own needs while also responsible for himself.

Understanding Independence psychologically and mentally is the state of a person who in his life was able to decide and do something without help from others. Such abilities may only be possessed if a person is able to think carefully about something he does or decide upon, both in terms of benefits or benefits, as well as the negative aspects and disadvantages that will be experienced (Hasan Basri, 2000: 53). From some definitions of independence presented by experts can be concluded that Independence is the ability of a person to decide and do something without dependence

on others and ready to accept any risk from the impact of the decision or thing done with a sense of responsibility by yourself.

Learning Independence is a condition of independent learning activities independent of others, have the will, initiative and responsible themselves in solving learning problems. The independence of learning will be realized if the students actively control themselves everything done, evaluate and then plan something more in the learning that passed and students also want to be active in the learning process.

The history of the emergence of autistic terminology was first coined by Eugen Bleuler a Swiss Psychiatrist in 1911, where this terminology is used in schizophrenic adolescents. Dr. Leo Kanner of Johns Hopkins University describes autism in early childhood (Infantile Autism). The findings are based on observations from 11 children from 1938-1943.

Kanner uses the term autism to indicate the autistic content of the child. This terminology was borrowed from Bleuler in the year 1911-1950, where the use of the word autistic to describe a special or strange mind that is self-centered. Individual autistic individuals have not been distinguished from schizophrenia.

Kanner sees unusual traits in the clinical history of these children. Kanner describes that autistic children have very severe disruption in the communication aspect. Language is only marked with echolia (repetition) and less original as well difficulty in using the pronoun "me" and using a single third person "he" as himself or representing "me".

Autistic is a developmental disorder that affects several aspects of how the child sees the world and how to learn through his experience. Children with autistic disorder are usually less able to sense social contact. They tend to be alone and avoid contact with people. People are regarded as objects rather than subjects that can interact and communicate.

Autism can be summed up as a very complex / severe neurobiologist developmental disorder in a long life, which includes behavioral disorders. Social interaction, communication and language, as well as emotional disturbance and sensory perception even on the motor aspect (Yuwono, 2012: 26).

There are three aspects that can be observed in the characteristics of autistic children as follows:

1. Behavior, that is; indifferent to the environment, unfocused behavior; pacing, running, spinning etc., attachment to a particular object, enthralled with a rotating object or moving object.
2. Social Interaction, ie; not wanting to close his eyes, called not turning, not playing with his peers. not empathy in the social environment, engrossed with himself.
3. Communication and Language, ie; late in speech, no attempt to communicate non-verbally with body language, raved with unintelligible language, echolia (repeating words). Not understanding other people's talk.

Other things related to the characteristics of the accompanying autistic child such as emotional disturbance; laughing and crying for no apparent reason, unable to empathize, excessive fear and so on. Disorders in motor coordination and sensory perception eg difficulty in capturing and throwing a ball, jumping, closing the ears when hearing a certain sound; car horns, ambulance sirens, baby crying, kissing and licking things, not understanding the dangers and impaired children's cognitive development.

### **3. Research Methods**

This type of research is a descriptive qualitative research, which uses educational psychology approach that utilizes the application of psychology in school programs which is the subject of research is to emphasize around the problem of education, including internal factors including education; components of teachers, students, curriculum, teaching system, education management, This research was conducted at Madania Center School which is located at Jalan Satelit No. 56 Banjar Bumi Sari, West Denpasar.

In this research the method of data collection is observation, interview and documentation. The data collected from the autistic student observation in self-reliant class of 8 people with the age range between 7-13 years. Data were also obtained from interviews with class teachers, principals and some school staff. Documentation is taken from several activities of autistic students in the form of semester portfolios, daily report books, and photos of students while performing school activities.

Data analysis is done using the steps of reduction, data presentation, and conclusion (Miles and Huberman in Sugiyono, 2013). All three steps can be done at all stages in the process of qualitative research, namely; 1) Descriptive Stage, 2) Focus and 3) Selection.

#### 4. Research Result

The results of this study indicate that the application of character education in children with special needs through six strategies namely; 1) Through the basic principles of educational services of children with special needs, 2) Through good habituation and culture in school, 3) Through exemplary, 4) Through applying morals, 5) Through the holy Qur'an therapy, and 6) Through the Group Support Therapy. Furthermore, the values of the constructed characters are the values associated with Allah SWT ie religious values include faith, devotion and patience, self-related values of honesty, discipline, responsibility, and self-reliance, character values associated with others such as mutual respect, help-help, courtesy, and tolerance, as well as environmental value that is environmental preservation.

In Madania Center schools implement an educational system called "Self-Development" learning program, where activity refers to an activity that is personal, but has an impact and is related to human relationship. Habits that are taught or trained concerning the needs of individuals to be done alone without the help of others when conditions are possible.

There are two aspects of the background of learning Self-Establishment in children with special needs, namely; 1) Aspects of independence related to health aspects, 2) Social culture maturity. Self Development as a process of learning in children as a process of formation and self-development of children towards independence. In establishing autonomy in autistic children used methods that suit their needs. Essentially the same as the other child about the activity in terms of care or maintaining himself, but the activities undertaken to supplement the basic tasks efficiently in social contact so as to be accepted in the environment of his life.

Specialized Self Development Program consists of several aspects of development where each other is related and interconnected, namely: 1) Take care of yourself; eat-drink, body hygiene, maintain health, 2) take care of themselves; dressed, ornamented, 3) Self-help; avoid and control yourself from danger, 4) Communicate; non-verbal, verbal, or written communication, 5) socializing; self-declaration, association with family members, friends, and community members, 6) occupation of employment; tool maintenance, skills acquisition, job information, communicating the work with others, 7) sex education; discriminating gender, self-preservation and reproduction apparatus, keeping away from the touch of the opposite sex.

**Table 3.1.** Subject Schedule

JAM	SENIN	SELASA	RABU	KAMIS	JUM'AT
08.00-08.15	Senam dan Ikrar	Senam dan Ikrar	Senam dan Ikrar	Senam dan Ikrar	Senam dan Ikrar
08.15-08.30	Hafalan surat pendek Doa Harian	Hafalan surat pendek Doa Harian	Hafalan surat pendek Doa Harian	Hafalan surat pendek Doa Harian	Hafalan surat pendek/Doa Harian
08.30-09.00	Latihan Wudhu & Pembiasaan Gerakan Sholat	Latihan Wudhu & Pembiasaan Gerakan Sholat	Latihan Wudhu & Pembiasaan Gerakan Sholat	Latihan Wudhu & Pembiasaan Gerakan Sholat	Latihan Wudhu & Pembiasaan Gerakan Sholat
09.00-10.00	Menjahit	Menjahit	Menjahit	Menjahit	Menjahit
10.00 -10.30	Doa, cuci tangan, makan, Istirahat	Doa, cuci tangan, makan, Istirahat	Doa, cuci tangan, makan, Istirahat	Doa, cuci tangan, makan, Istirahat	Doa, cuci tangan, makan, Istirahat
10.30 - 1.00	Menulis	Ketrampilan Memotong	Latihan Kebersihan - Sikat gigi - Mandi - Celistung	Ketrampilan Gerak & Lagu	Melukis Penutup Doa pulang
11.00 - 11.30	Ketrampilan Menggunting	Membaca		Cooking Class	
11.30 - 11.40	Evaluasi	Ketrampilan Motorik (menyapu & menaici perabot)			
11.40 -12.00	Penutup Doa pulang	Penutup Doa pulang	Penutup Doa pulang	Penutup Doa pulang	

(Source: Tata Madania Center)

Changes in the attitude of independence in autistic children will be seen in the behavior, if the attitude of independence has grown in him, then he is easier to follow the instructions of teachers in simple, for example; throwing garbage in the garbage, willing to complete the task itself given even though the result is not appropriate, because fine motor in autistic child is still very weak or strong physically but not controlled.

In the application of character education in children with special needs autistic there are supporting factors and inhibiting factors. With the care of parents in applying character education at home will help and support in the healing of autistic children, the condition of people who are still minimal care for children with special needs can be given insight through socialization by the government or institutions related to it, the creativity of professional teachers with hold activities or extracurricular learning to develop the potential that exists in children with special needs.

Based on table 3.1, it appears that some of the activities carried out as the subject schedule of students is a daily learning activity oriented to the needs of children who can shape the attitude of independence.

#### **4. Conclusion**

Character education is the basic foundation in shaping the character of the nation's generation. The Government has implemented in the Law as of the National Education System. Character education aims to develop and optimize the potential of existing generation children, both normal and special needs children, they have the same rights in ways that are tailored to their needs.

There are a number of risk factors for child failure at school. These factors do not lie in the intelligence of the brain, but on the character, namely self-confidence, cooperative ability, sociability, ability to concentrate, empathy, and communication skills.

To establish independence in children with special needs will be able to help to grow their confidence, so they do not become a burden for others and the environment around them.

Participation of all parties will support for the healing and development of their potential, starting from the acceptance of parents having children with special needs, schools that implement the learning program in accordance with their needs as well as professional educators, community participation not to exclude children with special needs, alternative medical or therapeutic healing.

#### **5. Suggestions**

The increasing growth in the number of autistic children in our country, should be a concern for the government to create special programs for children with special needs, schools for autistic children tend to be expensive because there is still a lack of educators who want to work in the school . For services such as extension agencies for families with autistic children to be improved, and for parents to be gracious and sincere in accepting the special needs of children, do not be shy and do not hide them from the community.

Establishing self-reliance of children with special needs Autistic requires patience and understanding of the autistic child's own world, seeing the results of self-behavior change in them can not be in a moment, because they have the world in their own way. Autistic children are difficult to socialize in their environment, hampered in verbal communication (difficult to communicate two-way / reciprocal), but his potential is very extraordinary, autistic children are very genius in the field of interest or likes.

Whichever method and therapy selected in the treatment for the healing of children with special needs should be structured, patterned, consistent, continuous and programmed. Handling should be considered in accordance with the needs and age of the child.

#### **References**

- [1]. Anonim. 2010. *Pedoman Pelaksanaan Pendidikan Karakter*. Jakarta: Badan Penelitian dan Pengembangan, Pusat Kurikulum dan Perbukuan, Kementerian Pendidikan Nasional.
- [2]. Aqib, Zainal dan Sujak. 2011. *Panduan dan Aplikasi Pendidikan Karakter*. Bandung: Yrama Widya.
- [3]. Bertens, K. 2011. *Etika*. Jakarta: Gramedia.
- [4]. Gymnastiar, Abdullah. 2013. *Membangun Karakter Baik dan Kuat*. Bandung: Darut Tauhid.

- [5]. Gunawan, Heri. 2012. *Pendidikan Karakter: Konsep dan Implementasi*. Bandung: Alfabeta.
- [6]. Gunawan, Adi W. 2012. *Genius Learning Strategy, Jakarta: Gramedia*.
- [7]. Hamalik, Oemar. 2009. *Psikologi Belajar & Mengajar*. Bandung: Sinar Baru Algensindo.
- [8]. Judarwanto, Widodo. 2008. *Diagnosis Autism*.
- [9]. Koesoema, Doni. A. 2010. *Pendidikan Karakter: Strategi Mendidik Anak di*
- [10]. *Zaman Global*. Jakarta: Grasindo.
- [11]. Mulyasa, E. 2012. *Manajemen Pendidikan Karakter*. Jakarta: Bumi Aksara. Poerwadarminta, W.J.S. 2007. *Kamus Umum Bahasa Indonesia*. Jakarta: Pusat
- [12]. Bahasa Departemen Pendidikan Nasional.
- [13]. Puspita, D. 2000. *Teknik dan Metode ABA (Applied Behavior Analysis)*. Jakarta: Yayasan Anak Autistik.
- [14]. Syarbini, Amirulloh. 2016. *Pendidikan Karakter Berbasis Keluarga*. Jogjakarta: Ar-Ruzz Media.
- [15]. Sugiyono, 2013. *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung:
- [16]. Alfabeta, CV.
- [17]. Tirtaharja, Umar. 2005. *Pengantar Pendidikan*. Jakarta: Rineka Cipta. Yuwono, Joko. 2009. *Memahami Anak Autistik*. Bandung: Alfabeta, CV.

# Empathy to Build Awareness of Online Law

Rakhmat Nopliardy, Nurul Listyani

Faculty of Law, University of Islam Borneo (UNISKA) Muhammad Arsyad Al Banjari Banjarmasin  
Email of the coresponding author: rakhmat\_nopliardy@uniska-bjm.ac.id

**Abstract.** This article aims to use empathy in the process of building legal awareness in the era of industry revolution 4.0. with a good legal awareness through hermeneutic approach will strengthen the role of law to provide certainty and justice, online communication can provide a different perception space so that it becomes one of the factors that can trigger the conflict and social tensions that encourage a moral shift of society who in his life get the convenience of utilizing digital technology such as virtual world both social media and online applications both paid and free. Ethics and morals in the perspective of legal psychology underlying empathy will reinforce the fulfillment of the comprehensive principles of justice that are necessary in building a legal consciousness with empathy in a society in the current disruption era in order to utilize technology civilized, intelligent and creative for obedience and order law. To understand the role and function of building legal awareness with empathy in the online legal order the author considers there are four main ways: 1) law as science, 2) law as policy, 3) law as culture, and 4) empathy.

**Keywords:** *Building, Legal Awareness, Online, empathy.*

## 1. Introduction

Indonesia as the largest archipelagic state should have an infrastructure that connects all people, natural resources, raw materials, and various other networks. This can all be a whole network or a seamless network. Various data can be taken as a result of every point of activity. This is called Big Data<sup>110</sup>. Now the era of network development that we should have passed together consciously or unconsciously we walk along with the needs of nation and state.

Today citizens of the world have many opportunities and facilities to connect with mobile devices, the discovery of byte byte data processing speeds of internet, the development of hard drive data storage capacity has increased the capacity of human knowledge beyond the conventional system obtained by children in school, how access to science is so openly real, unlimited and unprecedented. All this is no longer a dream, but has become a new technological breakthrough in the field of robotics, Internet of Things, autonomous vehicles, 3-D based printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing<sup>111</sup>.

The various realities of the existing technological innovations are obviously happening not without cause. This is in line with the existence of technology and informatics that have an enormous impact on the changes and innovations that we feel. The need for effective and successful results enables producers to innovate and breakthrough into the lives of consumers, so that markets in the current sense of the place become conventional, characterized by a low level of relationship among principals, that agents act strategically to form a competitive advantage in such a way that the interaction between the two agents is facilitated by the third actor (Granovetter 1973, Burt 1992, Uzzi 1997)<sup>112</sup>.

If we look in detail did not rule out, the innovations made by old business actors who utilize online media raises the factor of horizontal conflict with other manufacturers located in the

---

<sup>110</sup> Jennie M. Xue, 2014, *Revolusi Industri dan Big Data*, KONTAN 17 Februari - 23 Februari 2014, p. 27

<sup>111</sup> Klaus Schwab, *Executive Chairman World Economic Forum*

<sup>112</sup> Krishna, M.; Paul, G. D. Bino, *The structure of Collaboratioan Networks: An Illustration of Indian Economics*, Journal of Social Structure, Vol. 18, 2017

conventional comfort zone<sup>113</sup>. Where the use of technology makes it easier for consumers to access the production of goods or services of the maximum service with an efficient cost almost indefinitely space and time. This may affect transaction norms and relationships between business actors and consumers. In a recent survey, Rosenfeld and Thomas (2012) found that the internet quickly replaced traditional relationships, including families, schools, neighborhoods, workplaces and friends<sup>114</sup>.

From these various descriptions it becomes important in this paper to build a real online legal awareness when put to good use and emphasize the attitude of empathy will be mutually supportive. Nevertheless, with the study method of descriptive socio-legal case of innovation in the use of technology that caused miscommunication is found in several regions in Indonesia such as Public Transport Online with application, online trading with application, social media, and others. With these emerging problems, the paper will show building online legal awareness is the need of scientific determinants with hermeneutic analysis knives how the regulation of text and context, can encourage the attitude of empathy raises morality and mutual implicative moral responsibility in utilizing the informatics technology. Furthermore, it needs to explore how to build legal awareness from the contextual side by empathizing in online surfing using cyber media. Last but not least is the implication of legal awareness raising a solution with an empathetic attitude in the internal life of a law communicate is the basis for the exercise of freedom and personal development to sacrifice strictly so that law as a limiting in the short-run relationship of human happiness as a necessary price of civilization and security<sup>115</sup>.

## 2. Law as Science

Law Science is a science with a special character. Thus the science of law is a separate science (*sui generis*)<sup>116</sup>. So that the quality of science feels in a difficult situation to be grouped on one branch of the science tree, both the branch of natural science, the branch of social science, and the humanities branch<sup>117</sup>. But based on scholarly characteristics, according to Bernard Arief Sidharta<sup>118</sup>, the science of law belongs to a group of practical sciences, although as medicine, the science of law occupies a privileged position in the classification of science, not because it has a long history, but also because of its nature as a normative science and its direct impact to human life and society carried by its nature and its problems. So in the context of legal awareness development seen in the sociological dimension requires an empathy attitude because it is directly related to life and live in a community that has a social order into internal and external agreements in relationships between communities. Prevention of miscommunication becomes more important than law enforcement when miscommunication results in horizontal problems.

## 3. Law as a policy

Kliejn Policy as a conscious and systematic action, by using means that fit with clear political objectives as a step-by-step goal<sup>119</sup>. Jim A Kuypers Policy as an arrangement of: **a.** objectives chosen by public administrators for both self-interest and group interests. **b.** the means and times they choose<sup>120</sup>.

---

<sup>113</sup> Edy Suandi Hamid, 2016, *Disruptive Innovation: Manfaat Dan Kekurangan Dalam Konteks Pembangunan Ekonomi*, Jurnal Al-‘Adl, Vol. 9, NO. 2.

<sup>114</sup> Felmler, Diane H.; Kreager, Derek A., 2017, *The Invisible Countours Online Dating Communities: A Social Network Perspective*, Journal Of Social Structure, Vol. 18.

<sup>115</sup> Spinoza, 1982, “*The mind's conatus, or power, is the very essence of the mind*”, IIIp54dem, p. 136.

<sup>116</sup> Philipus M. Hadjon, *Pengkajian Ilmu Hukum Dogmatik (Normatif)*, dalam “Yuridika”, Jurnal Hukum Universitas Airlangga Surabaya, No. 6 Tahun IX, November – Desember 1994, p. 1.

<sup>117</sup> Titik Triwulan Tutik, 2014, *Hakekat Ilmu Hukum Ditinjau dari Filsafat Ilmu dan Teori Ilmu Hukum*, Jurnal Hukum dan Pembangunan Tahun ke-44 No.2 April-Juni 2014

<sup>118</sup> Bernard Arief Sidharta, 2000, “*Refleksi Tentang Struktur Ilmu Hukum*”, Bandung: Mandar Maju, p. 113.

<sup>119</sup> Kliejn, 1978, *All Agreements are translated from Patries Haberer at al.*, De Buurtaanpak (The neighborhood approach). The Hague : State Publisher.

<sup>120</sup> A Hoogerwerf, 1973, *Isi dan Corak-Corak kebijakan (Overhead Beleid)*, Terjemahan R.L.L. Tobing, Jakarta, Erlangga, hlm. 7

In Friend's view Policies are essentially a position that once declared will influence the success of decisions to be made in the future<sup>121</sup>. Carl.J.Friedrick Policy as a series of actions proposed by a person, group or government in a particular environment by showing obstacles and opportunities for the implementation of the policy proposal in order to achieve certain goals<sup>122</sup>. James E Anderson Policy is a set of actions that have a specific purpose that is followed and implemented by a person's offender or a group of actors to solve a particular problem<sup>123</sup>.

#### 4. Law as a culture

As Lawrence M. Friedman argues that legal culture or legal culture can be interpreted as a pattern of knowledge, attitudes, and behavior of a group of people against a legal system. From these patterns, we can see the level of integration the society with a visible legal system Easily. this level of integration is characterized by their level of knowledge, acceptance, trust and dependence on the legal system<sup>124</sup>.

The legal culture is the common common response of a particular society to the legal phenomena. The response is a unified view of legal values and behavior. Thus a legal culture shows the pattern of individual behavior as a member of society that describes the same responses to the living law of the community concerned<sup>125</sup>

Based on some of these opinions, it can be said that the culture of a nation is very influential on the condition of the nation's legal consciousness. Therefore, the discussion of the legal consciousness of a nation is greatly influenced by the development of its society, including the influence of socio-cultural values which is the soul of a nation (*volkgeist*). Similarly, said by Esmi Warassih Pujirahayu (2005: 96), in talking about the law we can not be separated from other non-legal factors, especially the value factor and attitude and public opinion, all of which are called legal culture<sup>126</sup>. Law reform begins with a culture renewal or a legal culture because the existence of a legal culture greatly affects the substance and structure of the law.

Legal culture according to Satjipto Rahardjo is the values and attitudes of society that can affect the workings of the law<sup>127</sup>. Lawrence M. Friedman uses the term legal culture to describe a number of interrelated phenomena. The legal culture / legal culture as intended by Lawrence M. Friedman is the whole of the public attitudes of the public and the values in society that will determine opinions about the law<sup>128</sup>. Thus the existence of legal culture becomes very strategic in determining the choice to behave in accepting the law or reject the law. In other words a law will be a law that is really accepted and obeyed by the community is largely determined by the legal culture of the community concerned<sup>129</sup>.

Based on Lawrence M. Friedman's opinion, the legal culture can be interpreted as a pattern of knowledge, attitudes, and behavior of a group of people against a legal system. From these patterns, it can be seen how far a society can accept the existence of a legal system<sup>130</sup>. This legal culture is also interpreted as an atmosphere of social thought and social forces that determine how the law is used,

---

<sup>121</sup> Imam A Saucani & A. Ahsan Tohari, 2010, *Dasar-dasar Politik Hukum*, Cetakan ke 6, Jakarta, PT. Raja Grafindo Persada, p. 22.

<sup>122</sup> Carl.J.Friedrick, *Man and His Government*, (New York: Mc Grow Hill, 1973), p. 79

<sup>123</sup> James E Anderson, *Public Policy Making* (New York, Paeger Publisher, 1979), p. 3

<sup>124</sup> Lawrence M. Friedman, 1989, *Law, Lawyers, and Popular Culture*, 98 YALE L. J. 1579 [hereinafter Friedman, *Law, Lawyers, and Popular Culture*].

<sup>125</sup> Hilman Hadikusuma. 1986, *Hukum Kekkerabatan Adat*, Fajar Agung. p. 11

<sup>126</sup> Esmi Warassih Pujirahayu, 2005, *Pranata Hukum: Sebuah Telaah Sosiologis*, Suryandaru Utama, Semarang. p. 96.

<sup>127</sup> Satjipto Rahardjo, 1983, *Permasalahan Hukum di Indonesia*, Alumni, Bandung. p. 12.

<sup>128</sup> Lawrence M. Friedman, 1980, *Sistem Hukum perspektif Ilmu Sosial*, Nusamedia, Bandung.

<sup>129</sup> Any Ismayawati, *Pengaruh Budaya Hukum Terhadap Pembangunan Hukum Di Indonesia (Kritik Terhadap Lemahnya Budaya Hukum di Indonesia)*, PRANATA HUKUM Vol. 6 Nonor 1 Januari 2011

<sup>130</sup> Friedman M. Lawrence, 2009, *Sistem Hukum ; Perspektif Ilmu Sosial (The Legal System ; A Social Science Perspective)*, Bandung: Nusa Media, p. 33.

avoided, or abused, the following attitudes and values that affect both positive and negative effects on behavior related to law enforcement are: legal structure, legal substance, and legal culture<sup>131</sup>.

Daniel S. Lev distinguishes the legal culture in two maca. The first is "Internal Legal Culture, which is the legal culture of citizens who carry out specific legal duties, such as lawyers, police, prosecutors and judges, and Second," External Legal Culture ". namely the legal culture of society in general / society at large<sup>132</sup>. Daniel S. Lev sees that in order to understand legal culture, there are practical ways that can be done by taking into account two indicators, namely (1) values related to social governance and conflict management. These values are the basis of the culture of the legal system and are helpful in determining the "place-giving system" of legal, political, religious and other institutions at any place and time in the history of a society: (2) basic assumptions on the dissemination and use of existing resources in society, social good and bad and so forth. These assumptions, continued Daniel S. Lev, are in the ideological view of economic, political and social change and are directly proportional to the change of society, with the possibility of culture being special or vice versa<sup>133</sup>.

Based on some of these opinions, it can be said that the culture of a nation is very influential on the legal conditions of the nation. Therefore, to build awareness of community law is strongly influenced by the development of society itself, including the influence of socio-cultural values that are the soul of a nation (*volkgeist*). Similarly, said by Esmi Warassih Pujirahayu (2005: 96), in talking about the law we can not escape from other non-legal factors especially the value factor and the attitude and views of society, all of which are called legal culture<sup>134</sup>. So basically reform (development) law must start from the renewal of culture or legal culture because the existence of legal culture greatly affect the substance and structure of law. The thing that needs to be noticed in legal development is that the legal culture of Indonesia is changing along with the changes occurring within the Indonesian society itself. The formation of legal culture can not be separated from the consideration of culture and characteristics of society. The legal culture that grows in society is the embodiment of the order of values which is the foundation of the foothold in the nation and the state. This is very influential on the end results of legal development, for it needed a step to change the legal culture can actually increase the development of law with the results that can help realize the ideals of the Indonesian nation.

It can be argued that the legal culture is the whole of the factors that determine how the legal system can be accepted within the cultural framework of society, therefore the so-called legal culture is none other than the whole factor that determines the existence of the legal system to obtain its logical place in the cultural framework belongs to the general public. In short it can be said that the so-called legal culture is the overall attitude of the citizens and the value system that exists within society that will determine how the law should apply in the society concerned. The growing legal culture in society is a manifestation of the values that are the foundation of a nation and state. Legal culture is not a personal culture but a whole culture and a particular society as a whole of attitudes and behavior.

Thus from some sense of legal culture we can understand that the legal culture of Indonesia is going on the movement along with the changes that occur in the Indonesian society itself. The crucial problem now a days is the degradation of legal culture in the community. The legal culture of the Indonesian nation today is also influenced by the pressure of the industry revolution era 4.0. In this era we can see from the behavior of Indonesian life that describes it. a very easy example to see is the change of thinking in the face of a dispute. Formerly the Indonesian nation in resolving the dispute, the disagreement was resolved by deliberation for consensus, in a peaceful way, but the present development of each dispute arose more and more resolved in court, although everyone knows that there is a shift of justice in the courts so it is no longer a place to seek justice . On the other hand many of the behaviors that harm the society are not resolved. This does not mean that there are no rules,

---

<sup>131</sup>Lawrence M. Friedman, 1980, Friedman M. Lawrence, Lawrence M. Friedman, *American Law An Introduction (Hukum Amerika sebuah Pengantar)* Second Edition, Penerjemah Wishnu Basuki, (Jakarta : Tatanusa , 2001), p. 7-8.

<sup>132</sup>Daniel S. Lev. 1980, *Peradilan Agama Islam Di Indonesia*, Intermedia, p. 192-193.

<sup>133</sup>*Ibid.*

<sup>134</sup>*Ibid* Esmi Warassih Pujirahayu (2005, p. 96)

laws and weak legal structures. but because of the weakness of legal culture and the level of legal awareness began to decline.

The legal awareness of Indonesian society has grown steadily no better but has declined. This is because the legal culture of the Indonesian nation has shifted to a materialistic behavior. Growing views are not only triggered because of the ineffectiveness of the law. The ineffectiveness of this law in addition to many legal products that are not in accordance with the soul and values that live in Indonesian society but rather to a situation that only thinks for itself does not care about other people, so that people understand the law not because awareness of the significance of the law but rather for fear of law enforcement officials. This condition became the trigger of thinking to the public that the law is the officer. so that if no officer is considered there is no law. If examined in the behavior of the Indonesian nation in the past, the observance of society on a rule not because of fear of the authorities but they are aware of the importance and purpose of existing rules. This can be seen in swapraja regions that have local rules (local wisdom).

The local community will abide by the rules with a high awareness that the rule is for the good without any officer always supervising and arranging the implementation of the regulation. The high legal culture of the people is a society that does not tend to violate the law even though no law officer sees it.

## **5. With the Empathy Behavior of Building Legal Awareness**

Judging from the substance of the law, we can see the consciousness of the law is not a law because it has never obtained a proof that the content of legal awareness is indeed true. We can not say for instance that a legal awareness of a living environment for example exists or the legal consciousness of all members of society or of the great majority demands a thing. We are blind to that. So that legal consciousness is nothing but a shadow or a vague assumption about what it should be 'by law or simply by public opinion. To realize the proof then we must master all the circumstances and must be considered before all the factors that lead to the department.

Legal awareness in law reform can not be absolute release from society. This means that what is encountered is social realities in a broad sense. As in Indonesia, where heterogeneous societies with different levels of society, from simple to complex societies, will face differentiation which then leads to the structure of society. In simple society the law arises and grows together with the life experiences of citizens. Here the organizers make more regulation of the law that grows and develops in the community, on the contrary it seems to happen in a complex society law is difficult for the emergence of law from below. A high degree of differentiation in its structure brings consequences to a variety of categories and interests that do not rule out conflicting possibilities. Although the law comes and is determined from the state organizers, the source remains from the community.

The general formulation of the reactions of legal consciousness in more concrete terms is then made a general rule of law awareness is difficult because new legal consciousness reacts if human beings are aware of their responsibility in making decisions about a matter. In the legal order operating in a society is basically the embodiment of the legal ideals embraced in the society into various sets of rules of positive law, legal institutions and processes (the behavior of state administrators and citizens means that in essence the law as a behavioral code of society rooted in the ideas, tastes, intentions, creations and thoughts of society itself).

Humans are born already in the midst of life, in the midst of history, society, religion, politics, language and culture. We all live in life in another world, from institutions, laws, with sophisticated goals, and the temptations of civilization.

However, the romanticism of the natural life of social harmony in a civilization, human nature is in the circle of the power of disruptive civilization began felt by the perpetrators of life. The advantages of society as a society he clearly holds far greater than the almost insurmountable solitary life<sup>135</sup>, "and" from the experience finding that they can more easily meet their needs by helping each other and even more, here there is no individual thing in a universe that is more profitable to humans

---

<sup>135</sup> Davies, 2011, *treatment of the broad philosophical implications of Jaak Panksepp's discoveries in affective neuroscience.*

than to human beings who live with empathy. Yet all, or almost all, in the ethical node is a route to the legal consciousness that encourages the birth of various virtues<sup>136</sup>.

As a creature who always wants to mix with other human beings, humans will be in silence if life is outside the network of order, whatever form and purpose both internal and external. Sociologically illustrates<sup>137</sup>, that humans are a group of people who must make extensive communication with various problems both personally and community. The personal and community relationships go naturally along with each other's needs, so for that to require this social networking network, specifically the author uses the writings of Vincent Jeffries and H. Edward Ransford Social Stratification a multiple hierarchy approach, especially about The Multiple Hierarchy Model and The Ideology of Ethnic Stratification as a connecting knife. Some approaches that the author uses in this tulsian are; first, the social stratification that exists in society is a single hierarchy model (SingleHierarchy Model) and multiple hierarchy model (Multiple Hierarchy Model)<sup>138</sup>. A single hierarchy model, there are two assumptions, that the family is the right unit to form empathetic attitudes and community norms to be used in social stratification systems. While the compound hierarchy expose the online users in understanding the legal norms in building a good relationship. Man wants to be bound and bond made it himself, but at the same time he seeks to escape from the bond he made himself, when felt not fit anymore. Then at the same time most humans are unaware of their thinking and disobey the rules they make themselves.

Schuyt and Ellickson in Satjipto Rahardjo say that the law is not always true, it does not monopolize the truth, the law can be wrong. Here disobedience to the law needs to be heard and accepted as an attempt to correct something that is not true. There was a continuous struggle between law making and rule breaking<sup>139</sup>. In this disruptive era, one of the problems that still arises is the shifting of community empathy that encourages legal awareness and legal obedience is not evenly distributed in society, so then the law that is interpreted justice experience turbulence from the many law enforcement process because the legal principles are more appreciated as a mere procedural technical issue. Many people who think as innocent as they have not been prosecuted despite ethical and moral violations, uncontrolled behavior and disobedience to the law<sup>140</sup>, have not yet been proven to be legally wrongful in court. The result then becomes a game tool to seek victory in disputes or litigation in courts and not to uphold justice, truth and order in society. Law enforcement then plays or gets trapped in the game of norms regardless of human beings as subjects who must be served with justice and ethical and moral<sup>141</sup> based law accompanied by awareness and legal obedience.

Ethics and morals in the perspective of the psychology of the law based on empathy will reinforce the fulfillment of the elements of comprehensive justice, Titchner (Goleman, 2003) states that empathy comes from a kind of physical imitation of the burden of others, which then gives rise to similar feelings in a person<sup>142</sup>. According to Johnson empathy is a tendency to understand the condition or state of mind of others<sup>143</sup>. A person who empathizes is described as a tolerant, friendly, self-controlling, humanistic individual. Taufik (2012) defines empathy as an activity to understand what other people are thinking and feeling, and what the observer thinks, perceiver, of the condition that other people are experiencing without lossing control of themselves<sup>144</sup>, Empathic concern (Empathetic attention), is one's orientation towards others in the form of sympathy, pity, and care for

---

<sup>136</sup> Spinoza, 1982, writes in III, *Definition of the Emotions*, p35s, p. 173

<sup>137</sup> Álvaro Morcillo Laiz & Klaus Schlichte, *International organizations, their staff and their legitimacy: Max Weber for IR*, Cambridge Review of International Affairs, p. 29:4

<sup>138</sup> Vincent Jeffries and H. Edward Ransford, 1980, *Social Stratification a multiple hierarchy approach*, (Boston : Allyn and Bacon, Inc), p. 3-12.

<sup>139</sup> Satjipto Rahardjo, 2008, *Biarkan Hukum Mengalir*, (Jakarta : Kompas), p. 7

<sup>140</sup> Ibid

<sup>141</sup> Mahfud MD, 2009, *Konstitusi dan Hukum dalam Kontroversi Isu*, (Jakarta : Rajawali Press), p. 68

<sup>142</sup> Goleman, Daniel, 2003, *Emotional Intelligence: Why It Can Matter More Than IQ*, New York.

<sup>143</sup> Sari, A. T. O & Eliza, M. 2003. *Empati dan Perilaku Merokok di tempat umum*. *Jurnal Psikologi*, No. 2, p. 81-90

<sup>144</sup> Taufik., 2012, *Empati: pendekatan psikologi sosial*. Jakarta: Raja Grafindo.

others who have difficulty. This aspect relates positively to emotional reactions and helpful behavior to others<sup>145</sup>.

Epistemologi about building online law awareness online in surfing in the virtual world with the attitude of reading and empathy in looking at online narratives, metaphors from the moral laboratory approached a brief summary of research and theory. In absorbing narratives can stimulate the imagination of empathic. The reader along with the author / narrator in a thought experiment (fictitiously), imagines how it will be in the shoes certain characters, with certain motives, in certain circumstances, meet certain events. That would explain why narration can produce an expansion of the reader's consciousness, especially so as to include fellow human beings. Fiction can stimulate the reader to consider the narratives they read as mind experiments, creating distance between them and events, allowing them to experiment more freely by taking on different character positions of themselves, also in moral terms. Literary features, such as ambiguous gaps and characterization, can stimulate the reader to make more mentally conclusions, thus practicing their mind theory<sup>146</sup>.

Law and psychology are different, when viewed from the point of difference. But psychology and law are also the same, when viewed from the similarity. Where do we want to see? When viewed from the formal object is different. On the other hand the material objects are both equal, human. If both deal with human problems, why not cooperate? By understanding the problem was not excessive if the author expects philosophical reflection using psychology in building the character of law. Because the expected contribution of psychology to the contextual side contributes to the development of legal consciousness as reflected in Hutchins' (1933) statement that law is always based on assumptions about how people behave and psychologists know how people behave. Interesting question above. Judging from the year when it was delivered it shows a long-standing awareness of how much relevance involves psychology in legal matters. The consciousness arises precisely because the jurists are aware that the law can not be merely in the book but more important is how the law is in behavior. In other words, the expansion point of view from law in books to law in actions brings psychology to participate in various aspects of the law<sup>147</sup>.

Hutchins believes in prosperity, technology and "" world order "" to bring the 21<sup>st</sup> century the implications of building legal awareness through education both at the level of internal and external communities are efforts to help people become intelligent in order to develop the ultimate power in understanding the construction of conscious building their laws.

The potential of empathy to be included as an important element in living, especially in building legal awareness. This challenges the conception of legal practice, although it must still refer to an increase in empirical facts that show the interaction between cognition that affects and reflects the reality of emotion in the practice of life.

"The absence of human power to control and observe the emotions themselves and others so it is very susceptible to the luck that the era of disruption where we have to start remembering constantly and repeatedly to be able to avoid the pressure from the effects of innovation technology that continues to move dynamically even though in fact simplify human life, but along with it innovation technology has a strong compressive power to the aspect of life of the nation and state whether consciously or not.

Deeper and more basic level descriptions, is when humans are confident to free surf using technology they are aware of their actions and do not know what the cause of that freedom is. Empirically has provided evidence to support this insight and an explanation of Emotions and that related to empathy are the necessary causes of our actions, he is in control of the mental decisions no more than the lust itself. His deeds are the necessary result or expression of emotions, desires, and thoughts. In addition, Spinoza regards emotion as the expression and manifestation of one's passive or active posture in the world<sup>148</sup>.

---

<sup>145</sup> Mark H. Davis, 1980, *A Multidimensional Approach to Individual Differences in Empathy*, JSAS Catalog of Selected Documents in Psychology, 10, p. 85.

<sup>146</sup> Hakemulder, Jemeljan, 2000, *The Moral Laboratory. Experiments Examining the Effects of Reading Literature on Social Perception and Moral Self-Concept*, Amsterdam.

<sup>147</sup> Hutchins, Robert Maynard, 1899-1977, *The Learning Society*, New York: Frederick A. Praeger, 1968, p. 142

<sup>148</sup> Spinoza, 1982, writes in III, *Definition of the Emotions* #1, p. 142

They include affective and cognitive components, as well as expressive or passive postures. Spinoza goes on to tell the reader that our actions stem from the formation of our minds by our memories. Without memory, he says, we can not act at all. "We can not take action from mental decisions unless memory comes into play," he wrote<sup>149</sup>. Memory, in turn, is determined by its causal antecedents and context, since "it is not within the unconstrained mind power of the mind to remember or forget anything"<sup>150</sup>. Online users harbor the illusion that our unbound mental decisions rather than what they actually do are driven by imagination and memory. For those "who believe it they ... do anything from the mindless lifestyle decisions that their eyes dream openly after being in cyberspace.

But the mind does not have the power of will in empathizing to avoid personal or group interests that we have, the power of the mind to meditating on himself and forming more adequate ideas (Spinoza, 1982, p4, p.206). Thinking of playing with the same needs as the body of the cause. In fact, Spinoza considers thinking and doing, thinking and acting, as aspects of the same necessary process playing in each of us and in Nature as a whole. In addition, Spinoza argues that thinking is affective in nature. It is because "the mind and the body are one and the same thing" (though understood in two different ways: Spinoza, 1982, IIIp2s, pp. 107). Consequently, thinking is manifested, and action is the expression of our desires. Therefore, desire is not just something that everyone has among other capacities and abilities, but that is our basic essence, empathy to survive and advance ourselves in order to change our own desires and thoughts to care for others, from passive active, from disruptive era pressures. How did this happen and how did it work? It is the process of thinking, through practice, and it can be taught how to empathize to change our desires, in the daily life of the little ones, which is basically the desire to do good with what we have. Thus our mind can intervene to change our ignorance to others, and this must be done continuously, thus forming attitudes and beliefs that will encourage legal awareness in living both internally and externally<sup>151</sup>. Why is this so? Spinoza tells us that there are only two ways we can understand our world and our experience, "well as far as we imagine [things] exist in relation to time and place, or as far as we imagine them to follow from necessity nature"<sup>152</sup>. Spinoza draws contrast here between a local perspective and a universal perspective, and between an imaginative cognitive understanding and a rational understanding. Local is also passive while the universal one must be found for ourselves and hence he called it active. We find the following more detailed mental description of passive vs. mental activity: the limitations of the mind we have, not enough, but only the confusing knowledge, of itself, of his own body, and of the external bodies, as long as he feels the things of the natural order the common, that is, as long as it is determined externally, from chance meeting with things, to regard this or that, and not so long as it is internally determined, from the fact that it considers a number of things at once, to understand their covenants, differences, and contradictions. For so often as it is disposed internally, in this or any other way, it sees things clearly and clearly. In passive thinking, the links that fill our self-understanding of ourselves and the world are picked up passively by the mind from the ways in which the local context - that is what Spinoza refers to 'the common commands of nature' connect or connect things with one another and ourselves with and in our immediate time and place<sup>153</sup>. Therefore the mind is passive, its weakness, its firmness because of its nature embedded in its direct external state, its narrow context, who write themselves unfocused in our minds and fill each of us with an external association of time and place. And we act only from this superficial and passive (and we will add today, 'unconscious') understanding of who we are.

The problem is our knowledge is not enough for who we really are but only partially and confused. It also presents affective (emotional and motivational): for, as Spinoza wrote, "man does need to always submit to passive emotions and follow the general rules of his environment, and obey them"<sup>154</sup>. The amount for passive acceptance and event surrender to our own corner of the world, our

---

<sup>149</sup> Spinoza, 1982, IIIp2s, p. 107

<sup>150</sup> Spinoza, 1982, IIIp2s, p.108

<sup>151</sup> Spinoza, 1982, IVp27, p. 169

<sup>152</sup> Spinoza, 1982, Vp29s, p. 218

<sup>153</sup> *ibid*

<sup>154</sup> Spinoza, 1982, IVp4cor, p. 158

own moment, and the non-reflective embodiment of our narrow experience with all their emotional tyranny and motivation.

The social interaction between involved social actors is reviewed by Herbert Blumer, 1969<sup>155</sup>, the theory of symbolic birth of interactionism with terminology: Behavior must be noticed so much in terms of what its meaning to others and society in general but what it means you, the actor. Also the way other people respond or respond to your behavior greatly affects your own response and reactions. We all live in the perfection of our own perception of reality, which we read the correspondent, not the truth, and we act in an interreact incordance at all or read the situation, which includes from our perception of why others are reading it<sup>156</sup>. If the symbolic theory of interactionism is traced, it is rooted in pragmatism or intrumentalism from the theory of social recognition / social psychologist George Herbet mead. This viewpoint that the human mind is not photocopies from the outside world, but is the result of human activity in a macro environment. The actor will weigh, assess and ultimately choose certain attitudes and bounds of the various possibilities that exist through thinking as an individual process of integrating with oneself, the individual choose the stimulus that will be in response<sup>157</sup>. In this active process, the human mind not only acts as an instrument to act or behave but to be part of human attitude and behavior, human behavior always begins with the process of understanding and interpretation.

If the symbolic theory of interactionism is traced, it is rooted in pragmatism or intrumentalism from the theory of social recognition / social psychologist George Herbet mead. This viewpoint that the human mind is not photocopies from the outside world, but is the result of human activity in a macro environment. The actor will weigh, judge and ultimately choose certain attitudes and bounds of the various possibilities that exist through thinking as an individual process of integrating with oneself, the individual choosing which stimulus to respond to<sup>158</sup>. In this active process, the human mind not only acts as an instrument to act or behave but becomes part of human attitude and behavior, human behavior always begins with the process of understanding and interpretation.

The three reasoning in the author's mind that can be conveyed from Herbert Blumer's view is: First that man acts toward things on the basis that there are things for them. Such include everything that human beings may be concerned about is objective word-physical, such categories as humans such as friends or enemies, institutions, guiding ideals. The Second is the meaning of such things being bullied, or else arising from the social interaction that someone has someone follow. Third is this meaning is made, and modified through the interpretative process used by those who suffer from idealing no matter what he encounters<sup>159</sup>.

Through the content of basic values in law, the law aims to protect the interests of the society in relation to the movement of rights and obligations to the realm of equilibrium<sup>160</sup>. According to Gustaf Radbruch, the existence of law is intended for the existence of justice, certainty and usefulness<sup>161</sup>. Laws with values want to realize that their presence is intended to protect and promote values as a basis for legalizing the presence and operation of the law. The solution of the problem of law today, through the hermaneutic approach to the tendency which the postmodernists disregard<sup>162</sup>, albeit historically hermaneutic actually not a new approach at all. As a moment of knowledge in the field of scholarship, hermaneutik actually has developed since the days of ancient Greece. The first person to popularize hermaneutics was Schleiermacher, who was later subjected to 20th century figures such as

---

<sup>155</sup> Herbert Blumer, 1969, *Symbolic Interactionism: Perspective and Method*. Berkeley: University of California Press. In this seminal work, Blumer delineates symbolic interactionism as a distinct sociological framework. In developing the ideas of GH Mead into a set of basic propositions, Blumer's text is perhaps the definitive source on interactionist theory and method. This work inspired a legion of scholars in the years to come after its publication, and it remains an often-cited work across sociology. p. 5. 79

<sup>156</sup> J.E Hall Williarms, 1982, *Criminology and criminal justice*, Butterworth; 1st Ed. Edition, p. 142

<sup>157</sup> Blumer H (1962) *Society as symbolic interaction*. In: Rose AM (ed.) *Human Behavior and Social Processes*. Boston: Houghton Mifflin Co., p. 179–92.

<sup>158</sup> *Ibid*

<sup>159</sup> *Ibid*

<sup>160</sup> Endang Sutrisno, 2007, *Bunga Rampai Hukum dan Globalisasi*, Yogyakarta, Genta Press, p. 167

<sup>161</sup> Theo Huijbers, 1982, *Filsafat Hukum Dalam Lintasan Sejarah*, Jogjakarta, Kanisius, p. 162

<sup>162</sup> Bruggink, JJ. H., 1996, *Refleksi Tentang Hukum*, Alih Bahasa Arief Sidharta, Cipta Aditya Bakti, Bandung, p. 209

Wilhelm Dilthey, Martin Heidegger, Hans Georg, Paul Ricoeur, and Jacques Derrida. According to Schleiermacher, everyone is able to return to the inner process of the author of the text. Thus, the method of legal discovery based on the text (text) of legislation, doctrine, etc. can be highlighted by this hermeneutic approach<sup>163</sup>. The re-emergence of the hermeneutic paradigm in social studies and humanities takes place along with the emergence of a postpositivism paradigm called constructivism. These people are suing and questioning the truth of positivist statements about what is called the variability principle and the theory of neutrality of observation<sup>164</sup>. Building awareness of community law, can be seen from the presence or absence of a person's willingness subject to obey the law, obedience to the law, it is determined by his consciousness, that is what is in the sociology of legal literature called Legal awareness<sup>165</sup>. The meaning of legal awareness here is the mental condition of a subject when must face up an imperative normative to determine the choice of behavior, which is complete two-dimensional. The first dimension of his cognitive dimension, his knowledge of the laws governing certain behaviors he performs (whether forbid, whether ordered). Meanwhile the so-called second dimension is its effective dimension, namely its insistence that the law it knows is actually to be obeyed<sup>166</sup>. Soetandyo Wignjosoebroto asserted, there are actually two obedience, namely the outward fidelity and the obedience that permeates to the inner<sup>167</sup>.

## 6. Conclusion

The development of national legal awareness in the perspective of the disruptive era, must pay attention to the procedure of the law of the law, all institutions of society both internal and external cultivate legal awareness with empathy attitude in doing online activities both verbal and narrative, convey information wisely and wisely, holders of sovereignty in accordance with its function of social control of government institutions in organizing the state dimension of solidarity and justice as an effort to revitalize legal awareness and reflect in the life of nation and state.

With the infradiscipline it can be drawn to the thread that law has some convergence, since both embrace the positiveness, mere peculiarity and axiology, the law can be established with a real moral norm based on an empathetic attitude that implies beyond the principles of justice. In addition, psychologically it can be argued that the biological nature of man is a stepping stone in every case to define the overall purpose of the law. Besides the nature of human biology is the source of sociolitas, the psychic attachment, which makes the emotional union of the individual into a possible group. However, in the specific elaboration of human biology we can see from the beginning of space and time in building legal awareness in interacting generally and online specifically.

In the life of the nation and the state of the legal consciousness of the Indonesian nation has been thinned from the nature, personality and identity of the Indonesian nation. The depletion of legal awareness of the Indonesian nation is influenced by internal and external factors. The internal faculty deals with the empathy and the understanding of the Indonesian nation in carrying out the law, while the external factor is related to the development of information and technology, the ideas or the influence of thought from the foreign culture so quickly absorbed by society. The condition of legal awareness in Indonesia is one of the factor that resulted in the state of life of the nation and state is mentally ill, because the metabolism of public legal consciousness is being disturbed, according to the author of legal awareness is one of the elements in the process of law development that is very influential, as well as in law enforcement. The formation of law and law enforcement is a manifestation of the development of legal awareness, it can be said that the legal awareness of the law will be negative in the process of law development.

Based on the above conclusions, the things that need to be suggested are as follows: First, Need to improve the model of higher education law that has only studied the law alone, now and in the future need sociological and psychological approach with emphasis on increased legal awareness. Second, the establishment of legislation refers to the sociological and philosophical values that underlie

---

<sup>163</sup> Bernard Arief Shidarta, 2006, *Refleksi Tentang Struktur Ilmu Hukum*, Bandung, Cv. Mandar Maju, p. 140

<sup>164</sup> Berger, Peter L. 2001, *Langit Suci (Agama Sebagai Realitas Sosial)*. Jakarta: LP3ES., p. 23

<sup>165</sup> Soetandiyono Wignjosoebroto, 2002, *Hukum, Paradigma, Metode dan Dinamika Masalahnya*, Jakarta, ELSAM, HUMA, p. 373

<sup>166</sup> *Ibid*

<sup>167</sup> *Ibid*

the life of the people of the archipelago, so that the people do not apathetic in the implementation of legislation.

## References

- [1]. Álvaro Morcillo Laiz & Klaus Schlichte, International organizations, their staff and their legitimacy: Max Weber for IR, Cambridge Review of International Affairs.
- [2]. Any Ismayawati, Pengaruh Budaya Hukum Terhadap Pembangunan Hukum Di Indonesia (Kritik Terhadap Lemahnya Budaya Hukum di Indonesia), PRANATA HUKUM Vol. 6 Nomor 1 Januari 2011
- [3]. Bernard Arief Sidharta, 2000, "Refleksi Tentang Struktur Ilmu Hukum", Bandung: Mandar Maju.
- [4]. Bernard Arief Shidarta, 2006, Refleksi Tentang Struktur Ilmu Hukum, Bandung, Cv. Mandar Maju.
- [5]. Berger, Peter L. 2001, Langit Suci (Agama Sebagai Realitas Sosial). Jakarta: LP3ES.
- [6]. Bruggink, JJ. H., 1996, Refleksi Tentang Hukum, (Alih Bahasa Arief Sidharta), Cipta Aditya Bakti, Bandung.
- [7]. Blumer H, 1962, Society as symbolic interaction. In: Rose AM (ed.) Human Behavior and Social Processes. Boston: Houghton Mifflin Co.
- [8]. Blumer H, 1969, Symbolic Interactionism: Perspective and Method. Berkeley: University of California Press.
- [9]. Carl J. Friedrich, 1973, Man and His Government, (New York: Mc Grow Hill)
- [10]. Daniel S. Lev. 1980, Peradilan Agama Islam Di Indonesia, Intermasa.
- [11]. Davies, 2011, treatment of the broad philosophical implications of Jaak Panksepp's discoveries in affective neuroscience.
- [12]. Endang Sutrisno, 2007, Bunga Rampai Hukum dan Globalisasi, Yogyakarta, Genta Press, hlm. 167
- [13]. Esmi Warassih Pujirahayu, 2005, Pranata Hukum: Sebuah Telaah Sosiologis, Suryandaru Utama, Semarang. Hlm 96
- [14]. Edy Suandi Hamid, 2016, Disruptive Innovation: Manfaat Dan Kekurangan Dalam Konteks Pembangunan Ekonomi, Jurnal Al-'Adl, Vol. 9, N0. 2.
- [15]. Felmler, Diane H.; Kreager, Derek A., 2017, The Invisible Countours Online Dating Communities: A Social Network Perspective, Journal Of Social Structure, Vol. 18.
- [16]. Friedman M. Lawrence, 2009, Sistem Hukum ; Perspektif Ilmu Sosial (The Legal System ; A Social Science Perspective), Bandung: Nusa Media.
- [17]. Friedman M. Lawrence, 1989, Law, Lawyers, and Popular Culture, 98 YALE L. J. 1579 [hereinafter Friedman, Law, Lawyers, and Popular Culture].
- [18]. Friedman M. Lawrence, 1980, Sistem Hukum perspektif Ilmu Sosial, Nusamedia, Bandung.
- [19]. Friedman M. Lawrence, 2009, Sistem Hukum ; Perspektif Ilmu Sosial (The Legal System ; A Social Science Perspective), Bandung: Nusa Media.
- [20]. Friedman M. Lawrence, 1980, American Law An Introduction (Hukum Amerika sebuah Pengantar) Second Edition, Penerjemah Wishnu Basuki, (Jakarta : Tatanusa, 2001).
- [21]. Goleman, Daniel, 2003, Emotional Intelligence: Why It Can Matter More Than IQ, New York.
- [22]. Hakemulder, Jemeljan, 2000, The Moral Laboratory. Experiments Examining the Effects of Reading Literature on Social Perception and Moral Self-Concept, Amsterdam.
- [23]. Hutchins, Robert Maynard, 1899-1977, The Learning Society, New York: Frederick A. Praeger, 1968.
- [24]. Hoogerwerf, 1973, Isi dan Corak-Corak kebijakan (Overhead Beleid), Terjemahan R.L.L. Tobing, Jakarta, Erlangga.
- [25]. Hilman Hadikusuma. 1986:11, Hukum Keekerabatan Adat, Fajar Agung.
- [26]. Imam A Saukani & A. Ahsan Tohari, 2010, Dasar-dasar Politik Hukum, Cetakan ke 6, Jakarta, PT. Raja Grafindo Persada.
- [27]. J.E Hall Williarms, 1982, Criminology and criminal justice, Butterworth; 1st Ed. Edition.
- [28]. Jennie M. Xue, 2014, Revolusi Industri dan Big Data, KONTAN 17 Februari - 23 Februari 2014.

- [29]. James E Anderson, Public Policy Making (New York, Paeger Publisher, 1979).
- [30]. Kaus Schwab, Executive Chairman World Economic Forum.
- [31]. Kliejn, 1978, All Agreements are translated from Patries Haberer at al., De Buurtaanpak (The neighborhood approach). The Hague : State Publisher.
- [32]. Mahfud MD, 2009, Konstitusi dan Hukum dalam Kontroversi Isu, (Jakarta : Rajawali Press).
- [33]. Mark H. Davis, 1980, A Multidimensional Approach to Individual Differences in Empathy, JSAS Catalog of Selected Documents in Psychology.
- [34]. Philipus M. Hadjon, Pengkajian Ilmu Hukum Dogmatik (Normatif), dalam “Yuridika”, Jurnal Hukum Universitas Airlangga Surabaya, No. 6 Tahun IX, November – Desember 1994.
- [35]. Soetandiyono Wignjosoebroto, 2002, Hukum, Paradigma, Metode dan Dinamika Masalahnya, Jakarta, ELSAM, HUMA.
- [36]. Sari, A. T. O & Eliza, M. 2003. Empati dan Perilaku Merokok di tempat umum. Jurnal Psikologi, No. 2.
- [37]. Spinoza, 1982, writes in III, Definition of the Emotions #1.
- [38]. Spinoza, 1982, “The mind's conatus, or power, is the very essence of the mind”
- [39]. Satjipto Rahardjo, 1983, Permasalahan Hukum di Indonesia, Alumni, Bandung.
- [40]. Vincent Jeffries and H. Edward Ransford, 1980, Social Stratification a multiple hierarchy approach, (Boston : Allyn and Bacon, Inc), p. 3-12. Satjipto Rahardjo, 2008, Biarkan Hukum Mengalir, (Jakarta : Kompas), hlm. 7
- [41]. Taufik., 2012, Empati: pendekatan psikologi sosial. Jakarta: Raja Grafindo.
- [42]. Theo Huijbers, 1982, Filsafat Hukum Dalam Lintasan Sejarah, Jogjakarta, Kanisius, hlm162
- [43]. Titik Triwulan Tutik, 2014, Hakekat Ilmu Hukum Ditinjau dari Filsafat Ilmu dan Teori Ilmu Hukum, Jurnal Hukum dan Pembangunan Tahun ke-44 No.2 April-Juni 2014.

# The Influence of Service Quality, Tax Sanctions, Compliance Costs and Application of E-Filing Systems To Individual Taxpayer Compliance. (Study Case; Pratama Tax Service Office KPP Ternate)

Rheza Pratama<sup>1</sup>, Basrah Machmud<sup>1</sup>

<sup>1</sup>Lecturer at Muhammadiyah University of North Maluku,. Indonesia

**Abstract.** Taxpayer compliance is the behavior of a taxpayer in doing all tax obligations and use the taxation rights by sticking to the regulations of taxation law. The issue about tax compliance that often happens in recent years is the emergence of non-compliance taxation. This non-compliance will result in tax evasion and embezzlement which will lead to reduced tax revenue to Indonesia's treasury. The population in this study are the taxpayers who do the free work available in the city of Ternate. Based on data from the tax office Pratama Ternate, there are 51,435 taxpayers of individuals who do free work. Not everything is the object of this study, in order to efficiently time and cost. The number of samples was determined using the slovin formula in Riduwan (2005: 65), with a sample count of 100 people. The purpose of this study is to determine the effect of service quality, tax sanctions, tax compliance fees, and application of e-filing on WP OP compliance in KPP Pratama Ternate. The number of samples used as many as 100 respondents with the sample is convenience sampling method. The primary data collection method used is survey method by using media questionnaire. The analysis technique used is the technique of regression analysis. Based on the results of the analysis, it can be concluded that the quality of service and the application of E-filing system influence to the taxpayer compliance of the individual while the taxation sanction and compliance costs have no effect on individual taxpayer compliance.

**Key words:** *Taxpayer Compliance, Quality of service, Taxation, Cost of Sanctions compliance and application E-filing system.*

## 1. Introduction

Tax is a common phenomenon as a source of state revenue which prevails in various countries. Almost all countries in the world impose taxes on their citizens, except for some countries which is rich in natural resources that serve as the main source of state revenue, which does not impose taxes (Pandiangan, 2008).

The level of taxpayer compliance can be influenced by several factors, including the imposition of tax sanctions, service quality, and the implementation of modern tax administration system. In order for tax regulations to be followed, there must be tax sanctions for the violators. Providing good service to the taxpayers is one effort in improving taxpayer compliance.

May 2004 officially launched a product called e-Filing or Electronic Filling System. The implementation of e-Filing was an initial step undertaken by the Directorate General of Taxes in order to modernize the tax system in Indonesia which was expected to provide better service quality so to give satisfaction for the taxpayers. Taxpayers who are satisfied with the quality of service are expected to be able to change their behavior in performing tax payments, thus taxpayer compliance may increase. Tax revenue is the main source of income for the State, therefore the role of taxes is very important in the future. Therefore as one of the largest state revenues, the tax requires a good management system. Here is the tax realization at Ternate Primary Tax Service Office.

The table above showed that the tax revenue at Ternate Primary Tax Service Office showed the increasing realization of tax revenues every year. So, tax revenue was more optimal in accordance with economic conditions and community capabilities. Primary Tax Service Office in Ternate, North

Maluku, noted that the second stage tax amnesty has succeeded in collecting the compensation of taxpayers (WP) as much as Rp5.2 billion or exceeded the target in order to meet tax revenue.

**Table 1.** Realization of Tax Revenue at Ternate Primary Tax Service Office  
(In million Rupiah)

No	Office Name	Realization of tax revenue		
		2014	2015	2016
1	Primary of Ternate	689.840,75	596.119,15	<b>855.987,59</b>

Source: DGT of Ternate Primary TSO

Problems then appeared at Ternate Primary Tax Service Office which was shown to the individual taxpayer privately to deliver notification letter by paying a fine of Rp.100.000. The delay of the delivery of individual taxpayer notification letter or if the taxpayers do not submit annual notification will be known from the system and they will appeal the taxpayer to pay his duties. If the appeal is ignored then it will be proceed with the investigation until legal action and even taxpayer account blocking as a form of tax sanctions (<http://Portal.malutpost.co.id>).

This study was conducted again to test the effect of several factors that may cause Taxpayer compliance at Ternate Primary TSO. The contradictions and inconsistencies in previous studies make this study still interesting to conduct.

Based on the background described above, then the formulations of the problems are as follows:

1. Does service quality have a positive effect on taxpayer reporting compliance at Ternate Primary TSO?
2. Does tax sanction have a positive effect on taxpayer reporting compliance at Ternate Primary TSO?
3. Does tax compliance cost have a negative effect on taxpayer reporting compliance at Ternate Primary TSO?
4. Does e-filing implementation have a positively effect on taxpayer reporting compliance at Ternate Primary TSO?

The study objective is to analyze the influence of each variable on taxpayer compliance behavior. Usefulness of this study is that the study is expected to provide a broad understanding on tax compliance, and become consideration material in order to perform evaluation in the future by the tax policy makers.

## 2. Theoretical Basis

### a. Quality of Tax Service

Regulation of Service Standards at Integrated Service Site of Tax Service Office that is Regulation of Directorate General of Taxes number PER-27/PJ/2016 regarding service standards at integrated service site of tax service office Establish: regulation of Directorate General of Taxes regarding service standards at integrated service site of tax service office.

Quality of service is all the best services given to keep satisfaction for the taxpayers in tax service office and it is performed based on tax laws. Previous study conducted by Putu Rara Susmita (2016) found the result that the quality of tax service had a positive effect on taxpayer compliance

### b. Taxpayer Compliance

According to Abdul Rahman (2010: 32) tax compliance can be defined as the circumstances in which the Taxpayer meets all tax obligations and conducts his tax rights. According to Mardiasmo (2011: 56) taxpayers have several obligations that must be met namely:

1. Register his name to get Taxpayer ID
2. Report his business activities to be confirmed as Taxable Income
3. Calculate payable tax
4. Fill in the Notification Letter (SPT) properly (SPT is taken by himself), and
5. Submit the SPT to the Tax Service Office within the specified time limit.

### c. Tax Sanction

Tax sanction is a guarantee that the provisions of the tax laws (tax norms) will be obeyed/followed/complied. Or in other words tax sanction is a preventive tool so that the taxpayers may not violate the tax norms (Mardiasmo, 2011).

#### **d. Compliance Cost**

According to John L. Turner compliance cost is "The cost imposed on taxpayers outside of taxes including the cost of learning about taxes, filing, preparing tax files, making deals with auditors, mediating misunderstandings with tax officials and so on."

From the above definition it can be interpreted that the compliance cost is all costs both physically and psychologically that must be borne by the taxpayer to meet his tax obligations. Compliance costs consist of, among others, consultant/accountant cost, employee cost, transportation cost to the tax office/bank/State treasury, and photocopy cost as physical cost, and psychic costs of stress, curiosity and concern. The lower the compliance cost, the easier it is for taxpayers to carry out their tax obligation.

#### **e. E-Filing**

E-filing is a mean of submitting SPT or submission of Annual SPT Renewal in real time on-line basis through the website of Directorate General of Taxes ([www.pajak.go.id](http://www.pajak.go.id)) or Application Service Provider (ASP). Thus, Taxpayer (WP) no longer needs to print all report forms and wait for the receipt manually. Online means that the Taxpayer may report any tax by using internet anywhere and anytime, while the word real time means that the confirmation from the Directorate General of Taxes (DGT) can be obtained at the same time if the data of Notification Letter (SPT) are filled completely and correctly and the letter is sent electronically.

#### **f. Hypothesis**

Based on previous studies, the hypotheses are formulated as follows:

- H<sub>1</sub>: Service Quality has a positive effect on individual taxpayer reporting compliance at Ternate Primary Tax Service Office
- H<sub>2</sub>: Tax sanction has a positive effect on individual taxpayer reporting compliance at Ternate Primary Tax Service Office
- H<sub>3</sub>: Tax compliance cost has a negative effect on individual taxpayer reporting compliance at Ternate Primary Tax Service Office.
- H<sub>4</sub>: Implementation of E-Filing has a positive effect on individual taxpayer reporting compliance at Ternate Primary Tax Service Office

### **3. Study Methods**

To meet the objectives to be achieved in this study, then the methods used in this study were as follows:

1. The measurement of each independent variable and the dependent variable was performed by using the Likert scale questionnaire with 4 scales. This study used primary data to collect the data, so the data were obtained directly from the study sources.
2. The specified populations were 51,435 people who were registered at Ternate Primary TSO. The sampling method was accidental sampling. Accidental sampling is a method of choosing respondents as the study samples based on a convenience, i.e. the condition where the author accidentally meets the corresponding respondent as the data source (Sugiyono, 2013). The number of samples in this study was determined by the Slovin formula as follows:

$$n = \frac{1+(N)/N(d)^2}{1+(51.435)(0.1)^2} = 99,80$$

Notes:

n= 99,80 ( 100 Taxpayers)

n= Sample

N= Population

d= Confidence level of 95% or Sig = 0,1 (10%)

3. Data analysis technique used here was test of data quality from validity test and reliability test performed to see whether the measurement tool can yield relevant data and give result which is not different if the test is repeated. The classical assumptions test performed in this study namely: normality test, Multicollinearity test and heteroscedasticity test. Independent influence of the variables on the dependent variable can be known by performing multiple linear regression analysis. Multiple linear regression analysis model is formulated as follows (Sugiyono, 2007).

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

#### 4. Results and Discussion

Data from the study were obtained from questionnaires that have been distributed to 100 respondents. All respondents in this study have met the sample criteria of having Taxpayer ID and using e-Filing. The following tables show the respondent's data

**Table 2.** Demography Data of the Respondents

Notes	Frequency (people)	Percentage (%)
<b>Gender</b>		
Male	60	60%
Female	40	40%
<b>Age</b>		
23-35	48	48%
36-45	44	41%
46-55	9	9%
>56	2	2%
<b>Occupation</b>		
Civil Servant	90	90%
Private Employee	7	7%
SOE Employee	3	3%
<b>Education</b>		
Diploma 3	40	40 %
Bachelor	66	66%
Doctoral	4	4%

*Source: Processed primary data (2018)*

Table 2 above showed the condition of respondents found in the field, which was further detailed in the frequency distribution of respondents' identity by sex, age, last education and occupation.

**Table 3.** Multicollinearity Test

Model	Collinearity statistics	
	tolerance	VIF
1 ( constant)		
Quality of Service	0,917	1,696
Tax Sanctions	0,958	1,044
Compliance Cost	0,971	1,030
Implementation of e-filing System	0,967	1,034

*Source: Data were processed by the author 2018*

From the table above, it can be seen that five independent variables had VIF values of not more than 10 and Tolerance values of not less than 0,1 so it can be concluded in this regression model that there was no multicollinearity problem.

**Table 4 .** Individual Parameter (t test)

Model	B	T	sig
(constant)	3.986	5.554	000
Quality of Service	-2.274	-2.211	0.031
Tax Sanctions	-164	-1634	0.106
Compliance Cost	-002	-018	0.986
Implementation of e-filing System	3.884	3.092	0.035

The result of the first hypothesis test (H1) which stated that the quality of service had an effect on individual taxpayer compliance was confirmed in table 4 which shows that the regression coefficient value on service quality variable (X1) was 2.274 with the t count value of -2.2211. The regression coefficient value was significant at a significance level of 0.05 with p value of 0.031. These results explained that the regression coefficient value on service quality variable (X1) had a significant effect on individual taxpayer compliance.

The result of the second hypothesis (H2) test mentioned the tax sanction variable (X2) of 0.164 and t count of 0.1643. Table value on the significance level of 5% and df (degree of freedom)  $n-k-1 = 57$  was 0.031. Thus t count of  $0.1643 > t$  table of 0.031. So it can be concluded that the change or variation in tax sanction variable would be followed by the individual taxpayer compliance variable. Based on the result of the second hypothesis test (H2) it can be interpreted that tax sanction variable had no effect on individual taxpayer compliance at a significance level of 5% or in other words H2 was rejected.

The result of the third hypothesis test (H3) showed that the regression coefficient value on compliance cost variable (X3) was -0.02 and the t value was -0.018. The regression coefficient value was not significant at a significance level of 0.05 with p value of 0.035. This result was supported by the calculation result of t value and t table at significance level of 5% and df (degree of freedom)  $n-k-1 = 95$  of 0.986. Thus t count of  $-0.018 < t$ -table of 0.986. The result of this test interpreted that tax administration system modernization variable (X3) had no effect on the compliance of individual taxpayers at a significance level of 5% or in other words H3 was rejected.

The result of the fourth hypothesis test (H4) which stated that the implementation of E-filing system had an effect on individual taxpayer compliance was confirmed in table 7. The regression coefficient value of implementation of E-filing system (X4) was 3.884 with t count value of 3.092. This regression coefficient value was significant at significance level of 0.05 with p value of 0.035. This result explained that the regression coefficient value of implementation of E-filing system (X4) variable had an effect on individual taxpayer compliances and the value was also significant. Based on the result of the fourth hypothesis test (H4) it can be interpreted that the service quality variable had a significant effect on individual taxpayer compliance at a significance level of 5% or in other words H4 was accepted.

Based on the results of the first, second, third and fourth hypothesis tests (H1, H2, H3, H4), it can be concluded that service quality (X1) and the application of E-filing System (X4) variables significantly influenced individual taxpayer compliance while tax sanction (X2) and compliance cost (X3) variables had no effect on individual taxpayer compliance.

**Table 5 . Summary of Hypothesis Test Results**

Code	Hypothesis	Result
H1	Quality of service had an effect on individual taxpayer compliance	Hypothesis was accepted
H2	Tax sanctions had no effect on individual taxpayer compliance	Hypothesis was rejected
H3	Compliance costs had no effect on individual taxpayer compliance	Hypothesis was rejected
H4	Implementation of E-filing System had an effect on individual taxpayer compliance	Hypothesis was accepted

*Source: Data were processed by the author 2018*

## 5. Conclusions and Recommendations

Based on the above study results, it can be drawn some conclusions as follows:

- This study showed an evidence that the quality of service had an effect on individual taxpayer compliance.
- The result of multiple regression test showed that tax sanctions had no effect on individual taxpayer compliance.
- The results of this study did not support the third hypothesis that compliance costs affect individual taxpayer compliance.

- d. Implementation of e-filing had a positive effect on the individual taxpayer reporting compliance at Ternate Primary TSO which meant that the better the quality of service provided by the implementation of e-filing System, the more individual taxpayer compliance.

Based on the results and conclusions above, some recommendations can be given as follows:

1. Ternate Primary TSO has already provided tax services in a good and excellent manner. So it is expected that this excellent service quality can be maintained and enhanced in order to provide satisfaction and comfort for individual taxpayer.
2. Fine penalties must be socialized well to the taxpayers so that they may understand the issues related to the implementation of fine penalty and the causes of the decision for a fine penalty against taxpayers. Socialization can be performed by providing free counseling session for the new taxpayers or periodically sending a notification regarding the implementation of fine penalty.
3. For further study is expected to increase the number of study variables such as awareness in tax payment and knowledge and understanding of tax laws.

## References

- [1]. Arabella dan Yenni (2013) Pengaruh Sikap Wajib Pajak pada Pelaksanaan Sanksi Denda, Pelayanan Fiskus dan Kesadaran Perpajakan terhadap Kepatuhan Wajib Pajak (Studi Empiris terhadap Wajib Pajak Orang Pribadi di Kota Semarang). *Tesis* Magister Akuntansi Program Pascasarjana Universitas Diponegoro.
- [2]. Direktur Jendral pajak, *Berita Pajak* Nomor PER-48/PJ/2011 tentang perubahan kedua atas peraturan Direktur Jendral Pajak Nomor PER-19/PJ./2009.
- [3]. Direktorat Jendral Perpajakan, Nota keuangan Rancangan Anggaran dan Pendapatan Belanja Negara *berita pajak*, NK-RAPBN Tahun/2016.
- [4]. Ghozali, Imam. 2006. *Aplikasi Analisis Multivariate Dengan Program SPSS*. Badan Penerbit Universitas Diponegoro. Semarang
- [5]. \_\_\_\_\_. 2012. *Aplikasi Analisis Multivariate Dengan Program SPSS*. Badan Penerbit Universitas Diponegoro. Semarang
- [6]. Jatmiko, Agus nugroho. 2006 pengaruh sikap wajib pajak pelaksanaan sanksi denda, pelayanan fiskus dan kesadaran perpajakan terhadap wajib pajak orang pribadi kota semaran. *Tesis*. Universitas diponegoro. Semarang
- [7]. Kementerian keuangan republik indonesia direktorat jenderal pajak salinan peraturan direktur jenderal pajak Nomor per-27 /pj/2016
- [8]. Sentya n Arum sasmita, 2014 pengaruh tingkat pemahaman wajib pajak pelayanan fiakus, kesadaran wajib pajak dan sanksi pajak Perpajakan terhadap Kepatuhan Wajib Pajak (Studi Empiris terhadap Wajib Pajak Orang Pribadi di Kota Semarang). *Tesis* Magister Akuntansi Program Pascasarjana Universitas guandarma jakarta
- [9]. Sugiyono. 2013. *Metodologi Penelitian Bisnis*. Bandung: Alfabeta
- [10]. \_\_\_\_\_. 2007. *Metodologi Penelitian Bisnis*. Bandung: Alfabeta
- [11]. Susmita Putu rara. 2016. pengaruh kualitas pelayanan, sanksi perpajakan, biaya kepatuhan pajak, dan penerapan *e-filing* pada kepatuhan wajib pajak (Studi Empiris terhadap Wajib Pajak Orang Pribadi di KPP Denpasar timur). *Skripsi* Akuntansi Universitas Udayana
- [12]. Viraqh Havizha. 2014. Analisis Tingkat Kepatuhan Wajib Pajak Atas Penyampaian Surat Pemberitahuan Masa PPN Secara *E-Filling* Pada Kantor Pelayanan Pajak Madya Medan. *Tugas Akhir* Program Diploma 3 Politikenik Negeri Medan.
- [13]. [http://www. Pajak.go.id](http://www.Pajak.go.id)
- [14]. <http://www. portalmalut.co.id>

# Integrability In The Concept Of The Lower Sum $L(P_n, f)$ and Upper Sum $U(P_n, f)$ Whit Test $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$

Ruslan Laisou

Departemen of Matematika, Faculty of Mathematics and Basic Sciences, Muhammadiyah University of North Maluku  
Email : ruslanlaisouw@gmail.com

**Abstract.** This paper discusses about the integrability in the concept of the lower sum  $L(P_n, f)$  and the upper sum  $U(P_n, f)$  in the function  $f(x) = x^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  with domain  $I = [0, 1]$  using the formula  $\sum_{k=1}^n k^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  with the test  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ . The results of the lower sum  $L(P_n, f)$  and the upper sum  $U(P_n, f)$  of the function  $f(x) = x^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  consecutive for  $t = 4$ ,  $t = 5$  and  $t = 6$  as follows:

$$L(P_n, f) = \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] \text{ and } U(P_n, f) = \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]$$

$$L(P_n, f) = \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right] \text{ and } U(P_n, f) = \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]$$

$$L(P_n, f) = \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] \text{ and } U(P_n, f) = \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$$

And the results of the tests are also sequentially obtained  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ , the conclusion that the function defined is integrable on  $I = [0, 1]$

**Keywords:** Integral, lower sum, upper sum, limit test

## 1. Introduction

Integral concepts are often used to determine the area under the curve and seek a solution of a mathematical model [1]. In the context of the integral of course (Riemann integral), we can compute some integral of course (Riemann integral), from a direct definition because we have sweet formulas  $\sum_{k=1}^n k^t$  for  $t \leq 3$ ,  $t \in \mathbb{N}$  [2]. Some calculations from the direct definition are also difficult, for the corresponding function of the form  $\sum_{k=1}^n k^t$  with  $3 < t \leq 6$ ,  $t \in \mathbb{N}$ . The integral calculation is certainly based on the definition always related to the concept of the upper sum  $U(P_n, f)$  and the lower sum  $L(P_n, f)$  and the integrable parameter can be seen at the limit of the difference  $U(P_n, f)$  with  $L(P_n, f)$ . The author's concern is on the concept of the lower number of  $L(P_n, f)$  and the upper sum of  $U(P_n, f)$  by the  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ , As an integral criterion in the given function domain.

## 2. Literature Review

### 2.1. Definition and Properties $\Sigma$

The properties  $\Sigma$  is thought of as an operator,  $\Sigma$  operates in sequence and is linearity [3]. Here  $\Sigma$  advise us to add up the rows to say that belongs, known by the name of the series. In the encyclopedia of mathematics, the series is defined as the terms of a sequence of numbers summed [4]. The series is also defined as a series of numbers that are arranged regularly and meet certain rules [5].

From the above explanation, if given the sequence of numbers  $a_1, a_2, a_3, \dots, a_n$  then  $a_1 + a_2 + a_3 + \dots + a_n = \sum_{k=1}^n a_k$  is called a series. Several rows up to the  $\mathbb{N}$  original numbers and their respective representatives are represented as  $\sum_{k=1}^n k^t$  for  $t \leq 4$ ,  $t \in \mathbb{N}$ , for example  $\sum_{k=1}^n k^4 = 1^4 + 2^4 + 3^4 + \dots + n^4 = \frac{n(n+1)(6n^3+9n^2+n-1)}{30}$ , other forms can be seen in [1]. While in [6] has been built formula  $\sum_{k=1}^n k^t$  untuk  $4 < t \leq 6$ ,  $t \in \mathbb{N}$  among others:

$$\text{i). } \sum_{k=1}^n k^5 = 1^5 + 2^5 + 3^5 + \dots + n^5 = \frac{n^2(2n^4+6n^3+5n^2-1)}{12}$$

$$\text{ii). } \sum_{k=1}^n k^6 = 1^6 + 2^6 + 3^6 + \dots + n^6 = \frac{n(12n^6+42n^5+42n^4-14n^2+2)}{84}$$

## 2.2. The Completeness Property of Real Number

### Definition 1 [7]

Let  $S$  be a nonempty subset of  $\mathbb{R}$ .

- i). The set  $S$  is said to be bounded above if there exists a number  $b \in \mathbb{R}$  such that  $x \leq b \forall x \in S$ . The number  $b$  is called an upper bound of  $S$ . If  $b \in S$ , then  $b$  is called the max element  $S$ .
- ii). The set  $S$  is said to be bounded below if there exists a number  $b \in \mathbb{R}$  such that  $x \geq b \forall x \in S$ . The number  $b$  is called a lower bound of  $S$ . If  $b \in S$ , then  $b$  is called the min element  $S$ .

### Definition 2 [7]

Let  $S$  be a nonempty subset of  $\mathbb{R}$ .

- i). The number  $a$  least upper bound of  $S$  (supremum) of  $S$  is written  $a = \text{Suf } S$ , if a number  $a$  is the upper bound of  $S$ , if  $h$  is another upper bound of  $S$ , then  $a \leq h$ .
- ii). The number  $a$  greatest lower bound of  $S$  (infimum) of  $S$  is written  $a = \text{inf } S$ , if a number  $a$  is the lower bound of  $S$ , if  $h$  is any lower bound of  $S$ , then  $h \leq a$ .

## 2.3. The Archimedean Property.

**Theorema 1 (Archimedean Property)** [8] if  $x \in \mathbb{R}$ , then there exist  $n_x \in \mathbb{N}$  such that  $x < n_x$

**Corollary 1.1** [8] if  $y$  and  $z$  positive real number, then: (i). There exists  $n \in \mathbb{N}$  such that  $z < ny$ , (ii).

There exists  $n \in \mathbb{N}$  such that  $0 < \frac{1}{n} < y$ , (iii). There exists  $n \in \mathbb{N}$  such that  $n - 1 \leq z < n$ .

## 2.4. The Limit of a Sequence

### Definition 3 [8].

A sequence  $X = (x_n)$  in  $\mathbb{R}$  is said to converge to  $x \in \mathbb{R}$ , or  $x$  is said to be a limit of  $(x_n)$ , if for every  $\varepsilon > 0$  there exists a natural number  $K = K(\varepsilon)$  such that for all  $n \geq K$ , the terms  $x_n$  satisfy  $|x_n - x| < \varepsilon$ .

Examples:  $\lim_{n \rightarrow \infty} (\frac{1}{n}) = 0$

If  $\varepsilon > 0$  is given, then  $\frac{1}{\varepsilon} > 0$ . By Archimedean property (ii), there is a natural number  $K = K(\varepsilon)$  such that  $\frac{1}{K} < \varepsilon$ . Then, if  $n \geq K$ , we have  $\frac{1}{n} \leq \frac{1}{K} < \varepsilon$ . Consequently, if  $n \geq K$ , then  $|x_n - 0| = \frac{1}{n} \leq \frac{1}{K} < \varepsilon$ .

Therefore, we can assert that the sequence  $\lim_{n \rightarrow \infty} (\frac{1}{n}) = 0$ .

## 2.5. The Function

A function is a relation with the added restriction that to each domain value there corresponds one and only one range value. (All functions are relations, but some relations are not functions) [9].

### Definition 4 [10]

A function  $f$  from  $A$  to  $B$  is a correspondence rule that links every object of origin ( $A$ ) with a single value of  $B$  from the resulted region object  $f(A)$ .

Let  $f: \mathbb{R} \rightarrow \mathbb{R} f(x) = x^3$ . The function  $f$  is called a function that maps every  $x \in \mathbb{R}$  to the third rank.

## 2.6. Continuous Functions

### Definition 5 [1]

A function  $f$  is continuous at point  $c$  if if some of the open hoses around  $c$  are contained in the origin region  $f$  dan  $\lim_{x \rightarrow c} f(x) = f(c)$ .

## 2.7. Partitions and Riemann sum

### 2.7.1. Partitions

A function  $f$  is defined at the closed interval  $I = [a, b]$ . This function can be either positive or negative at that interval and do not even need to be continuous. Suppose a partition  $P$  divides the interval  $[a, b]$  into  $n$  sub-interval (not necessarily the same length) with  $a = x_0 < x_1 < x_2 < \dots < x_n = b$ . distance of each sub-interval  $[x_0, x_1], [x_1, x_2], \dots, [x_{n-1}, x_n]$  denoted by  $\Delta x_1, \Delta x_2, \dots, \Delta x_n$  if  $1 \leq k \leq n$ , then  $\Delta x_k = x_k - x_{k-1}$  [11].

### 2.7.2. The Riemann Sum

### Definition 6 [8]

Let  $f: I \rightarrow \mathbb{R}$  is a function bound on  $I = [a, b]$  and  $P = \{x_0, x_1, \dots, x_n\}$  is partitions on  $I$ , for  $k = 1, 2, \dots, n$  we define  $m_k = \inf \{f(x) | x \in [x_{k-1}, x_k]\}$  and  $M_k = \sup \{f(x) | x \in [x_{k-1}, x_k]\}$ .

Lower Sum of  $f$  on  $P$  we defined by  $L(P, f) = \sum_{k=1}^n m_k(x_k - x_{k-1})$ ,

And, Upper Sum of  $f$  on  $P$  we defined by  $U(P, f) = \sum_{k=1}^n M_k(x_k - x_{k-1})$ .

### Lemma 1 [8]

If  $f: I \rightarrow \mathbb{R}$  function bound on  $P$  is any partition of  $I$  then  $L(P, f) \leq U(P, f)$ .

**Proof:** Let  $P = \{x_0, x_1, \dots, x_n\}$ . since  $m_k \leq M_k$  and  $x_k - x_{k-1} > 0$  for  $k=1, 2, \dots, n$ . then  $L(P, f) = \sum_{k=1}^n m_k(x_k - x_{k-1}) \leq \sum_{k=1}^n M_k(x_k - x_{k-1}) = U(P, f)$ .

**Tehorema 2 [8]**

Let  $I = [a, b]$  and  $f: I \rightarrow \mathbb{R}$  function bound on I. if  $(P_n)$  sequenc partition of I as of  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ ,

Then  $f$  integrable on I, and  $\lim_{n \rightarrow \infty} (L(P_n, f) = \int_a^b f = \lim_{n \rightarrow \infty} (U(P_n, f))$ .

**2.8. Integral Tentu**

**Defenition 7 [1]**

Let  $f$  be a function defined on the hose closed  $[a, b]$ . If  $\lim_{|p| \rightarrow 0} \sum_{i=1}^n f(\bar{x}_i) \Delta x_i$  exist,

Assuming  $f$  a function which is defined on the hose closed  $[a, b]$ . if  $\lim_{|p| \rightarrow 0} \sum_{i=1}^n f(\bar{x}_i) \Delta x_i$  exist, then it says the function  $f$  is integrated on  $[a, b]$ . Furthermore  $\int_a^b f(x) dx$ , is we said the integral of course (integral Rieamann)  $f$  from  $a$  to  $b$ , is given by  $\int_a^b f(x) dx = \lim_{|p| \rightarrow 0} \sum_{i=1}^n f(\bar{x}_i) \Delta x_i$ .

**3. Discussion**

In this section, the authors emphasize the development of an integral example of function in terms of the concept of the lower sum  $L(P, f)$  and the upper sum of  $U(P, f)$ , as well as the test results using (based on theorem 2 above). With restrictions on the concept of uniform partition size.

**3.1. Uniform Partitions**

Uniform partition that all sub intervals have the same length ( $|p| \rightarrow 0$  dan  $n \rightarrow \infty$  ekuvalen). For example uniform partition on  $I = [a, b]$  that is  $\Delta x_k = \frac{(b-a)}{n}$  then obtained the point of partition  $x_k = \frac{(b-a)k}{n}$ . By take  $\bar{x}_k \in [x_{k-1}, x_k]$  then by definition 7 it is found that;  $\int_a^b f(x) dx = \lim_{|p| \rightarrow 0} \sum_{k=1}^n f(\bar{x}) (x_k - x_{k-1}) = \lim_{n \rightarrow \infty} \frac{b-a}{n} \sum_{k=1}^n f(a + \frac{(b-a)k}{n})$ .

**3.2. Integrable function in the consep to Lower sum and Upper sum**

Let  $I = [0, 1]$  and  $f: I \rightarrow \mathbb{R}$  function bound on I and  $P = \{x_0, x_1, x_2, \dots, x_n\}$  is partitions on I, with the uniform interval. The function  $f$  is defined as  $f(x) = x^r$ , for  $3 \leq r \leq 6$ ,  $r \in \mathbb{N}$ . What is the result of the lower sum  $L(P, f)$  and the upper sum  $U(P, f)$  of the existing function and how does the limit test result.

In terms of the function and its boundaries, there are 3 problems that can be discussed in this section of discussion, namely the functions of  $f(x) = x^4$ ,  $f(x) = x^5$  and  $f(x) = x^6$ . Here's the discussion for each of the defined functions:

1. Let  $f(x) = x^4$  for  $0 \leq x \leq 1$  and the assume  $P_n$  is to partition on I with  $n$  the uniform subinterval,  $P_n = \{0, \frac{1}{n}, \frac{2}{n}, \frac{3}{n}, \dots, \frac{(n-1)}{n}, \frac{n}{n} = 1\}$ .

Determine  $L(P_n, f)$  and  $U(P_n, f)$  show that to  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$

**Solution :**  $M_k = (\frac{k}{n})^4$  and  $m_k = (\frac{k-1}{n})^4$ , for to  $k = 1, 2, 3, \dots, n$ .

$$\begin{aligned} \text{Corollary: } L(P_n, f) &= \sum_{k=1}^n m_k(x_k - x_{k-1}) \\ &= \sum_{k=1}^n (\frac{k-1}{n})^4 (\frac{1}{n}) \\ &= \frac{1}{n^5} \sum_{k=1}^n (k-1)^4 \\ &= \frac{1}{n^5} [0^4 + 1^4 + 2^4 + \dots + (n-1)^4] \\ &= \frac{1}{n^5} \left[ \frac{(n-1)((n-1)+1)(6(n-1)^3 + 9(n-1)^2 + (n-1)-1)}{30} \right] \\ &= \frac{1}{n^5} \left[ \frac{(n^2-n)(6n^3-18n^2+18n-6+9n^2-18n+9+n-2)}{30} \right] \\ &= \frac{1}{n^5} \left[ \frac{(n^2-n)(6n^3-9n^2+n+1)}{30} \right] \\ &= \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] \end{aligned}$$

So :  $L(P_n, f) = \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]$

And  $U(P_n, f) = \sum_{k=1}^n M_k(x_k - x_{k-1}) = \sum_{k=1}^n (\frac{k}{n})^4 (\frac{1}{n})$

$$\begin{aligned}
&= \frac{1}{n^5} \sum_{k=1}^n (k)^4 \\
&= \frac{1}{n^5} [1^4 + 2^4 + \dots + (n-1)^4 + (n)^4] \\
&= \frac{1}{n^5} \left[ \frac{(n)(n+1)(6n^3+9n^2+n-1)}{30} \right] \\
&= \frac{1}{n^5} \left[ \frac{(n^2+n)(6n^3+9n^2+n-1)}{30} \right] \\
&= \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]
\end{aligned}$$

So :  $U(P_n, f) = \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]$

Because of  $L(P_n, f) = \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]$  and  $U(P_n, f) = \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right]$

The test results based on theorem 2 as follows:

$$\begin{aligned}
\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) &= \lim_{n \rightarrow \infty} \left( \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] - \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] \right) \\
&= \lim_{n \rightarrow \infty} \left( \left[ \frac{1}{5} + \frac{5}{10n} + \frac{5}{15n^2} - \frac{1}{30n^4} \right] - \left[ \frac{1}{5} - \frac{5}{10n} + \frac{5}{15n^2} - \frac{1}{30n^4} \right] \right) \\
&= \lim_{n \rightarrow \infty} \left( \frac{1}{n} \right) \\
&= 0
\end{aligned}$$

The test results show that the function  $f(x) = x^4$  integrable on  $I$ , and  $\lim_{n \rightarrow \infty} (L(P_n, f) = \int_0^1 f = \lim_{n \rightarrow \infty} (U(P_n, f))$ .

2. Let  $f(x) = x^5$  for  $0 \leq x \leq 1$  and the assume  $P_n$  is to partition on  $I$  with  $n$  the uniform subinterval,  $P_n = \{0, \frac{1}{n}, \frac{2}{n}, \frac{3}{n}, \dots, \frac{(n-1)}{n}, \frac{n}{n} = 1\}$ .

Determine  $L(P_n, f)$  and  $U(P_n, f)$  show that to  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$

**Solution:**  $M_k = \binom{k}{n}^5$  dan  $m_k = \binom{k-1}{n}^5$ , untuk  $k = 1, 2, 3, \dots, n$ .

$$\begin{aligned}
\text{Corollary: } L(P_n, f) &= \sum_{k=1}^n m_k (x_k - x_{k-1}) \\
&= \sum_{k=1}^n \binom{k-1}{n}^5 \left( \frac{1}{n} \right) \\
&= \frac{1}{n^6} \sum_{k=1}^n (k-1)^5 \\
&= \frac{1}{n^6} [0^5 + 1^5 + 2^5 + \dots + (n-1)^5] \\
&= \frac{1}{n^6} \left[ \frac{(n-1)^2 (2(n-1)^4 + 6(n-1)^3 + 5(n-1)^2 - 1)}{12} \right] \\
&= \frac{1}{n^6} \left[ \frac{(n^2 - 2n + 1) (2n^4 - 8n^3 + 12n^2 - 8n + 2 + 6n^3 - 18n^2 + 18n - 6 + 5n^2 - 10n + 5 - 1)}{12} \right] \\
&= \frac{1}{n^6} \left[ \frac{(n^2 - 2n + 1) (2n^4 - 2n^3 - n^2)}{12} \right] \\
&= \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]
\end{aligned}$$

So:  $L(P_n, f) = \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]$

$$\begin{aligned}
\text{And } U(P_n, f) &= \sum_{k=1}^n M_k (x_k - x_{k-1}) \\
&= \sum_{k=1}^n \binom{k}{n}^5 \left( \frac{1}{n} \right) \\
&= \frac{1}{n^6} \sum_{k=1}^n (k)^5 \\
&= \frac{1}{n^6} [1^5 + 2^5 + \dots + (n-1)^5 + (n)^5] \\
&= \frac{1}{n^6} \left[ \frac{n^2 (2n^4 + 6n^3 + 5n^2 - 1)}{12} \right] \\
&= \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]
\end{aligned}$$

So:  $U(P_n, f) = \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]$

Because of  $L(P_n, f) = \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]$  and  $U(P_n, f) = \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right]$

The test results based on theorem 2 as follows:

$$\begin{aligned}
\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) &= \lim_{n \rightarrow \infty} \left( \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right] - \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right] \right) \\
&= \lim_{n \rightarrow \infty} \left( \frac{1}{6} + \frac{3}{6n} + \frac{5}{12n^2} - \frac{1}{12n^4} - \frac{1}{6} + \frac{3}{6n} - \frac{5}{12n^2} + \frac{1}{12n^4} \right)
\end{aligned}$$

$$= \lim_{n \rightarrow \infty} \left(\frac{1}{n}\right) \\ = 0$$

The test results show that the function  $f(x) = x^5$  integrable on  $I$ , and  $\lim_{n \rightarrow \infty} (L(P_n, f) - \int_0^1 f) = \lim_{n \rightarrow \infty} (U(P_n, f) - \int_0^1 f) = 0$ .

3. Let  $f(x) = x^6$  for  $0 \leq x \leq 1$  and example  $P_n$  is to partition on  $I$  with  $n$  the uniform subinterval,  $P_n = \{0, \frac{1}{n}, \frac{2}{n}, \frac{3}{n}, \dots, \frac{(n-1)}{n}, \frac{n}{n} = 1\}$ .

Determine  $L(P_n, f)$  dan  $U(P_n, f)$  show that  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$

**Solution :**  $M_k = \left(\frac{k}{n}\right)^6$  dan  $m_k = \left(\frac{k-1}{n}\right)^6$ , untuk  $k = 1, 2, 3, 4, \dots, n$ .

$$\begin{aligned} \text{Corollary: } L(P_n, f) &= \sum_{k=1}^n m_k (x_k - x_{k-1}) \\ &= \sum_{k=1}^n \left(\frac{k-1}{n}\right)^6 \left(\frac{1}{n}\right) \\ &= \frac{1}{n^7} \sum_{k=1}^n (k-1)^6 \\ &= \frac{1}{n^7} [0^6 + 1^6 + 2^6 + \dots + (n-1)^6] \\ &= \frac{1}{n^7} \left[ \frac{(n-1)(12(n-1)^6 + 42(n-1)^5 + 42(n-1)^4 - 14(n-1)^2 + 2)}{84} \right] \\ &= \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] \end{aligned}$$

$$\text{So: } L(P_n, f) = \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$$

$$\begin{aligned} \text{And } U(P_n, f) &= \sum_{k=1}^n M_k (x_k - x_{k-1}) \\ &= \sum_{k=1}^n \left(\frac{k}{n}\right)^6 \left(\frac{1}{n}\right) \\ &= \frac{1}{n^7} \sum_{k=1}^n (k)^6 \\ &= \frac{1}{n^7} [1^6 + 2^6 + \dots + (n-1)^6 + n^6] \\ &= \frac{1}{n^7} \left[ \frac{(n)(12n^6 + 42n^5 + 42n^4 - 14n^2 + 2)}{84} \right] \\ &= \frac{1}{n^7} \left[ \frac{12n^7 + 42n^6 + 42n^5 - 14n^3 + 2n}{84} \right] \\ &= \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] \end{aligned}$$

$$\text{So: } U(P_n, f) = \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$$

Because of  $L(P_n, f) = \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$  and  $U(P_n, f) = \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$  The test results based on theorem 2 as follows:

$$\begin{aligned} \lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) &= \lim_{n \rightarrow \infty} \left( \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] - \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] \right) \\ &= \lim_{n \rightarrow \infty} \left( \frac{1}{7} + \frac{7}{14n} + \frac{7}{14n^2} - \frac{7}{42n^4} + \frac{1}{42n^6} - \frac{1}{7} + \frac{7}{14n} - \frac{7}{14n^2} + \frac{7}{42n^4} - \frac{1}{42n^6} \right) \\ &= \lim_{n \rightarrow \infty} \left(\frac{1}{n}\right) \\ &= 0. \end{aligned}$$

The test results show that the function  $f(x) = x^6$  integrable on  $I$ , and  $\lim_{n \rightarrow \infty} (L(P_n, f) - \int_0^1 f) = \lim_{n \rightarrow \infty} (U(P_n, f) - \int_0^1 f) = 0$ .

#### 4. Conclusion

Based on the results of the discussion, it can be concluded that the lower sum  $L(P_n, f)$  and the upper sum  $U(P_n, f)$  in the function  $f(x) = x^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  with domain  $I = [0, 1]$  using the formula  $\sum_{k=1}^n k^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  with the test  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ . The results of the lower sum  $L(P_n, f)$  and the upper sum  $U(P_n, f)$  of the function  $f(x) = x^t$ , for  $3 < t \leq 6$ ,  $t \in \mathbb{N}$  consecutive for  $t = 4$ ,  $t = 5$  and  $t = 6$  as follows:

$$\begin{aligned} L(P_n, f) &= \frac{1}{5} \left[ 1 - \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] \text{ and } U(P_n, f) = \frac{1}{5} \left[ 1 + \frac{5}{2n} + \frac{5}{3n^2} - \frac{1}{6n^4} \right] \\ L(P_n, f) &= \frac{1}{6} \left[ 1 - \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right] \text{ and } U(P_n, f) = \frac{1}{6} \left[ 1 + \frac{3}{n} + \frac{5}{2n^2} - \frac{1}{2n^4} \right] \end{aligned}$$

$$L(P_n, f) = \frac{1}{7} \left[ 1 - \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right] \text{ and } U(P_n, f) = \frac{1}{7} \left[ 1 + \frac{7}{2n} + \frac{7}{2n^2} - \frac{7}{6n^4} + \frac{1}{6n^6} \right]$$

And the results of the tests are also sequentially obtained  $\lim_{n \rightarrow \infty} (U(P_n, f) - L(P_n, f)) = 0$ , the conclusion that the function defined is integrable on  $I = [0, 1]$ .

## References

- [1] Edwin J. P & Dale. V, 1987. *Calculus with Analytic Geometri*, Jilid 1; Edisi Lima. Terjemahan Nyoman dkk. Jakarta: Erlangga.
- [2] Bartle, R. G., and D. R. Sherbert. 2000. *Introduction to Real Analysis : Third Edition*. John Willey & Sons, Inc, 605 Third Avenue. New York.
- [3] Edwin J. P & Dale. V, 1999. *Calculus with Analytic Geometri*, Jilid 2 Terjemahan Nyoman dkk. Jakarta: Erlangga.
- [4] St. Negoro & B. Harahap, 2003. *Ensiklopedia Matematika*, Ghalia indonesia, Jakarta.
- [5] Du Mairy, 2004. *Matematika Terapan untuk Bisnis & Ekonomi*, BPFE. Yogyakarta
- [6] Ruslan laisouw & Hasriani Ishak, 2015, *Menentukan rumus deret hingga bilangan asli pangkat-r menggunakan penekatan binomial dengan uji induksi matematika.*, Jurnal SAINS Vol XII no 3: 15-23
- [7] Totong M & K Murti H, 1993, *Matematika untu Ilmu-ilmu Pertanian, Kehidupan, dan Perilkau*, PT. Gramedia, Jakarta
- [8] Sutrima, 2010. *Analisis Real*, Javatechno Publisher, Sukoharjo, Jawa Tengah. Indonesia
- [9] Barnet A. Raymond, 1981. *Calculus for management, life, and social sciences*; Second Edition, Dellen Publishing Company, Sn Francisco, California.
- [10] Kusriani & Susiswo, 2002. *Pengantar Topologi*, Universitas Terbuka, Jakarta
- [11] Varberg, D., E. J. Purcell, S. E. Rigdon. 2010. *Kalkulus Edisi Kesembilan*. Terjemahan I Nyoman Susila. Erlangga. Jakarta.

# Pre-Test Analysis on Reinforced Concrete Beams with Shear Strengthening using GFRP by Finite Element Method

Sary Shandy<sup>1</sup> and Joni Hermanto<sup>1</sup>

<sup>1</sup>Engineering Department, University of Muhammadiyah North Maluku, Indonesia 97726

**Abstract.** Research on the developments of new materials as well as the methods and techniques of retrofitting structures show that the Fiber Reinforced Polymer (FRP) is a promising material for use in strengthening reinforced concrete structures. This research aims to model reinforced concrete beams with shear strengthening using GFRP based finite element method. By using computer program Finite Element Analysis (FEA) the modeling was carried out by 2-dimension models on 3 testing material variations namely: the test normal concrete beams without the shear retrofitting (BGN), beams with shear retrofitting using GFRP are continuous on the shear span (BGPF), beams with retrofitting using 3 strips (BGP3S). The research result indicated that generally, the program used can show the behavior closed to the theoretical design result. The ultimate load of results normal concrete beams without the shear retrofitting (BGN) is 76,393 kN, beams with shear retrofitting using GFRP are continuous on the shear span (BGPF) is 77,798 kN, and beams with retrofitting using 3 strips (BGP3S). The results showed that the percentage increase of normal ultimate load of beam with shear reinforcement using GFRP was 1.4%, 11.01%, for reinforced using 3 strips (BGP3S). This indicated that the material behavior response produced from simulation study can well be described by the program.

**Key words:** *Shear Beams, GFRP, Retrofitting, 2-dimensional modeling.*

## 1. Preliminary

The fail of shear on concrete beams without reinforcement, generally damage occurs in areas along approximately three times the effective height of the beam and is called the span of the shear. Cracking due to diagonal drag is one way of shear damage. In shorter shear spans, the damage arises from a combination of shifting, crushing and splitting, while for sliding shear beams with longer shear spans, cracks due to flexural tensile stress will occur first before cracking due to the diagonal pull (Kusnadi, 2011).

The occurrence of flexural tensile cracking on the beam without shear reinforcement is an early warning of shear damage. A sloping skew due to sliding in the body of a reinforced beam may occur without the crack due to bending in the vicinity, or it may also be a continuation of the precipitate crack that has preceded it (Asroni, 2010).

*Fiber Reinforced Polymer* (FRP) is a very promising material for use in reinforcing reinforced structures. The use of GFRP in reinforced concrete beams can contribute to increasing load capacity when compared to reinforced concrete beam without GFRP reinforcement. As shear reinforcement on reinforced concrete beams, GFRP can be glued to the side of the beam. The increase in capacity varies with the addition of the number of layers (Khalifa *et al.*, 1998).

The nominal shear strength of the reinforced concrete beam is the number of strong shear concrete and strong shear reinforcement. In the case of a beam reinforced with a nominal shear strength FRP can be calculated by adding a shear strength of FRP (Naw y, 1998).

Alam *et al.* (2010), examined the effect of GFRP mounting variations on increasing shear strength of reinforced concrete slabs and concrete beam cracking behavior without GFRP reinforcement (beam norml) with reinforced concrete beams using GFRP retrofitting. The maximum load increase that occurs when compared to unreinforced beams is 14.46% for reinforced shear reinforcement shears with 3-stripped GFRP and 20.13% for reinforced retrofitted reinforced concrete slabs 5 strips in the area near the pedestal. The addition of GFRP on both sides of the beam along the span of the shear affects the pattern of the crack that occurs.

Kader (2012), examined the performance of reinforced concrete beams with bending strengths of Carbon Fiber Reinforced Polymer (CFRP) sheets that varied with the quality of concrete and the number of CFRP pieces. The quality of concrete is 23 MPa by using 3 layers of CFRP gives an increase of beam capacity when compared to concrete beam with the same quality without reinforcement is 30.15% and affect the collapse pattern that occurs in the beam. Deskarta (2009), examines the effect of the addition of GFRP plate with the fiber direction of  $0^\circ / 90^\circ, \pm 45^\circ$  and  $0^\circ$  to increased shear capacity of reinforced concrete cross-section. The cross section of the beam is 100 x 150 cm long and 950 cm long. The GFRP plate is added to both sides of the beam surface by coating the surface with *epoxy* resin and adding *glass fiber* in *woven roving* in the required direction and finally closed back with *epoxy*. The beams are simply supported and loaded at four points. The data collected is a load-deflection at each load load until collapse and the collapse pattern of the beam. The results showed that the beam without GFRP experienced a shear collapse pattern whereas the beam with GFRP experienced a bending collapse pattern. Furthermore, the addition of GFRP on beam boost beam load capacity of the average about 12, 48%.

In general, the study of the behavior of reinforced concrete structural elements with shear strengthening using GFRP is obtained through experimental results in the laboratory. Possible failure or destruction of GFRP donated shear reinforcement to reinforced concrete, ie failure due to fracture or fracture of GFRP and failure due to loss of GFRP reconnection with reinforced concrete beam. So it is important to conduct an experimental test to get an idea of the response of reinforced concrete structural elements with shear reinforcement using GFRP in receiving real loads. But in addition to complex and complicated execution, to obtain good experimental results required a large quantity of test specimens. Obviously this resulted in the large cost required and also takes a long time. In addition there are those that cannot be viewed experimentally such as voltage patterns and patterns of reinforced concrete beam blocks with GFRP. To try to overcome this, before the experimental test, it is important to perform pre-test analysis based on Finite Element Method (FEM) first.

The numerical approach is very useful and useful in calculating cases relating to material strength, thermal analysis, structural strength even to fluid mechanics. One approach often used in numerical studies is the *finite element method*, in which the continuum structure is viewed as a series of finite small elements connected to each other through the nodal points found on the edges of the elements. Each element has several nodes that have a degree of freedom (*degree of freedom*) (Wahjoe in 2011).

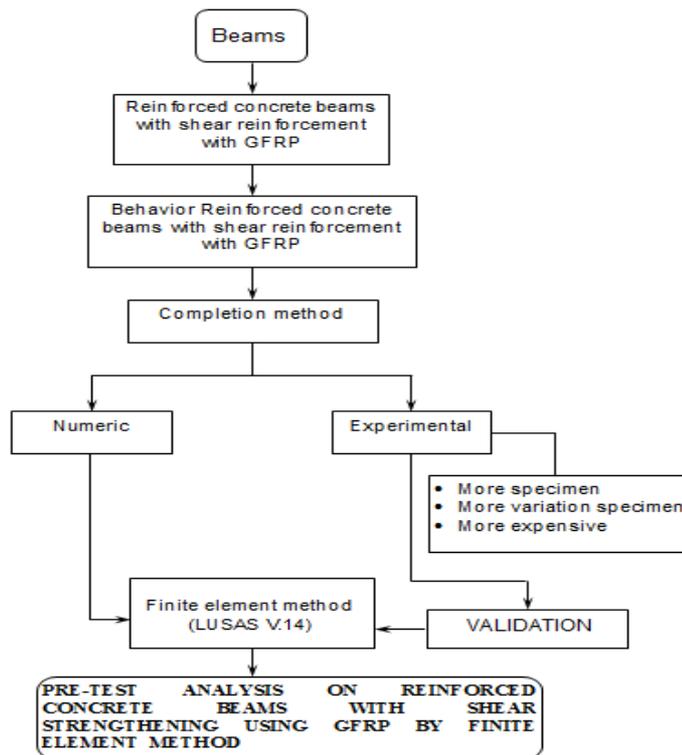
There are three steps in finite element analysis: *pre-processing*, *finite element solver* and *result processing*. System in LUSAS *finite element* program there are 2 parts of *finite element* analysis implementation that is: (1) LUSAS *modeller*, for graphical modeling before and after process. (2) LUSAS *solver*, for finite element analysis (Lusas, 2004).

Kader (2011), analyzing the T-beam (without and with reinforcement FRP), which is modeled using FEM-based *software* is *software* LUSAS. The cross section used is a cross section of Bina Marga on a scale of 1:4. From the validation of the T-beam testing (beam without and with FRP reinforcement) generally shows a fairly good proximity of behavior between laboratory test results and FEA LUSAS test results.

This study aims to simulate reinforced concrete beams with shear reinforcement using GFRP-based finite element method.

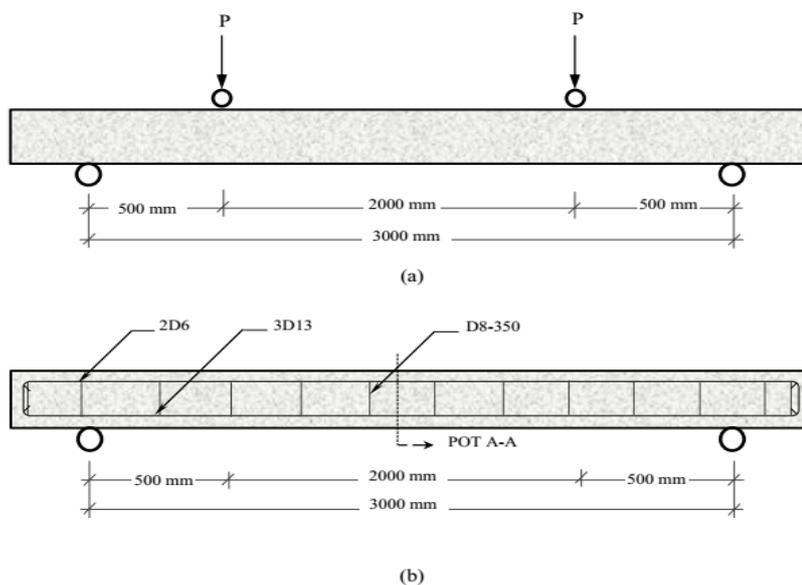
## 2. Materials and Methods

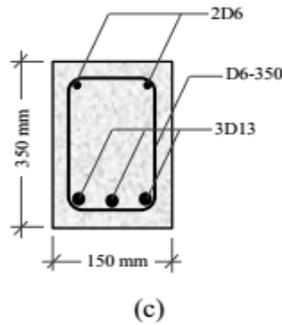
The draft refers to a study conducted on the model of the beam reinforced concrete with shear strengthening to be performed in the laboratory in the form of material characteristics. For example, the compressive strength of concrete,  $f_c$  is the compressive strength of the cylindrical concrete at 28 days (SNI, 2002). If described in a flow chart then the method as follows:



**2.1. Structural Modeling**

Variation of reinforced concrete beam test objects in FEA LUSAS simulation follows the model which will be tested in laboratory which consists of 5 variations of the model i.e, normal reinforced concrete beams without using GFRP (BGN), concrete beams with GFRP retrofit continuously mounted on a shear beam span (BGPF) and concrete beams with GFRP mounted 3 strips on the edge of the beam (BGP3S). Where with a total length of 3300 mm, a net length of 3000 mm, and a cross-sectional dimension 150 mm, height 350 mm . For more details, the proposed geometry model can be seen in Figure 1 and variations of FEA beams of LUSAS can be seen in Table 1 and Table 2 .





**Figure 1.** Model design loading beam (a), the longitudinal beam design model (b), and Pieces A-A beam (c)

### 2.2. Numerical Analysis Design

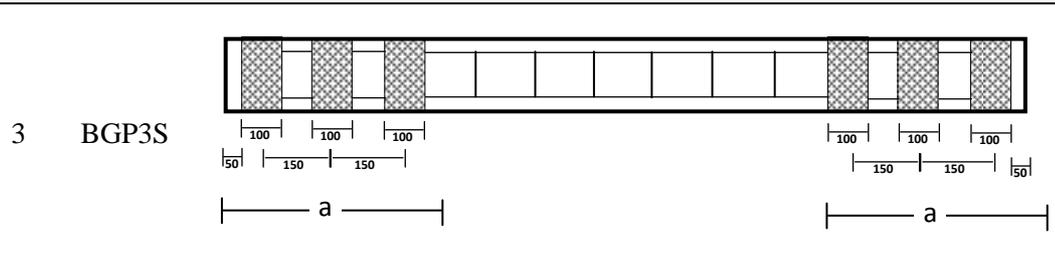
Numerical analysis in this study done using *software Finite Element Analysis* (FEA) LUSAS . The FEA LUSAS pre- test analysis is performed using a 2-dimensional field model element material . Concrete , sheets and epoxy GFRP modeled as *plane stress quadrilateral* ( QPM8 ), while for steel reinforcing it is modeled as a line element ( BAR3 ). To model contacts between GFRP and concrete elements in use namely the element of *joint no rotational stiffnes* (JNT) . The QPM8 model is for normal beam (BGN), GFRP continuous shear beam (BGPF) reinforcement, GFRP 3 strip (BGP3S) retaining beam. For material properties used to model reinforced concrete blocks using *isotropic* materials for concrete, reinforcement, GFRP and epoxy. More details for the material properties can be seen in Table 3.

**Table 1.** Cross Section Geometry of FEA LUSAS

No	Code	Profile of beam
1	BGN	
2	BGPF	
3	BGP3S	

**Table 2.** Cross Section Geometry of FEA LUSAS

No	Code	Profile Beams
1	BGN	<p>Normal reinforced concrete beams without using GFRP</p>
2	BGPF	<p>Concrete beams without using GFRP , <b>a</b> is a shear beam span in mm units</p>



**Table 3.** Material Properties of FEA LUSAS

		<b>MATERIAL <i>Isotropic</i></b>			
		Concrete	Steel	<i>Epoxy</i>	GFRP
1	<b><i>Elastic</i></b>				
	<i>Young's Modulus (MPa)</i>	23500	200000		70000
	<i>Poisson Ratio</i>	0.2	0.3		0.2
	<i>Mass Density</i>	-	-		
2	<b><i>Plastic</i></b>				
	<i>Model</i>	<i>Concrete (94)</i>	<i>Stress Potential</i>		<i>Stress Potential</i>
	<i>Stress potential type</i>		<i>Von Mises</i>	<i>ElastoPlasto uniform tension and compression</i>	<i>Von Mises</i>
3	<b><i>Hardening</i></b>		20000		279
	<i>Hardening Gradient Uniaxial Compressive Strength (MPa)</i>	-	0,002		0,022
4	<b><i>Strength (MPa)</i></b>	25	-		
5	<b><i>Initial Uniaxial yield stress</i></b>		400		279
6	<b><i>Strain at peak uniaxial Compression</i></b>	0.00185	-		
7	<b><i>Tensile Strength (MPa)</i></b>	2.5	-		
8	<b><i>Strain at End Coftening Curve</i></b>	0.003	-		

### 3. Research Result

#### 3.1. Load and Deflection Connection

FEA LUSAS simulation results are compared with theoretical design results. The pre-test result of FEA LUSAS analysis shows that the percentage of maximum sliding load difference of normal beam between the modeling result and the theoretical design is 7.8%, and the difference of maximum shear load for normal beam of modeling result with 4 different meshing is 8,5%. This shows the material behavior response generated from the simulation study can be well illustrated by the program.

For normal concrete beam without GFRP reinforcement (BGN), based on FEA LUSAS simulation results obtained initial load crack 13.99 kN and ultimit load 17,393 kN. concrete beams with GFRP retrofit continuously mounted on a shear beam span (BGPF) obtained an initial crack load of 14.39 kN, and an ultimate load of 77.798 kN. For beams with GFRP 3 strip (BGP3S) reinforcement the initial crack loads were 14.389 kN and the ultimate load was 87.407 kN. Deflection for normal reinforced concrete beams without GFRP (BGN) For FEA simulation the LUSAS was obtained by an initial deflection of 0.552 mm crack and ultimit deflection of 6.101 mm. For shear reinforcement rods using continuous shear GFRP (BGPF), the FEA LUSAS simulation was detected by an initial

deflection of 0.564 mm crack and ultimate deflection of 8.635 mm. For beams with GFRP reinforcement 3 strips (BGP3S), of the FEA simulation results obtained LUSAS initial deflection crack 0.566 mm and 10.04 mm ultimate deflection. For more details see Table 4.

**Table 4.** Load and Displacement of Beams BGN, BGPF, and BGP3S

Beams Code	Load		Displacement	
	$P_{Crack}$ (kN)	$P_{Ultimit}$ (kN)	Displacement <sup>1</sup> (mm)	Displacement <sup>2</sup> (mm)
BGN	13,999	76,393	0,552	6,101
BGPF	14,390	77,798	0,564	8,635
BGP3S	14,389	87,407	0,566	10,040

### 3.2. Strain

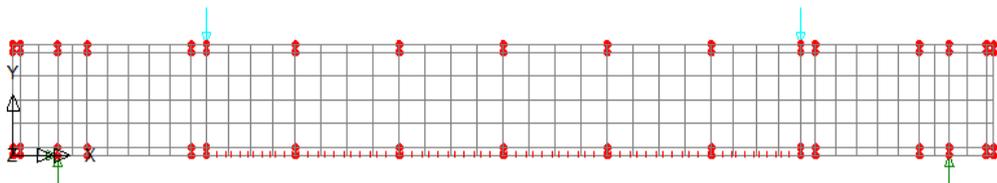
The value of the described strain is the value of the regression  $n$  at the initial condition of the crack and under ultimate loading conditions. The obtained concrete strain is a compressive strain in the middle of the span. For normal concrete beam without GFRP reinforcement (BGN), based on simulation result FEA LUSAS obtained preliminary cracking compressive strain 0.00006 and at ultimate load 0.00096. For shear with shear reinforcement using continuous shear GFRP (BGPF), based on simulation results FEA LUSAS obtained preliminary crack compressive strain of 0.00007 and ultimate load 0.0014. For beam with GFRP 3 strip (BGP3S) reinforcement, based on FEA LUSAS simulation results obtained preliminary crack compressive strain of 0.00007 and at ultimate load 0.0018. For more details see Table 5.

### 3.3. The Crack Model of the Beam

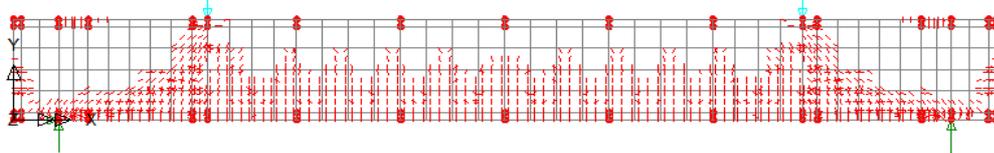
For normal concrete beam without GFRP reinforcement (BGN), the crack model that occurs is shear failure. GFRP continuous shear reinforcement (BGPF) beam, GFRP 3 strip (BGP3S) retaining beam, show different models of collapse i.e. collapse due to bending failure. See in figure 2 till figure

**Table 5.** Load and Strain Steel of Beams BGN, BGPF, and BGP3S

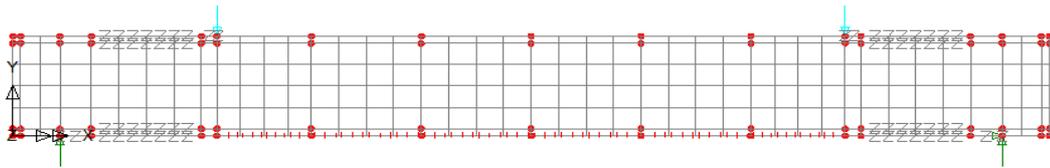
Beams Code	Load		Strain of Steel	
	$P_{Crack}$ (kN)	$P_{Ultimit}$ (kN)	Strain <sup>1</sup> (mm)	Strain <sup>2</sup> (mm)
BGN	13,999	76,393	0,00006	0,0096
BGPF	14,390	77,798	0,00007	0,0014
BGP3S	14,389	87,407	0,00007	0,0018



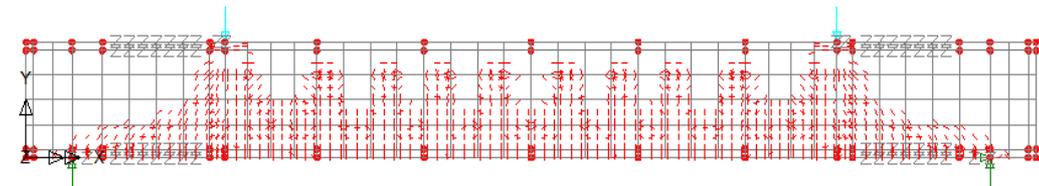
**Figure 2.** Crack Model in Normal Beam (BGN) when load  $P_{crack} = 14,390$  kN



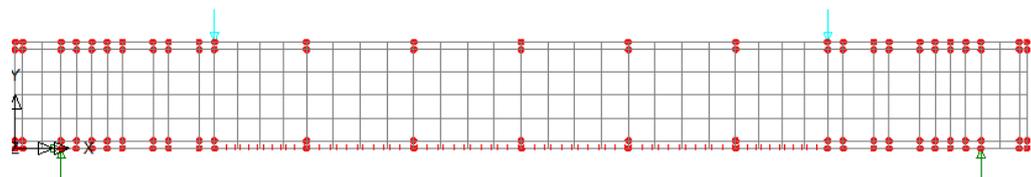
**Figure 3.** Crack Model in Normal Beam (BGN) when ultimate load  $P_{ultimit} = 76,963$  kN



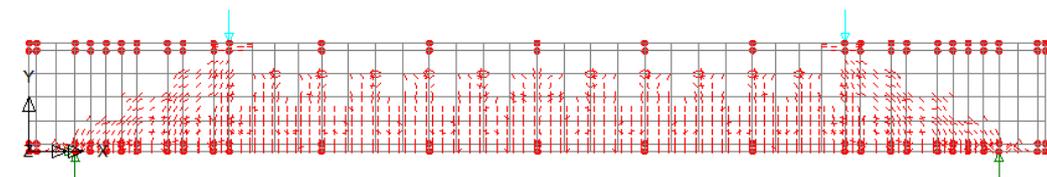
**Figure 4.** Crack Model in concrete beams with GFRP retrofit continuously mounted on a shear beam span (BGPF) when load  $P_{crack} = 14,390$  kN



**Figure 5.** Crack Model in concrete beams with GFRP retrofit continuously mounted on a shear beam span (BGPF) when ultimate load  $P_{ultimate} = 97,787$  kN



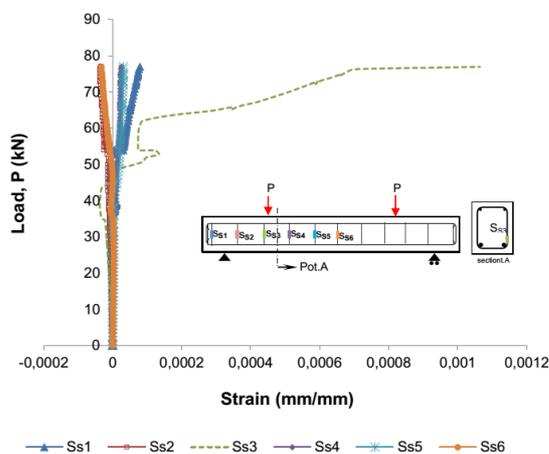
**Figure 6.** Crack Model in concrete beams with GFRP mounted 3 strips on the edge of the beam (BGP3S) when load  $P_{crack} = 14,390$  kN



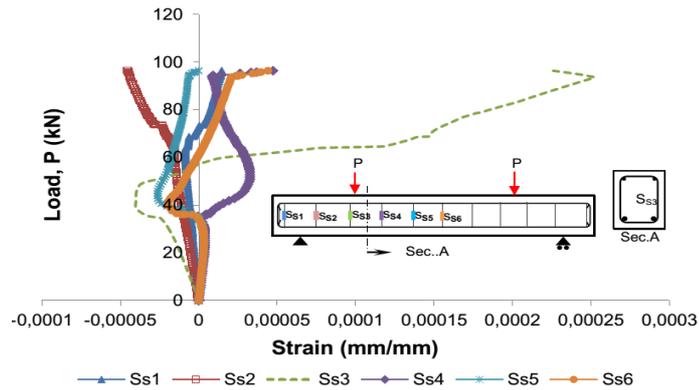
**Figure 7.** Crack Model in concrete beams with GFRP mounted 3 strips on the edge of the beam (BGP3S) when ultimate load  $P_{ultimate} = 96,577$  kN

### 3.4. Load and Strain Relation

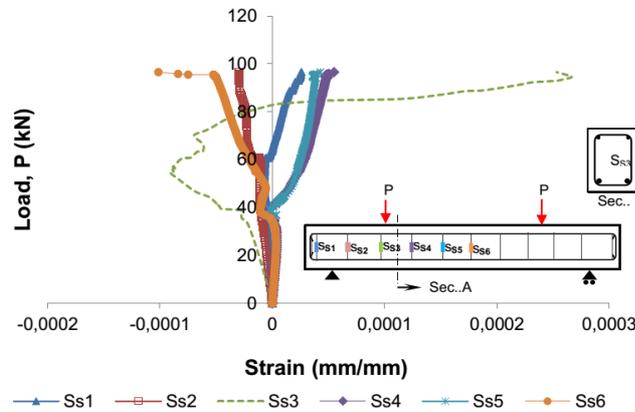
The load and strain relationships that occur in the shear reinforcement of each beam variation can be seen in Figure 8 to Figure 10. Figure 8 to Figure 10 shows the relationship between the load capacity and the shear steel strain for each shear reinforcement as reference is taken from the tip beam to center of beam span.



**Figure 8.** Chart of Loads and Strain Relation in Normal Beam (BGN)



**Figure 9.** Chart of Loads and Strain Relation in concrete beams with GFRP retrofit continuously mounted on a shear beam span (BGPF)



**Figure 10.** Chart of Loads and Strain Relation in concrete beams with GFRP mounted 3 strips on the edge of the beam (BGP3S)

The load relation curve and the shear reinforcement strain on the normal beam without GFRP (BGN) reinforcement are generally more upright. In a sense with relatively large load increments, the increment of strain is relatively small. This is caused before the tensile reinforcement steel, the tensile force at the cross section is accommodated by the tensile reinforcement at the bottom of the cross section of the beam at elastic time. The  $S_{S3}$  shear reinforcement curves for each beam variation of either the reinforced beam (BGN) or with the reinforcement (BGPF and BGP3S) show similar behavior. When the load reaches ultimate the  $S_{S3}$  shear strain reinforcement curve tends to be more gentle than the other shear strain curves. This is because the  $S_{S3}$  slope reinforcement position is just below the point load so the strain increase is relatively larger as the load increases.

### 3.5. Discussion

From the result of the research the load and deflection relationship for normal beam shows load capacity which is not much different between FEA LUSAS simulation with the result of theoretical design. For reinforced concrete beams with shear reinforcement using GFRP both continuously (BGPF), using 3 strips (BGP3S), indicates higher load capacity compared to normal reinforced concrete beam (BGN), this proves that GFRP gives contribution style in accepting load.

It can be seen that from the 2 models of GFRP installation variation FEA LUSAS simulation results show that the model that gives the largest shear capacity is beams with shear reinforcement using GFRP both continuously (BGPF). This proves that there is a good interaction or cooperation between GFRP and concrete in accepting the load.

The collapse model that occurs on a GFRP unstandarded beam is a shear failure model. The sliding fracture which is a continuation of the bending crack starts to occur in the span of shear or span that carries latitude and flexural force simultaneously. Based on FEA LUSAS simulation results, the more likely diagonal crack lines indicate that the shear crack occurs. Unlike the case with GFRP reinforced beam. The simulation results show that the crack line that occurs in 2 variations of beam with GFRP reinforcement tend to be perpendicular. And it proves that GFRP prevents the occurrence of shear failure, so the collapse model occurring on beams with 2 variations of GFRP reinforcement is the collapse due to bending failure.

#### 4. Conclusions and Recommendations

The research result indicated that generally, the program used can show the behavior closed to the theoretical design result. The ultimate load of results normal concrete beams without the shear retrofiting (BGN) is 76,963 kN, beams with shear retrofiting using GFRP are continuous on the shear span (BGPF) is 97,787 kN, and 96,577 kN in beams with retrofiting using 3 strips (BGP3S). The results showed that the percentage increase of normal ultimate load of beam with shear reinforcement using GFRP was 1.4%, 11.01%, for reinforced using 3 strips (BGP3S). Based on the results of this study, it is suggested that further research should be done simulation using 3-D element analysis so that visually can be seen the behavior of each beam component at each stage of loading of the beam until at the time of reaching the load causing the collapse.

#### References

- [1]. Alami F dan Ratna W . (2010). *Studi Eksperimental Perkuatan Geser Balok Beton Bertulang dengan GFRP (Glass Fiber Reinforced Polymer)*. Universitas Lampung. Bandar Lampung .
- [2]. Asroni Ali. (2010). *Balok dan Pelat Beton Bertulang*. Graha Ilmu. Yogyakarta.
- [3]. Deskarta P. (2009). *Perkuatan Geser Balok Beton Bertulang Menggunakan Glass Fiber Reinforced Polymer (GFRP)*. Jurnal Ilmiah Teknik Sipil Vol. 13, No. 2, Juli 2009.
- [4]. Kader I Made S. (2011). *Analisis balok beton bertulang dengan perkuatan lentur lembar CFRP*. Universitas Udayana. Bali.
- [5]. Kader I Made S. (2012). *Kinerja balok bertulang dengan perkuatan lentur lembar CFRP yang divariasasi menurut mutu beton dan jumlah lapis lembar CFRP*. Jurnal Matrix Vol. 2, No. 1, Maret 2012.
- [6]. Khalifa A., W.J. Gold, A. Nanni, dan M.I. Abdel Aziz (1998). *Contribution of Externally Bonded FRP to Shear Capacity of Flexural Members*. ASCE-Journal of Composites for Construction, Vol. 2, No.4, Nov. 1998, halaman. 195- 203.
- [7]. Kusnadi. (2011). *Studi Kemampuan Geser Balok Beton Komposit Yang Mengandung Styrofoam*. Universitas Hasanuddin. Makassar.
- [8]. Lusas. (2004). *Modeller Reference Manual version 14.0*. United Kingdom.
- [9]. Nawy E.G. (1998). *Beton Bertulang Suatu Pendekatan Dasar*. Refika Aditama. Bandung.
- [10]. Standar Nasional Indonesia (SNI). (2002). *Tata Cara Perhitungan Struktur Beton untuk Bangunan Gedung*. SNI 03-2847-2002.
- [11]. Wahjoedi. (2011). *Model numerik dan pengujian struktur balok beton bertulang dengan tulangan under reinforce*. Jurnal wahana teknik sipil. Vol. 16, No. 1, Juni 2011.

# Collegial Supervision Model at Primary School 4 Menteng Palangka Raya, Central Kalimantan, Indonesia

**Sanasintani**

High School Of The Christianity Of The Country Palangka Raya Jl. Tampung Penyang, RTA, Milono Km. 6 Palangka Raya 73112, Kalimantan Tengah  
Email: sana.sintani@yahoo.co.id

**Abstract.** The purpose of this study at Primary School 4 Menteng Palangka Raya Central Kalimantan was to describe: (1) implementation models of collegial supervision practiced by teacher, (2) teacher involvement in collegial supervision, and (3) the role principals play in the implementation of collegial supervision. The research applied qualitative. Paradigm referring to phenomenological approach. Research setting Primary School 4 Menteng. School principals were the key informants in which then were broadened to other informants-teachers and school administrative staffs. Data were collected through documentation study, observation, and interviews. Data analysis technique done through three stages of data reduction, data display and data conclusion drawing or verifying. Finding validity was tested through degree of credibility and confirmability. The finding of the research as follows: (1) teacher employed four models of collegial supervision formal-group, formal-individual, informal-group, and informal-individual models, (2) the implementation of collegial supervision teacher were involved as actors, participants as well as organizers, and (3) supervision from the principals played the roles in the implementation of collegial as manager who provide space, facilities, referency, and funding as well as schedule the activities. As leader, the principals appointed other teachers to share their experiences and to help another teachers keep team worked together, motivate other teachers to improve their competences to create conducive school climate, and maintain the collegiality atmosphere, inspire teacher to be courageous for improvement. As supervisor the principals provide opportunities for the teachers in helping each other in order to improve quality of learning, be models of supervisors, build the culture of mutual training.

**Keywords:** *supervision, collegial models, primary school*

## 1. Introduction

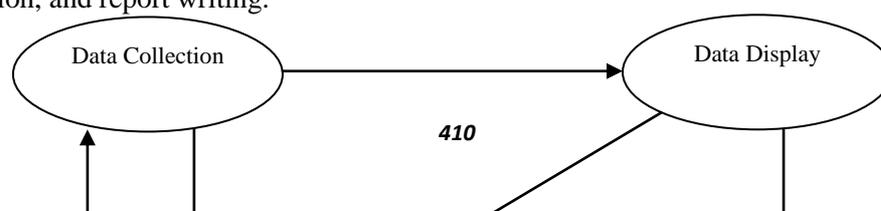
Teachers play a strategic role to realize a quality education. Growth and improvement of teachers' ability in teaching need to be developed because of that reason, and therefore teachers need to be given a supervision. Supervision is an aid given to teachers to improve their ability in teaching and learning process in the classroom (Mantja, 2007). Minister of Education Regulation Number 13 of Year 2007 indicated the guidance activities are listed dimension of teacher's competention and supervision. This dimension includes the activity of planning the academic supervision program for teachers by using appropriate approaches and supervision techniques and following up on the result of teachers' academic supervision in order to improve their professionalism. Tyagi (2010) emphasized the importance of principals to implement effective learning supervision in accordance with school conditions and to encourage teachers' professional development. The principal has many tasks, especially in the field of managerial. While school supervisors have a relatively wide area coverage within a supervisory area. A supervisor is responsible for about 16 schools, for that collegial supervision as an alternative to the implementation of supervision in schools in order to improve teacher quality. Collegial supervision is the process of providing help to teacher and other fellow teachers by working together, giving each other encouragement or guidance in improving their competence. Collegial supervision is identified to reduce the obstacles of coaching due to the limitation of the coaches (Mantja, 2007). Teachers do not wait for supervision activities done by school principals and school supervisors. Teachers can learn with other teachers, therefore their responsibility to

improvetheir professional competenceby learning to improve their abilities (Glickman, 2003). Teacher participation in self-development selected resources for feedback and makes decisions increasing year by year. Educators as a profession in the development of ability tends to shift from the model of "inspector" demodratic, collaborative model. The advantage of collegial supervision is that teachers are not afraid to convey the problem to other teachers; active teachers as supervisors and supervision; time between teachers is often done both in formal and non formal condition. The principal gives teachers the opportunity to help other teachers, so that teacher empowerment is more optimal for school progress. School as a system describes the relationship between principals, teachers and human resources. Teachers can be successful because of the help of their other fellows(Masyaroh, 2011).Collegial relationships can strengthen the existence of cultured schools. Effective schools are able to empower maximally the function, role and ability of teachers and principals to be an effective school empowerment process (Sunarto, 2010).The relationship between principals and teachers, the relationship between teachers and their fellows in this global world should be open, dialogical and democratic, helping each other. The nature of democratic relations is based on an awareness of equality and value. Teachers are given the opportunity to express their opinions, but on the contrary the rigid structural relationship between the principal and the teacher often becomes an obstacle to leadership and subordinate communication. The teacher is often afraid to the principal. The purpose of study was conducted to describe (1) model of collegial supervision implementation conducted by teacher to teacher, (2) teacher involvement in implementation of collegial supervision, (3) role of principal in implementation of collegial supervision.

## 2. Materials and Method

The approach used in this study was qualitative refers to the phenomenological nature. The phenomenological qualitative approach is an approach that not only examines the apparent social facts but aimed to express the meaning behind apparent social facts. For every social fact always has a certain meaning. Meaning is one of the characteristics of the main concern in qualitative research (Bogdan and Biklen, 2003). Those who engage in social interaction, constantly awaken their actions to a meaning. The meaning behind the apparent and intentional social facts is based on the perspective of the researcher's own subjects.This research was conducted at PrimarySchool 4 Menteng, Husni Thamrin Street Number 19, Palangka Raya, Central Kalimantan. Sources of research data include human and non human sources. The source of human data serves as the subject and key informant that is the subject that has a good relationship with the researcher, giving full assistance, giving understanding and good at issuing his/her thoughts in presenting the data (Bogdan and Biklen, 2003), and non human source data in the form of relevant documents with focus research. Key informants in this study 1 headmaster, from the key informant was developed to another informant ie teachers at SDN 4 Menteng. Data collection in this study was conducted through in-depth interviews, observation and documentation studies (Cresswell, 2003). Prior to carrying out data collection activities, the researcher identified sites and participants purposeful, including the setting (where the research), the actor (who will be observed and interviewed) events (what the actor does) and the process (development of the event's nature of the actors in the research setting).Techniques of data analysis briefly include data collection, data reduction, data display and data conclusion drawing or verifying. The techniques of data analysis called interactive models as suggested by Miles and Huberman (2004; Figure 1).

The validity for the findings in this study used two criteria as suggested by Moleong (2009), i.e.: (1) the degree of confidence (credibility) and (2) certainty (confirmability). The degree of confidence of a concept that emphasizes that the data presented can be entrusted. To test at the degree of confidence, some strategies for obtaining data accuracy i.e.: triangulation, member-checking, enriching descriptions, clarifying researcher biases in conducting research, presenting negative or inappropriate information, extending field time, peers or auditors (Cressweel, 2003). Qualitative research can be done by stages of exploring places or people that can be used as a source of research data, searching for sites deemed appropriate for research purposes, developing a wider network to find possible data sources, followed by observation, interviews, field notes, and data analysis as sugested by Mantja (2008). This research is systematically carried out with preparation stage, research implementation, and report writing.



### 3. Results and Discussion

#### 3.1. Implementation collegial supervision models practiced by teachers

Collegial supervision has a variety of models. There are models that are group, some are individual. Some are planned in detail spontaneously. Individual model and planned as developed by Glickman (1980), who reported that there are three supervisory approaches are: directive supervision, collaborative supervision, nondirective supervision. The supervision is renowned for its clinical supervision. Clinical Supervision is carried out in five steps: pre observation, observation of teaching, analysis and strategy, post observation conference, post conference analysis. From the five steps is simplified into three steps: pre conference, class observation, and post conference. Teachers in the team informally observe and become consultants to each other. The range of techniques ranges from clinical supervision to informal discussions and feedback.

The findings found of this study were four models of collegial supervision performed by teachers, namely: *group-formal model; individual model; informal group-model; and individual-informal models*. Everything starts from the planning, observation and discussion of the results of observation and follow-up. In the formal-group model of lesson study, the term plan, doo and see are used (IDCJ, 2009). In the individual-formal model in the form of clinical supervision used the term pre conference, class observation, post conference. The difference lies in the object of observation when the teacher teaches the students in the classroom. Lesson observation emphasizes teacher-led learning activities, while clinical supervision emphasizes teachers' teaching skills. Judging from the nature of its activities, the existing model leads to the development of teacher competence. Although not yet see the level of development of teacher competence in detail, teacher character variety, and level of teaching experience or seniority level of teachers. Competencies that receive teacher attention are mainly pedagogic competence, professional competence, personality competence, and social competence.

The discussion of the individual-informal model in accordance with the opinion Mantja (2007), who stated that the teacher teach to each other and to observe the other teachers in learning and discuss after the learning ended. Collegial supervision appeared in inservice training, i.e. teachers should be able to develop systematic observation skills and help provide feedback to other teachers. The findings of this research are similar to the findings of Mulyana (2007), who found that lesson study is one of the coaching efforts to improve the learning process conducted by a group of teachers in a collaborative and continuous way in planning, implementing, observing and reporting the learning outcomes. The findings of this study also supported the findings of Sergiovani (1997) and Sutopo *et al.* (1998). They reported that the use of clinical supervision implies the activity is teacher-centered. The term clinical here is almost the same as the prevailing terms in the medical world. In the medical world doctors provide services according to the needs of patients, held diagnosis, prognosis, disease determination, treatment and follow-up. In the clinical supervision there is also a systematic process based on diagnosis, observation and feedback in accordance with the existing problems.

The difference between clinical use in education and the medical world is his client. In the world of teacher education is a professional person who knows of his duty, so problem solving is emphasized more alternatives as determined by the teacher with the help of supervisor. While in the

medical world an alternative treatment is determined by her doctor. So the clinical supervision is teacher-centered supervision. The clinical term also contains the emphasis on the effort to correct mistakes made by teachers in teaching. However, it should be emphasized that the implementation involves teachers from the planning stage to the analysis of their success. The individual-formal model is concerned with aspects of the teacher's ability to develop learning components, teaching skills, character development of students with steps: preliminary meetings, classroom observations, and reverse meetings. Judging from Permendiknas Number 16 of 2017, the activities undertaken by the teachers develop pedagogic competence in point (3.5) to organize the learning materials correctly in accordance with the approach chosen according to the characteristics of learners of elementary school age; (3.6) develop assessment indicators and instruments; (4.4) implementing educational learning in the classroom, laboratory and in the field; (10.1) reflects on the lessons learned.

Through an informal group-model teachers are concerned with aspects of curriculum development, instructional tools and instructional media in accordance with teacher competence demands, the activities undertaken by teachers develop pedagogical competencies in (3) develop curriculum related to subjects/fields (4.5) using instructional media in accordance with the characteristics of learners and in the lessons of SD/MI to achieve the learning objectives as a whole. Social competence in point (19.2) communicates the outcomes of learning innovations to the profession community itself orally and in writing or other forms. Through this model teachers pay attention to aspects of classroom action research and learning strategies. Judging from the demands of teacher competence on the activities undertaken by the teacher develop pedagogical competence in point (2.2) define various approaches of strategies, methods, and instructional techniques that educate creatively in five subjects SD/MI. The professional competence in point (23.3) undertakes class action for professional enhancement and social competence in clause (19.2) communicates the results of instructional innovation to the profession community orally or in writing or other forms. Looking at individual-informal models teachers are concerned with aspects of classroom problem solving and the problems facing students in the classroom. Judging from the competence of teachers, the activities undertaken by the teacher develop personality competence in point (14.1) shows a high work ethic and responsibility. The above models in accordance with the findings of Hawkins and Sholet (2006), who used the term peer supervision. Peer-co-supervision takes place in a group whose members supervise each other. Teachers at school can discuss to solve learning problems or related to peer-to-peer learning. The findings of this study on initial activities and feedback meetings in informal-group models and individual-informal models were implemented outside the effective hours of teaching, meaning that when teachers were resting or after teaching hours. Whileclass observation activities were performed when the teacher observed was teaching, but the observer did not have teaching hours or teaching hours filled by other teachers. The informal group-model is held at break time, after the learning hours are completed on Saturdays and on holidays.

This findings differed from other findings that teachers use an average of 40 minutes each day to have conversations with colleagues discussing classroom teaching. Topics that many discussed are subject matter, discipline, activity, and individualization. While the less discussed topics are evaluation, method, objectives, giving the ability to explain abilities, the ability to ask and the organization of the class (Maisyaroh, 2011). While the topics discussed at collegial meetings are more varied than about learning as well as research and problem solving students. Topics covered include teacher's ability to develop learning components, learning situations, student activities, curriculum development, learning tools, instructional media, learning strategies, teaching skills, developing student character, classroom action research, learning problems, problems faced by students in the classroom and the solution. Peer counselling can be implemented in schools if there is a spirit of togetherness among teachers in solving common problems. Hawkins and Sholet (2006) recommended the following eight establishing a peer-supervision group: (1) establishing groups of equal value; (2) group members may not exceed 7 persons; (4) establishing a clear contract, (5) knowing there are different expectations, (6) clarifying the roles of members, (7) determining the time, and (8) planning a review session once every three months to provide feedback on the role of group members.

This study found how to form groups following the needs of teachers. The supervision team members used the parallel class teacher system for Grade 1 to Grade 3 and subject teachers for Grade 4 through Grade 6. Group formation in an informal group-model using a classical system followed by a group of subject teachers. While the formation of a pair in an individual-informal model is adapted

to the needs of the teacher. This findings are differed from the statement of Manja (2007), who gives 10 examples for the implementation of cooperative professional development as follows: (1) teachers choose friends to cooperate, (2) principals have final responsibility to maintain team togetherness, (3) formal supervision structure, the team recorded how the implementation and when it was implemented and the activity description to be reported to the principal,(4) the principal provided necessary resources and administrative support at the school,(5) if there were evaluations discussed in the team, (6) no principal activity to know the evaluation data of a person about the other teachers, (7) each teacher maintains his professional growth, (8) the principal meets once a year with the aim of conducting general assessments and exchanging ideas about the process of activities, (9) the principal meets individually at least once a year to discuss professional growth, respect and help if needed, and (10) new teams will be formed every two or three years.

### **3.1. Teacher involvement in collegial supervision**

The findings of this research there are two kinds of teacher involvement in the implementation of collegial supervision, i.e.: executor and manager of the team. This teacher involvement supported by Meirink *et al.* (2010) that collaborative supervision execution is atin innovative, temporary, and voluntary teams can improve teacher professional development. As the teacher's collegial supervisory activity acts as supervised person, the teacher is an observer and other teacher as observed in formal-group models and individual-formal models. The findings of this study supported the lesson reported by IDCJ (2009) that schools should be established on the basis of collegiality, teachers and colleagues discuss practice, observe each other's classes, create common ideas about the class, and encourage one another. Prinsive togetherness coloring the implementation of clinical supervision (Mantja, 2009). Teachers of a team of clinical supervision, planning, observing the class and discussing the results of the observations together. Teachers as facilitators or presenters in an informal group-model as well as participants. This research findings are in line with the provisions contained in Permendiknas RI Number 16 Year 2007 that teachers should have the competence to communicate the results of instructional innovation to the profession community orally and writing or other forms and teachers are also required to follow the progress of the times by learning from various sources.

The findings of this study are also consistent with Lipham *et al.* (1985) that teachers can learn from other teachers and vice versa. All teachers should have a responsibility to improve their abilities (Glickman, 2003). The involvement of teachers in the implementation of collegial supervision is also the same according to the mandate of the Law of the Republic of Indonesia Number 14 Year 2005 Chapter III Article 7 Paragraph 2 which emphasizes the application of professional professional empowerment empowerment principles. The findings of this study also indicated teacher involvement in solving problems with other teachers. This findings agreed with Ruck (2006), who suggested an interactive and interactive relationship of supervisors and supervisory supervisors, interactive professional dialogue in an intimate and open environment to solve learning problems together. Subsequent teacher involvement as manager of collegial supervision activities. In addition to implementing the activities of teachers get the opportunity to be involved in managing activities. The research findings indicate the teacher is involved in planning the activity, analyzing the teacher's needs, determining and recording the execution time, following the implementation process, evaluating and follow-up. The result of this study is consistent with the findings of the Yanasan (2008), who reported five steps of the teacher's role in collegial supervision: (1) studying existing conditions, formulating problems and analyzing needs; (2) planning; 3) define tools and develop methods; (4) implements; and (5) conduct evaluation and prepare reports.

### **3.2. The role principal in the implementation of collegial supervision**

The role of the principal within the school system can be distinguished as the manager, leader, and educational supervisor. These three roles can be used to facilitate the implementation of collegial supervision. The principal has a strategic role in realizing effective collegial supervision. Gordon (1976) argued that education management substance includes activities in personnel, student affairs, school-community relations, curriculum development and teaching, finance, business, infrastructure and general activities. On the other hand, Camphabel (1977) reported there are seven administrative tasks namely; school relationships with the community, curriculum and teaching, finance, business and organizations. Not all substance of management above education coloring the implementation of supervisioncollegial. The role of school principals in infrastructure, financial and curriculum management activities color the implementation of collegial supervision.

The findings of this study dealing with principal as a manager role provides space, library resources, facilities, and schedule of activities. Furthermore, the role of the principal as a school supervisor can facilitate the implementation of collegial supervision. The principal provides an example for teachers to carry out supervisory activities. Basically the supervision of learning is an effort to provide assistance that focuses on aspects that are directly related to the scope of learning activities, at the time students follow the learning process. Glickman (2003) suggested that supervision of learning is a series of activities to help teachers develop their ability to achieve teaching objectives. Learning supervision does not assess teacher performance in managing learning, but rather helps teachers develop their professional capabilities. Although in the process for data collection the principal provides a learning resource for teachers. Substitute teacher in class if needed can be adjusted schedule with time owned by team to cooperate. The principal has the final responsibility of maintaining team responsibilities. In addition, the principal also encourages teachers to maintain a climate of collegiality, establishes supervisory structures, and integrates programs that enable teachers to develop their professional expertise (Ruck, 2006). Thus the findings of this study can enrich the review of school supervision supervision. Besides, the intensity and quantity of the supervision implementation can be realized and the teachers get guidance and assistance in developing their capability from school principals and school supervisors. Help can also get from fellow teachers who can take place at any time according to the time owned by the teacher.

#### **4. Conclusions and Suggestions**

##### **4.1. Conclusions**

1. There are four models of collegial supervision in implementation of collegial supervision models practiced by teachers at SDN 4 Menteng Palangka Raya Central Kalimantan. They were formal-group models; individual-formal model, informal-group model and individual-informal model.
2. The role principals in the implementation of collegial supervision as a school manager, plays a role in providing space, facilities, library resources, funds, scheduling collegial supervision activities. Except in brainstorming activities, the role of headmaster is less visible because it takes place spontaneously and in various places. The principal also acts as a leader. appoint teachers to become observers or supervisors and teachers to be supervised. The principal gives the teacher the opportunity to help each other improve the quality of learning, set an example to supervise teachers, develop mutual care, care and compassion. Emphasize the importance of learning all the time through interaction with other teachers.

##### **4.2. Suggestions**

1. Head of Education Office of Palangkaraya City, Central Kalimantan can use the results of this research as input to improve the policy of teacher elementary school competence development, through the implementation of collegial supervision. Enhancement of supervisors' capacity in developing principals and teachers should be a major concern. Especially the implementation of formal-group models and individual-formal models that are directly related to improving the quality of learning.
2. Head of SDN 4 Menteng City of Palangka Raya, Central Kalimantan can use the results of this research as an alternative of supervision of learning in school. Besides as an input to refine the various models of the implementation of collegial supervision, optimize teacher involvement and improve the role of principals in the implementation of collegial supervision in schools.
3. Teachers should follow up on the results of collegial supervision conducted in the four models to be applied in the learning so that the quality of learning can be better. Teachers can also use the results of this research as a revision of the development of capability in detail so that it can be used as a refinement of supervision for further self-development.
4. Other researchers may use the results of this study as a basis for further research that can still be developed with deeper reinforcement and different approaches. Other researchers should: (a). Research further the model of collegial supervision by emphasizing: (1) Characteristics of teachers coloring the model,(2) The effectiveness of the model in improving the quality of collegial supervision,(3) The existence of an expert in a formal-group model,(4) The role of school principals and supervisors in shaping the model of implementation of collegial supervision; and (b). Incorporate teacher career path invoices as conditions that color the effectiveness of the

collegial supervision model. In professional roles, adult and principal teachers should demonstrate high professional capacity and maturity to color collegial supervision pratek.

## References

- [1]. Bogdan, R.C. and Biklen,S.K.2003. *Qualitative, Research for Education: an Introduction to Theory and Methods*. Boston: Pearson Education, Inc.
- [2]. Creswell, J.W. 2003. *Research Design: Quantitative, and Mixed Method Approaches*. London: SAGE Publication, Inc.
- [3]. Glatthorn, A.A.1984. *Differentiated Supervision*, Alexandria, VA: ASCD. (Online). <http://coursel.winona.edu/lgray/1620/unit5Inst/collegial.htm>. Accessed on 18 March 2018.
- [4]. Glickman, C.D., Gordon, S.P., and Ross-Gordon, J.M.2007. *Supervision and Instructional Leadership: A Development Approach*. Boston: Pearson.
- [5]. Hawkins, P. And Shohet, R. 2006. *Supervision in the helping Professions*. New York. Open University Press.
- [6]. International Development Center of Japan. 2009. *Panduan Untuk Peningkatan Proses Belajar Mengajar*. Program Peningkatan Kualitas (Pelita SMP/MTs). Kerjasama Dinas Pendidikan Nasional, Departemen Agama Republik Indonesia dan *Japan International Cooperation Agency (JICA)*.
- [7]. Lipham, J.M. Rankin, R.E., and Hoeh, J.A., Jr., 1985. *The Principalship: Concepts, Competencies, and Cases*. New York: Longman.
- [8]. Maisyroh, dkk. 2011. *Pelaksanaan Pembinaan Kemampuan Profesional Guru di Lembaga Pendidikan Laporan Penelitian* tidak diterbitkan. Malang: AP FIP Universitas Negeri Malang.
- [9]. Mantja, W. 2007. *Profesionalisme Tenaga Kependidikan: Manajemen Pendidikan dan Supervisi Pengajaran*. Kumpulan Karya Tulis Terpublikasi. Malang: Elang Mas.
- [10]. Mantja, W. 2008. *Etnografi: Desain Penelitian Kualitatif Pendidikan dan Manajemen Pendidikan*. Malang: Elang Mas.
- [11]. Meirink, J.A., Imants.J., Meijer.P.C, and Verloop, N. 2010. . Teacher learning and collaboration in innovative teams, *Cambridge Journal of Education*, June, 40 (2): 161.
- [12]. Miles, M.B. and Huberman, M.D. 2004. *Qualitative Data Analysis; a Sources of New Method*. Beverly Hills: Sage Ribbication.
- [13]. Moleong, L.J .2009. *Metodologi Penelitian Kualitatif*. Bandung: P.T. Remaja Rosda Karya.
- [14]. Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 12 Tahun 2007 tentang Standar Kepala sekolah/Madrasah.
- [15]. Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 13 Tahun 2007 tentang Standar Kepala sekolah/Madrasah.
- [16]. Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 16 Tahun 2007 tentang Standar Kualifikasi Akademik dan Kompetensi Guru.
- [17]. Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 22 Tahun 2006 tentang *Standar isi untuk satuan Pendidikan Sekolah Dasar dan Menengah*.
- [18]. Ruck, C. 2006. *Creating a School Context for Collegial Supervision: The Principal's Role as Contractor*, OSSC Bulletin, V 30 N 3 Nov 1986, Publication Sales, Oregon School Study Council 1787 Agate Street, Eugene, or 97403 (online)
- [19]. Tyagi, R.S.2010. *Compare School Based Inructional Supervision and The Effective Professional Development of Teacher*. Oxpord: January, 40 (1):111.

# Analysis Service Indicator of Speed Bumps on Toboko Road in Ternate City

Santospriadi

Faculty of Engineering, University of Muhammadiyah North Maluku, Ternate 97726,

**Abstract.** Interrupted flow in Public Street could be finding at toll gate , cross road, market, school, and speed bumps. This research was carry out for study and proven ineffectivity speed bumps be laidown in Toboko Street. There for ineffectiveness can be seen in degrees services indicator (LOS = Level of Service) compared before and after speed bumps was set. Analytical relation among variable in street traffic. (i.e. speed vehicles, volume/street capacity) solution must be obtained to breaks the problem of inefficiency for future time. In Ternate City region speed bumps usually be placed in local street/community areas. This phenomenom born in Toboko street, speed bumps who has set in that area absolutely disturb the comformity, accessibility, and borning sequence for the street usage.

Outcome of the study declare that : site area before speed bumps be laid, and site area speed bumps be facilitated, (degree service) F, speed bumps facility don't prevent a drivers to decreased speedity of their vehicles when its close in the area. Velocity free flow in non area facility  $V_{free} = 29,424$  km/H, meanwhile in the street by facility area  $V_{free} = 5,147$  km/H. Flow maximum in non area facility  $F_{max} = 8,112$  vehicles/H, in the facility area  $F_{max} = 1,157$  vehicles/H. Decreasing flow maximum occurred in the street by facility speed bumps. Irrasional planning on traffic engineering in Toboko street, by setting speed bumps, caused lowered degree service (LOS). Countinousing to set speed bumps facility in Toboko street, degree service will be LOS F (Level of Service False).

**Keywords :** *Speed bumps, LOS, Velocity Free Flow*

## 1. Introduction

Capacity analysis using parameters is often called service level analysis (level of services = LOS). There are six levels of service, namely: A, B, C, D, E, F. Service level A has the characteristics of free current flow, due to low vehicle volume and vehicle speed high. While the level F decreases the speed of the current, low speed and queue occur. The level of service of a road at any time may vary depending on the activity or road disturbance being evaluated.

The Speed Bump may cause interrupted flow on the highway. In Ternate city Speed Bump are installed on local roads / neighborhoods, and are often also installed on the road arteries and collectors. This is clearly visible in Toboko street with a Speed Bump very disturbing accessibility and convenience. It should be the Way Such can provide a good level of service but the opposite effect is given the police sleep level service to be low.

The problem here is the result of the installation of the Speed Bump on the street which decreases the level of road service at any time such as low speed and vehicle volume. It is necessary to identify the level of service on the street due to the effects of the sleeping police, before and after speed bump. Furthermore, there is a result solution that provides for future improvement.

This study has the objective of assessing the ineffectiveness of installed Speed Bump on Toboko Street. Ineffectiveness can be seen from the level of service (LOS) before and after being installed by the Speed Bump. Furthermore, from the analysis of vehicle traffic speed and the ratio of volume / capacity and solutions to overcome inefficiencies in the future.

The road capacity is the maximum traffic flow through a point on the road can be maintained under certain conditions (MKJI 1997). Road capacity according to MKJI 1997 influenced by several things, ie the width of the traffic lane of the road, the direction factor traffic, side barrier factors and city size.

Spot speed vehicles are when a vehicle passes somewhere or point on the highway. The average speed of all traffic at a particular point is also known as time mean speed. One of the basic methods of spot speed study is to determine the distance space and measure the travel time of the vehicle that passes side barriers are the impact on the traffic performance of side activities road segments, such as pedestrians, public vehicles / other vehicles are stopped, vehicles in and out of road side and slow vehicle (MKJI 1997).

In the capacity determination want to know the existence of different operating conditions when volume of ongoing traffic. This leads to a conceptual level of service that can be interpreted extensively, any amount of different combinations of operating conditions will occurs on existing road traffic paths according to variations in traffic volume.

Service level is a qualitative measure of the influence of various factors, includes:

- a. speed of operation and travel time,
- b. traffic disturbance and stop frequency,
- c. freedom of maneuver,
- d. safety,
- e. comfort driving,
- f. vehicle operating costs.

Six service levels are marked with letters A through F, which are determined in the form of the value of the speed limit and the ratio of the demand (or service) volume to capacity. In practice, any road or part of the road will operate on a wide range level of service, depending on the time of day, day of week and period of year.

States a good path, with high capacity and only used only a few vehicles, the vehicle will be found in a road condition nice. This is an 'A' service level. As traffic increases the speed decreases, drivers encounter more crowded roads. Furthermore, when traffic volume reaches or beyond capacity from the road, service levels fall at the lowest level 'F' or condition forced flow. Service level volumes for different types of roads in ideal conditions can be seen in table 1.

**Table 1.** Level of services of various road type elements under ideal conditions

Level Of Service	Wo Way Street, Two Lane (smp)
A	400
B	900
C	1400
D	1700
E	2000
F	< 2000

## 2. Research Methods

identification of service levels on the road before and after interruption is installed speed bump. Primary data: speed of traffic flow, volume, and density, and road capacity. Traffic data moving from the south to the north before and after the police sleep. Secondary data include: Site plan lay out of research area, characteristics of vehicle types.

Personnel surveyors in this study as many as 4 people in each location. before and after the police sleep. Surveyor in charge of finding parameters parameters: speed traffic flow, volume, density, and data determinant of Toboko Street capacity by method digital. Study area at the location before (first location) and in the existing area of the sleeping police (second location). Each type of passing vehicle is recorded and then converted unity passenger car.

The survey was conducted for 1 day ie Monday, 07 August 2017. Survey time at WIB, morning at 07.00-09.00 WIB. Every hour of research time is divided again being a 15 minute duration.

## 3. Data and Analysis

Relation between density velocity variables, and flow with density Next will determine the level of service (LOS) for in the first location (no Speed Bump) and second (in the Speed Bump area).

### 3.1. Service Level (LOS)

Service Level in First Location (Area Before Speed Bump):

a. Analysis of service levels in the first location

Stopping sight distance,  $SSD = 0,28Vt + 0,01V^2$

$$= (0,28 \times 29,424 \times 1) + (0,01 \times 29,424^2)$$

$$= 16,8966 \text{ second}$$

$$\text{Basic capacity} = (1000 \times V) / (L + SSD)$$

$$= (1000 \times 29,424) / (4,055 + 25,1788)$$

$$= 1.006,5061 \text{ smp}$$

$$\text{Volume} = 1.172 \text{ vehicle/hour}$$

$$\text{Volume} / \text{Capacity} = 1.172 / 1.006,5061 = 1,1$$

Value of speed  $V = 29,424 \text{ km/hour}$  dan  $V/C = 1,1$  level of service (LOS) F.

b. Service Level in second Location (Area Speed Bump):

Volume = 194 Vehicle/hour

$$\text{Volume} / \text{Capacity} = 194 / 601,7683 = 0,3224 \approx 0,32 \text{ value of speed } V = 5,147 \text{ km/hour}$$

and  $V/C = 0,32$  .Level of service (LOS) F.

### 3.2. Analysis of Traffic Characteristics and Level of Service (LOS)

From the results of the analysis of traffic analysis and level of service (LOS) in Jalan Toboko without the Speed Bump and in the Speed Bump area can be seen ie both in the no area (before entering) and there are Speed Bumps waiter level (LOS) F. The effect of the Speed Bump makes the driver at close range has reduced speed. Free flow velocity in the area there is no  $V_{\text{free Speed Bump}} = 29,424 \text{ km / h}$ , while in the  $V_{\text{Free Speed Bump}}$  area =  $5,147 \text{ km / hour}$ . Maximum flow in area no Speed Bump  $F_{\text{mak.}} = 8.112 \text{ vehicles / hour}$ , while in the Speed Bump area  $F_{\text{mak.}} = 1.157 \text{ vehicles/hour}$ . There was a maximum flow in the Speed Bump area.

## 4. Conclusion

On Toboko road after installed Speed Bump service level (LOS) F, the influence of Speed Bump makes the driver reduce speed, free flow velocity in the area no Speed Bump  $V_{\text{free}} = 29,424 \text{ km / h}$ , while in the  $V_{\text{Free bed police area}} = 5,147 \text{ km / h}$ , the maximum flow in the area is no Speed Bump  $F_{\text{mak.}} = 8.112 \text{ vehicles / hour}$ , while in the Speed Bump  $F_{\text{mak.}} = 1.157 \text{ vehicles / hour}$ . There is a maximum flow in the Speed Bump area

## 5. Recommendation

1. The Public needs to be a basic understanding of the Speed Bump in determining the policy and restoring the function of Toboko Street as before without the Speed Bump
2. The Public needs to be informed of the terms of placement the Speed Bump.

## References

- [1]. Ministry of Public Works, 1997, Indonesia Road Capacity Manual, Directorate General of Highways, Jakarta.
- [2]. Regional Secretary of Ternate City (2014), Map of City Administration Ternate [id.wikipedia.org/ wiki/kota\\_ternate](http://id.wikipedia.org/wiki/kota_ternate).
- [3]. Munawar, A., 2004, Urban Traffic Management, Beta Offset, Yogyakarta. Republic of Indonesia, 1993, Law No. 14 of 1992 on Road Traffic and Transportation, Ghalia Indonesia, Jakarta.

# Profitability Analysis of Rural Banks in Manokwari: a Case of Arfak Indonesia Rural Bank

Sarah Usman<sup>1)</sup>, Mona Permatasari Mokodompit<sup>2)</sup>

<sup>1)</sup> Department of Management, Universitas Papua, Manokwari, Indonesia  
Email: sarahwaodeusman@gmail.com

<sup>2)</sup> Department of Accounting, Universitas Papua, Manokwari, Indonesia  
Email: mmokodompit@gmail.com

**Abstract.** Rural Bank is a bank which based its activities on conventional or Syariah Principles. The existence of rural bank supports the implementation of national development in order to improve equity, economic growth and national stability towards the improvement of people's welfare. In order to identify the development progress of rural bank in Manokwari, it is necessary to evaluate the financial statement of rural bank since it provides important information to stakeholders such as the rural bank financial health. Thus, the purpose of this research is to analyze whether the financial report has met the standards of Indonesian Central bank based on profitability ratios of rural bank in Manokwari using Arfak Indonesia (Arfindo) Rural Bank as a case study institution. Return on Asset (ROA), Return on Equity (ROE) and Operating Expenses and Operating Income (efficiency ratio) were the profitability ratios used in analyzing the financial performance. The findings indicate that the financial performance of Arfak Indonesia Rural Bank in Manokwari based on the average profitability ratios is good, with the average ratio value of ROA 6.07 percent, ROE 43.72 percent and efficiency ratio 50.43 percent. This means the financial report of Arfindo Rural Bank has met the standards of Indonesian Central bank.

**Keywords:** *Profitability, Return on Asset, Return on Equity, Operating Expenses and Operating Income, Financial Performance, Rural Bank.*

## I. Introduction

According to the Act of Republic of Indonesia Number 7 of 1992 concerning Banking as amended by Act Number 10 of 1998, Bank is a corporate entity mobilizing funds from the public in the forms of Deposits and channelling them to the public in the forms of Credit and/or other forms in order to improve the living standards of the common people. Further, Rural Bank is a Bank which based its activities on conventional or Syariah Principles in doing so shall not provide any service in payment transactions. The success of a Rural bank can be reflected from its financial performance that has been achieved. It is necessary to evaluate the condition of rural bank's financial report in order to identify its progress development and its financial health. Those information is important to stakeholders such as owners, managers as well as to the community using bank services since it can be used to evaluate bank performance in establishing prudential principles, compliance with prevailing regulation and risk management.

Moreover, financial report can be analysed by using financial ratios that are adjusted to the health standards of Bank Indonesia as a central bank in Indonesia. Profitability ratio is one of the ratios used in analysing financial report. It illustrate the ability of a company to earn profits through all capabilities, and existing sources such as sales activities, cash, capital, number of employees, number of branches and so on. There were previous studies used Return on Asset (ROA), Return on Equity (ROE) and Operating Expenses and Operating Income (efficiency ratio) as the profitability ratios in analyzing financial report, such as studies by Kabajeh et al (2012) that he purpose of this study is to examine the relationship between the ROA, ROE and ROI ratios together and separately with Jordanian insurance public companies share prices during the period (2002-2007). Based on the empirical evidence, the results showed a positive relationship between the ROA, ROE and ROI ratios together with Jordanian insurance public companies share prices. The results also showed a

positive but low relationship between each of ROA ratio separately and ROI ratio separately with Jordanian insurance public companies share prices. However, the results showed no relationship between the ROE ratio separately with Jordanian insurance public companies market share prices.

And such as studies by utami (2015) that Some financial ratios of banks as indicators in assessing the performance of the bank include the capital adequacy ratio (CAR), operating expenses to operating income (efficiency ratio), net interest margin (NIM), Loan to deposit ratio (LDR), and return on assets (ROA). efficiency ratio is used to measure the efficiency and ability of banks to carry out operation activities.

Efficiency ratio will affect the profitability of banks. such as research conducted by Kesowo's research in yuliani (2007) attempted examine the relationship between the level of operational efficiency on performance profitability of 40 national private foreign exchange public banks in Indonesia. The results of this study give evidence of the more efficient the operational performance of a bank then that profit obtained will be greater.

Based on the explanation above therefore the purpose of this research is to analyze whether the financial report of Arfak Indonesia (Arfindo) Rural Bank has met the standards of Indonesian Central bank using profitability ratios (ROA, ROE and efficiency ratio).

## 2. Methods

The data of this descriptive research is the financial report of Arfindo Rural bank from the period of 2012 to 2015. The data was then analysed by using profitability ratios. Profitability ratios are an indicator for the firm's overall efficiency. It's usually used as a measure for earnings generated by the company during a period of time based on its level of sales, assets, capital employed, net worth and earnings per share. Profitability ratios measures earning capacity of the firm, and it is considered as an indicator for its growth, success and control (Kabajeh, et al :2012). The profitability analysis are ROA, ROE and efficiency ratio. The formula used for each ratio can be seen below:

1.  $ROA = (\text{Net Profit} / \text{Average of Total Asset}) \times 100\%$
  2.  $ROE = (\text{Total Equity} / \text{Average of Equity}) \times 100\%$
  3.  $\text{Efficiency Ratio} = (\text{Operating Expenses} / \text{Operating Income}) \times 100\%$
- (Source: Harahap, 2010)

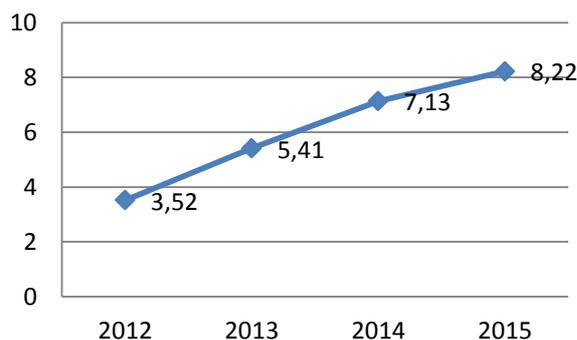
The standards used in measuring the profitability ratio of Arfindo Rural Bank is based on the Circular Letter of Indonesia Central Bank Number 13/24/DPNP 25<sup>th</sup> October 2011 can be seen as follow:

1.  $ROA > 1,5\%$  is good
2.  $ROE > 23\%$  is good
3.  $\text{Efficiency Ratio} < 93,52\%$  is good

## 3. Result and Discussion

### 3.1. Return on Asset (ROA)

This ratio is calculated as net profit after tax divided by the total assets. This ratio measure for the operating efficiency for the company based on the firm's generated profits from its total assets (Kabajeh, et al, 2012). Based on the data research, the value of ROA of Arfindo Rural Bank is shown in Figure 1.

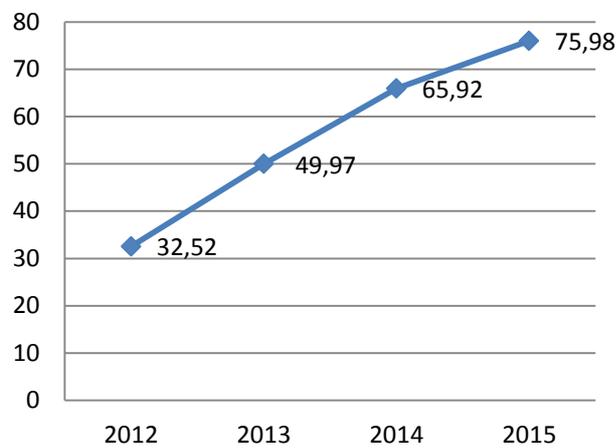


**Figure 1.** The ROA Value of Arfindo Rural bank during 2012 - 2015

Based on Figure 1, it is shown that the ROA Value of Arfindo Rural bank increases during 2012 to 2015, with 3.52 percent in 2012 and 8.22 percent in 2015. Based on the standards stated in the Circular Letter of Indonesia Central Bank Number 13/24/DPNP, the ROA value of Arfindo Rural Bank is above 1.5 percent during 2012 to 2015 with the average ROA value of 6.07 percent. This means that based on the ROA value the financial performance of Arfindo Rural Bank is in the good category or in other words has met the standards of Indonesian Central bank. It also shows that Arfindo Rural Bank is able to optimize the use of assets in giving profits to the company.

### 3.2. Return on Equity (ROE)

Return on Equity is compute by dividing net income less preferred dividend by average company stockholder equity (Weygandt, *et al*, 2001). Based on the research data, the ROE value of Arfindo Rural Bank has increased during each year. In 2012, the ROE value is 32.52 percent, while in 2015 it is 75.98 percent (Figure 2). This shows that the ROE value is above 23 percent, which based on the standards stated in the Circular Letter of Indonesia Central Bank Number 13/24/DPNP means the financial performance of Arfindo Rural Bank is in the good category and has met the standards of Indonesian Central bank, with the average of ROE value of 43,72 percent. Further, it also means that the value of net income of Arfindo Rural Bank obtained from the capital continues to increase year by year.

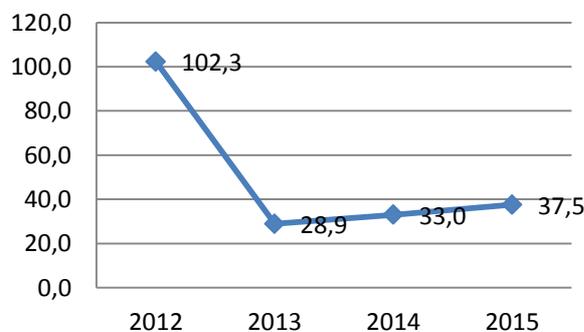


**Figure 2.** The ROE Value of Arfindo Rural bank during 2012 – 2015

### 3.3. Operating Expenses/Operating Income (Efficiency ratio)

The efficiency ratio is calculated by dividing over head expenses by the sum of net interest income and non-interest or fee income. It is a measure of how effective a bank is in using overhead expenses including salaries and benefit costs and occupancy expenses as well as other operating expenses in generating revenues (Hays, et al, 2017).

The smaller efficiency ratio value means the more efficient the banking operates. The efficiency ratio below:



**Figure 3.** The efficiency ratio Value of Arfindo Rural bank during 2012 – 2015

Based on Figure 3, it is shown that the efficiency ratio value of Arfindo Rural Bank decreases during 2012 to 2015, from 102.3 percent in 2012 to 37.5 percent in 2015. Based on the standards

stated in the Circular Letter of Indonesia Central Bank Number 13/24/DPNP, the efficiency ratio value of 2015 is in good category since it is below 93.52 percent which is 37.5 percent. Further, the average efficiency ratio value of Arfindo Rural Bank during 2012 to 2015 is 50.43 percent which is still below 93.52 percent. This means the financial performance of Arfindo Rural Bank is in good category and has met the standards of Indonesian Central bank.

#### **4. Conclusions**

The results shows that based on the profitability ratios of ROA, ROE and efficiency ratio, the financial report of Arfak Indonesia (Arfindo) Rural Bank has met the standards of Indonesian Central Bank, with average ROA value of 6.07 percent which is above 1.5 percent, average ROE value of 43.72 percent which is above 23 percent and average efficiency ratio value of 50.43 percent which is below 93.52 percent. Thus, based on the standards stated in the Circular Letter of Indonesia Central Bank Number 13/24/DPNP shows that financial report of Arfindo Rural Bank is in good category.

#### **ACKNOWLEDGMENT**

We would like to thank Arfak Indonesia (Arfindo) Rural Bank who is able to provide us with their financial report in order for this research to be completed.

#### **References**

- [1]. Bank Indonesia. Bank Indonesia Circular Letter Number 13/24 / DPNP dated October 25, 2011.
- [2]. Harahap, Sofian Safitri, 2010. Analisis Atas Laporan Keuangan, Jakarta : Rajawali Persada.
- [3]. Hays, Fred H., Stephen A. De, Arthur H. Gilbert, Jr. 2007, Efficiency ratios and Community Bank Performance, Journal of Finance and Accountancy .
- [4]. Ikatan Akuntan Indonesia (IAI), 2007, Standar Akuntansi Indonesia, PSAK.
- [5]. Kabajeh, et al, 2012, The Relationship between the ROA, ROE and ROI Ratios with Jordanian Insurance Public Companies Market Share Prices. international Journal of Humanities and Social Science, Vol. 2 No. 11 ; June 2012. <https://www.uop.edu.jo/download/research/>
- [6]. Act Number 10 of 199 8 concerning Banking
- [7]. Utami rahmi siti, 2005, Comparison Between Bank Performance Of Commercial Bank, State Owned Bank, And Foreign Owned Bank In Indonesia During The Period 2005-2009 international Journal of Advanced Research in Management and Social Sciences, ISSN: 2278-6236, Impact Factor: 5.313. [www.garph.co.uk/IJARMSS/Oct2015/4.pdf](http://www.garph.co.uk/IJARMSS/Oct2015/4.pdf)
- [8]. Weygandt, J. J, Kieso, D. E., & D, Warfield Terry, 2001, "Intermediate Accounting: Return on assets ratio". (10thed.). Bearcat Company, Vol-1.
- [9]. [www.iracst.org/ijrmt/papers/vol6no52016/1vol6no5.pdf](http://www.iracst.org/ijrmt/papers/vol6no52016/1vol6no5.pdf)
- [10]. Yuliani, 2007, Hubungan Efisiensi Operasional Dengan Kinerja Profitabilitas Pada Sektor Perbankan Yang Go Publik Di Bursa Efek Jakarta Jurnal Manajemen & Bisnis Sriwijaya Vol. 5 No 10 Desember 2007. <https://www.researchgate.net/.../319069533>.

# Individual Assignment Method to Increase Students' Learning Independence in Christian Education Subject of Class VIII-A SMPN-7 Palangka Raya

Sarmauli<sup>1</sup>

<sup>1</sup> Sekolah Tinggi Agama Kristen Negeri (STAKN) Palangka Raya/ Sekolah Tinggi Teologi Cipanas., Alamat Lembaga: Jl. Tampung Penyang - RTA Milono KM 6 Palangka Raya, Jl. Gadok No. 1 Cipanas Kab. Cianjur Jawa Barat. HP. 082156782292

Email: uli\_rahul2002@yahoo.com

**Abstract.** In the process of learning it is required various methods, one of the methods is individual assignment method which is a learning method that combines memorization, reading, repetition, and evaluation of self-ability. This method improves students' self-reliance so that they are independent of others, free, and can learn by themselves or in groups. The problem in this research is about how the stages of student learning independence in Christian Education lessons and whether the use of individual assignment method can improve the learning outcomes of Christian Education in grade VIII-A SMPN-7 Palangka Raya. This type of research uses quantitative research that is providing explanation and analyzing data on the object of the problems studied, among others, teachers and students in the classroom. The results of research indicate that the use of individual assignment method to improve student self-sufficiency is maximal and can be applied in every teaching and learning process of teachers and students in Christian Education. In addition, not only the value of students is increased, but also the attitude and readiness of students in doing tasks and learning.

**Key Words:** *Individual assignment method, learning independence, Christian Education*

## 1. Preliminary

Learning is a complex process in all people and occurs for life from infancy to death. It must be realized that the current changes and progress of the era so rapid both in terms of knowledge and technology. Signs of a person's learning are changes of behavior from not knowing to be knowing more (Mudjiono & Dimiyati, 2009: 55). According to Meier, in learning, learners listen, see, talk, feel, think, write, or do and form something (Sidjabat, 2011: 230). However, the diversity of activities also depends on teachers who manage, facilitate, and lead learning activities.

In formal educational institutions, the subject of Christian Education is one of the areas of study which is relied upon to shape and build the growth of the faith of learners to God. This is in line with the goal of Christian Education that is to educate all church members to be involved in intelligent Bible study as guided by the Holy Spirit, to be taught to take part in worship, equipped to be able to practice their faith in everyday life. In Christian Education itself, every student is directed to know God and accept Him as God and obey Him (Nuhamara, 2007: 28).

The ability of students of SMPN-7 in understanding the learning process especially in Christian Education before recitation method is applied can be seen when the students do the tasks given by the teacher, individually or in group. From the data of 15 students in the class VIII-A, their ability to do the task individually can be seen from the results that are still below the standard of graduation score. Only a few students are able to deliver above-average results according to the material presented and able to do the tasks well while the rest only listen and do not perform the task given by the teacher.

Researchers apply the method of recitation or assignment in each end of the discussion of the material by providing independent tasks or groups, to see how far the ability of students in doing the tasks given. In the interaction activities, teachers act to educate each student and try to understand each of their behavior. The act of educating is focused on the development of students to be

independent. To be able to develop independently, students must learn. In terms of learning, students do not only get it from teachers but from friends and the environment. The word standalone means being independent from others, free, and able to do it on their own.

Self-learning according to Wedemeyer, learners who independently have the freedom to learn without having to attend the teacher-given lessons in class by finding out and studying the subject matter that has been discussed. As an action, then learning is only experienced by the students themselves. Students are the determinants of the occurrence or not of the learning process (Rusman, 2011: 53).

There are many advantages when a student learns independently in addition to studying, outside school they learn together with their peers. Especially in terms of Christian Education, it helps students to understand what is going on in their spiritual life. The fact is very clear when researchers use this method of individual assignment, students are required to be active and responsible, both before the learning process takes place and after the teaching and learning process conducted in the classroom. Assignment stimulates students to be more actively learning both individually and in groups. The execution of such duties can be carried out at home, library, school, and other places (Majid, 2013: 45). Students who study independently will prepare the taught material. After the learning process ends, students will repeat the material that has been previously submitted, either by reading or discussing with friends. Thus students who apply self-study will have better performance when compared with students who do not apply the principles of independent learning.

### ***1.1. Research Issues***

Based on the background and identification of the problem mentioned above, the problem formulation in this research is as follows:

1. What is the stage of student's self-reliance in Christian Education in class VIII-A SMPN-7 Palangka Raya?
2. Will the use of individual assignment methods improve the learning outcomes of Christian Education in Grade VIII-A SMPN-7 Palangka Raya?

### ***1.2. Research purposes***

To give a clear direction on the purpose of this study and based on the formulation of the proposed problem, the general objective is to improve the learning of Christian Education in Junior High Schools, whereas in particular this research is formulated as follows:

1. To describe the learning independence of the students in Christian Education in class VIII-A SMPN-7 Palangka Raya academic year 2017/2018.
2. To explain the effectiveness of the use of the method of assignment of individual class VIII-A SMPN-7 Palangka Raya academic year 2017/2018.

### ***1.3. Benefits of research***

1. For students, to enhance the independence of learning in Christian Education by using the method of individual assignment.
2. For teachers, can use individual assignment method in every learning process of Christian Education.
3. For schools, as feedback to use interesting methods in learning especially the use of individual assignment method in Christian Education.

### ***1.4. Research Hypothesis***

Taking into account the theoretical basis and framework of thinking, the hypothesis of action is formulated as follows: the use of individual assignment method is instrumental in increasing the students' learning independence in the process of learning Christian Education in class VIII-A SMPN-7 Palangka Raya.

## **2. Theoretical Framework**

Individual method of assignment is the way of giving tasks done by learning resources to the learning community whose implementation can be done in the classroom or outside the classroom, and can be done individually or in groups (Holstein, 1986: 29). Recitation method is a teaching method where students are required to make a resume with their own sentence. Meanwhile, according to Supriatna & Nana, the method of assignment is a presentation of learning materials where teachers provide specific tasks so that students do learning activities and provide reports as a result of the tasks they do. This method refers to the application of elements of learning by doing (Holstein, 1986: 35).

From the above two conclusions, it can be concluded that the method of assignment is a presentation of learning materials by teacher giving a specific task to be completed as a form of student learning activities, either individually or in groups and the report as a result of the task without being limited by space.

In this way it is expected that students can learn freely but responsibly and students will experience knowing difficulties and overcome the difficulties, because the students will have the opportunity to compare with the results of other students.

Assignment is very important to be developed among the students, because this method of teaching is very helpful to improve the intellectual ability, attitude, and skills of learners (Rusman, 2010: 210). This method can also generate harmonious relationships between teachers and learners as well as among students with the creation of healthy cooperation and competence in responding and solving problems. However, to effectively implement the method of assignment, the teacher should consider the number of students, student abilities, and the types of tasks assigned. The purpose of the use of the method of assignment is to stimulate the students to actively learn both individually and in groups.

Teachers should also be committed to fully providing assistance to learners. This means that if the teacher decides to give the task, he should provide time to provide help when students need it. Moreover, the students' expectation is that the teacher acts as a companion and servant not as a ruler (Sidjabat, 2011: 259).

According to Holstein (1986: 340) independence is an independent attitude that takes its own initiative without intermediaries and spontaneity where there is freedom for decisions, opinions, accountability without depending on others. The concept of self-reliance learning rests on the principle that the individual who learns will only come to the acquisition of learning outcomes, from skills, the development of reasoning, the formation of attitudes to the self-discovery, when he experiences himself in the process of obtaining learning outcomes.

Brawer means independence is an autonomous feeling. The attitude of independence indicates the consistency of the organization of behavior in a person, so as not to waver, to have self-reliance or self-confidence (Holstein, 1986: 345). A person who has an independent attitude must be able to actualize optimally and not rely on others. Independence in learning according to Wedemeyer, need to be given to learners so that they have the responsibility in organizing and discipline themselves and in developing the ability to learn on their own (Rusman, 2011: 290). From some sense above, it can be concluded that independence (personal maturity) is defined as the state of perfection and the integrity of both elements (mind and logic) in personal unity. In other words, the independent man is a perfect mature person.

The task of the teacher in the process of self-learning is to become a facilitator who is ready to provide assistance to learners when needed. Friends in the independent learning process is very important. When facing difficulties, learners are often more courageous to ask friends than to teachers. In addition, friends can be used as a tool to measure their ability. Self-study does not mean study alone, and in self-study students may ask, discuss, or ask for explanations from others.

According to the Shah, learning can be understood as stages of change in the overall behavior of the relatively settled individual as a result of experience and interaction with the environment that involves the process of cognition (Holstein, 1986: 245). Cronbach argues that learning is an activity exhibited by behavior changes as a result of experience (Holstein, 1986: 300).

According Walgito, the factors that affect independence are: 1). Exogenous factors, exogenous factors are factors that come from outside such as family, school, and society. 2). Endogenous factors; endogenous factors are factors derived from the students themselves, namely physiological factors and psychological factors. Physiological factors include the physical condition of students, healthy or less healthy, while the psychological factors of talent, interest, independent attitude, motivation, intelligence and others (Slemeto, 2010: 239).

Education comes from the basic word educate, which means teaching, leading, or guiding. The basic term of education in Latin is "Educar", which means digging out. In Greek "Pedagogy" which means to lead, guide, and bring students to a better direction. According to Cremin (1990) defines education as a conscious, systematic and continuous effort to inherit, awaken or acquire both knowledge, attitudes, values, skills, as well as the sensitivity or outcome of the effort. Education is one of the basic needs in human life that is about how to live this life to maintain life (Amri & Ahmadi,

2010: 1). Djahiri said education is an organized effort, planned and continuous throughout life to lead human or protégés into adults and civilized.

An educational system requires a conceptual basis, so that the expected goal can be achieved, the foundation of education lies in a biblical concept. The Bible is the written word in a history book. He does not speak directly to mankind in general, but to special people. He does not speak of "eternal principles", but rather gives special commandments from the living God.

Christian Religion teaches a person to know who Jesus Christ is and to have real faith in Jesus Christ. Thus, Christian Education is teaching the knowledge or views, beliefs, dogmas or theology that a person has about Jesus Christ. Christian Education or teaching is usually used for teaching in secondary schools, which are still run by churches or Christian societies (Width, 2006: 203). Christian Education is a very important tool in preparing someone to face the future.

One source of idealism for Christian teachers is the Bible, the written word of God. For Christians, the Bible is authoritative, the source of the truth of faith, morals, and dimensions of life. Smith & Shortt explain that ethics or morals, which relate to the task of education and teacherhood, should be awakened and developed according to the Bible (Sidjabat, 2011: 35-36).

### **3. Research Methods**

#### **3.1. Research Methods**

In this research, the researcher used Classroom Action Research Method (CAR) with the population in the research was class VIII-A in SMPN-7 Palangka Raya which were 15 students. The timing of the study was conducted at the beginning of the new academic year 2017/2018, from July to December 2017. The timing refers to the school's academic calendar, because CAR requires several cycles that require effective teaching-learning in the classroom.

Based on Lewin's opinion, CAR is a 1-3 cycle study that has the following procedure (Kusumah & Dwitagama, 2012: 27):

- a. Planning is the preparation undertaken for the implementation of CAR.
- b. Implementation of action is description of action to be performed, work scenario of corrective action to be performed and procedure of action to be applied.
- c. Observations and observations, namely the procedure of recording data about the process and the product of the implementation of the action designed.

Analysis and reflection, in the form of a description of the procedure of analysis of the results of monitoring and reflection relating to the process and impact of corrective actions taken and the criterias and plans for subsequent action..

#### **3.2. Data Collection Techniques**

In order for the researcher to do data colleciton more easily, some techniques were used as follows:

##### **a. Interview**

Interviewing is one form of data collection techniques that are widely used in quantitative research. Interviews were conducted orally in face-to-face meetings individually. But sometimes interviews were conducted in groups, if indeed the purpose is to collect data from groups such as family, board of trustees, and others. Interviews are widely used in qualitative and quantitative research, so it can be said as the main data collection technique (Kusumah & Dwitagama, 2012: 77).

##### **b. Observation**

Observation is a technique or way of collecting data by way of observing the ongoing activities. This activity is related to the way teachers teach, students learn, and others (Kusumah & Dwitagama, 2012: 71).

##### **c. Library Studies**

Library study is a data collection technique used to increase the insight of the researcher's knowledge by collecting, reading and studying books that support the problem of research such as "how to use individual assignment method for learning independence in Christian Education in class VIII-A SMPN-7 Palangka Raya.

#### **3.3. Data Analysis Techniques**

Data analysis was performed during the study from start to finish. Step data processing is the selection of data by processing accurate data that can answer the focus of research and provide an overview of research results. The data collected is presented in the form of tabulation of data in the form of tables with the aim of facilitating the reading of data. In this activity the researcher

attempts to interpret the findings based on the selected theoretical framework with reference to the approved norms of practice. From the results of interpretation is expected to provide clarity about the implementation of activities in improving the analysis toward the achievement and improvement of learning. In obtaining the test results the researcher uses a system of statistical techniques with presentation, namely by using the formula:

- 1) Average Value

$$X = \frac{\sum(NxS)}{n}$$

Description: X = Average count

n = Many samples

(NxS) = The result of the multiplication of the score by the frequency of the score in question

- 2) Analysis of Observation Result

The result of observation on the activity of teacher and student in learning implementation each cycle then processed by using formula percentage as follows:

$$P = \frac{F}{N} \times 100\%$$

Description: P = Percentage of teacher and student activity

F = Frequency of activity that appears (yes / no)

N = Number of observed aspects

100% = Fixed multiplier

## 4. Research Result

### 4.1. Exposure of Classroom Action Research Cycle (PTK) at SMPN-7 Palangka Raya

Classroom Action Research is implemented in three cycles and in each cycle there are two actions. Action 1 is the presentation of matter on the basic competence of "imitating Christ in the face of suffering", while action 2 is an evaluation of action 1. Classroom action research conducted at SMPN-7 Palangka Raya, through four stages of planning, implementation, observation, and reflection are used in each PTK cycle.

#### a. Planning

This stage is the preparation stage to conduct PTK, research conducted by carrying out the cycle in every meeting. Cycle I, held on Wednesday, July 13, 2017. The researcher prepares the material before the lesson, organized into a lesson plan (RPP) that contains instructional materials emphasizing the use of individual assignment methods. In addition, compiled research instruments in the form of test sheets, and observation sheets. Cycle II, held on Wednesday, July 20, 2017. The researcher prepares the teaching preparation with RPP, test sheets, and observation sheets. Furthermore, cycle III was held on Wednesday, July 27, 2017. With the same preparations as in the first and second cycle of preparation of RPP, test sheets, and observation sheets.

#### b. Implementation

Implementation of cycle I, cycle II and cycle III of the learning process refers to the RPP that has been compiled in which consists of initial activities, core activities, and end activities. In the initial activity performed conditioning students to be ready to learn. In addition, check the attendance of students, convey the purpose of learning, and hold apperception by means of question and answer. In the core activities are presented learning steps that explain learning materials and conduct question and answer, then compiled the conclusions of subject matter. After that, the final activity of the students is given a task with respect to the material already described.

#### c. Observation

In cycle I observation activities carried out during the learning process takes place. And the observation is done to the student that is monitoring the student activity in following the lesson, the student enthusiasm to learn, and doing the task given by the teacher, for cycle I in the evaluation there are still many students who have not reached the standard value determined and the students' desire to do the task is still lacking. Furthermore, on the second cycle still carried out the observation of student activities in the class, enthusiastic students in following the Christian lessons and work tasks given teachers, and in the evaluation seen increase in the value of the given students and the desire of students to do the task has increased. For the third cycle, the observations are done in the classroom by looking at the students' activity to ask, the students' enthusiasm in

Christian learning and the work done and the results obtained during the use of the assignment method applied in each cycle for Christian religious learning have improved both in values and attitudes which is given by students.

*d. Reflection*

Based on the results of observation and evaluation of cycle I, then do the reflection so it is known that student activity and student learning outcomes in the first cycle is not so maximal as most students have not understood the subject matter and not enthusiastic to follow the Christian lesson. So seen in the evaluation results that have been done by students is not maximal and many still get the value below the KKM standards that have been specified. Furthermore, the second cycle of observation and evaluation of students has increased, most students have understood the material and able to give results that exceed the standard value in the set, only a small part that still has not increased the value obtained. After cycle I and cycle II is implemented, then in this third cycle students have begun to memmahahi learning materials and provide results that exceed the limit value in the set. Students are more active in asking questions and performing tasks that teachers provide and working together in group tasks. Increased student activity in learning affects student learning outcomes both in groups and individuals.

**4.2. Value Evaluation Results**

Based on the evaluation of the values obtained in the three classroom action research cycles, there are three evaluation aspects that are assessed as well as the results of each student's scores:

a. Group task

In the execution of this group task students are divided into five groups with each group consisting of three people who are determined by the teacher. The tasks assigned to each group are the same, the purpose of the division of the group is to see the seriousness of the students in working together and the activity of the students to ask questions to the friends of one group or with the group's different friends, as well as the results obtained by each group. Each cycle is done group division, in order to see improvement of result obtained by student and attitude change from each student (Mohammad Adnan Latief , 2009)

b. Individual task

Individual tasks are carried out in each cycle to see students' ability to understand the subject matter the teacher has discussed. Individual assignment is done at the end of each lesson, in the form of repetition in writing, or home duties. With the assignment of individual tasks, then seen increase in the value obtained by each student in each PTK cycle.

c. Student learning activities

Aspects assessed in the learning activities are activities undertaken by teachers to students by observing the learning process that takes place in the classroom. This assessment is performed on each PTK cycle, by looking at changes in the results obtained from the first, second, and third cycles. The purpose of this learning activity, so students can be more active and enthusiastic to learn as well as teachers can know the teaching methods that must be prepared to make students actively involved in the learning process, especially subjects of Christian religion.

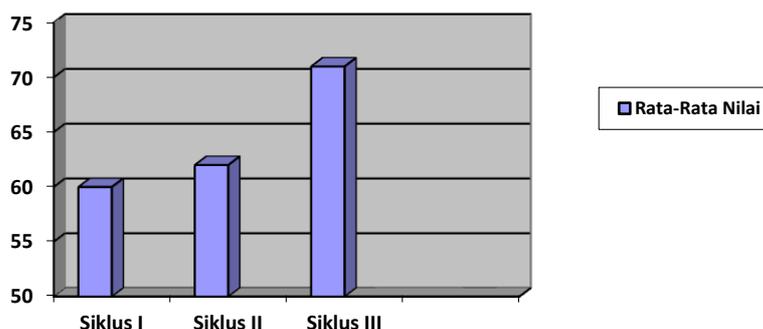
The results of group evaluation of cycles I, II, and III can be seen in the table below.

**Table 1.** Results of cycle groups I, II, III

No	Group name	Score		
		Cycle I	Cycle II	Cycle III
1	Group A (Daniel, Dhesy, Candra)	70	75	95
2	Group B (Ferdí, Karina, Leli)	65	100	100
3	Group C (Natalia, Jefri, Ryo)	65	75	85
4	Group D (Saveni, Tius, Wantie)	75	80	100
5	Group E (Yuliasi, Ganchahita, Yeskiyel)	60	90	100

<i>Amount</i>	<b>335</b>	<b>420</b>	<b>480</b>
<i>Average</i>	<b>60</b>	<b>62</b>	<b>71</b>

Based on the above data it can be seen that the lowest value of cycle I is 60 and the highest is 75, while for cycle II the lowest value is 75 and the highest is 90, and cycle III there is no low value but the value obtained by students is 85-100. While the average value obtained each cycle that is cycle I is 60, the second cycle is 62, and the third cycle is 71. For more details can be seen in the graph of the average group value below.



**Figure 1.** The average graph of group values per cycle

Each PTK cycle is evaluated according to PAK indicators. The evaluation is carried out individually with the number of questions of 5 items to be completed within 15 minutes. The form of the problem used is a description. Individual test results for each subsequent cycle are presented in Table 2 below.

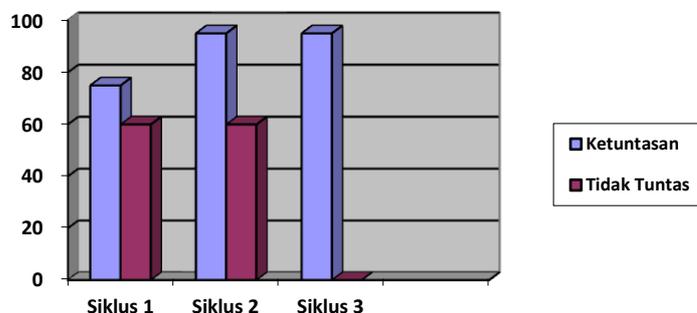
**Table 2.** Results of individual cycles I, II, III

No	Name of Student	Score			Exhaustiveness		
		Cyc. I	Cyc. II	Sik. III	Cyc. I	Cyc. II	Cyc. III
1	Daniel	60	60	95	TT	TT	T
2	Dhesy R.	75	80	95	T	T	T
3	Candra W.	60	60	95	TT	TT	T
4	Ferdi G.	60	65	100	TT	T	T
5	Karina B.	75	95	100	T	T	T
6	Leli M.	75	70	100	T	T	T
7	Natalia D.	75	80	95	T	T	T
8	Jefri	70	70	95	T	T	T
9	Ryo T.E	60	60	95	TT	TT	T
10	Saveni	70	80	100	T	T	T
11	Tius	60	80	100	TT	T	T
12	Wantie K.	60	60	100	TT	TT	T
13	Yuliasi R.	60	95	100	TT	T	T
14	Ganca H.	70	90	95	T	T	T
15	Yeskiyel A.B	60	70	95	TT	T	T
<b>Amount h</b>		<b>990</b>	<b>1115</b>	<b>1460</b>	<b>T= 7</b> <b>TT= 8</b>	<b>T=11TT= 4</b>	<b>T=15</b> <b>TT=0</b>
<b>Average</b>		<b>66</b>	<b>74,3</b>	<b>97,3</b>			
<b>Persentase</b>					<b>T=46%</b> <b>TT=53%</b>	<b>T=73%TT= 26%</b>	<b>T=100%</b> <b>TT=0%</b>

Description: Cyc. I = First cycle, Cyc. II = The second cycle, Cyc. III = Third cycle, TT = Unfinished, T = Completed

Based on the results of the learning evaluation of each cycle, the first cycle results obtained the highest is 75 and the lowest is 60 with a complete 7 people and not complete 8 people. Furthermore, in the second cycle of learning evaluation conducted with the results of the highest score of 95 and the lowest 60 with a mastery of students 11 people and for not complete 4 people. To further reinforce the evaluation carried out in cycle III with the highest value between 95-100 and the lowest value is not in the third cycle, with a complete 15 people.

Learning completeness in the first cycle only reached 46%, but in the second cycle increased to 73% and in the third cycle to 100%. Meanwhile, the graph of non-completeness decreased in number ie in cycle I by 53%, then in cycle II to 26% and in cycle III to 0%. This means that cycle II is better than cycle I and cycle III is better than cycle II so it can be said that there is an increase in students' learning independence on understanding PAK materials using assignment method. The results of complete and incomplete each cycle can be seen in the graph below with a score of 90-100 (A), 65-85 (B), and incomplete 0-60 (C).



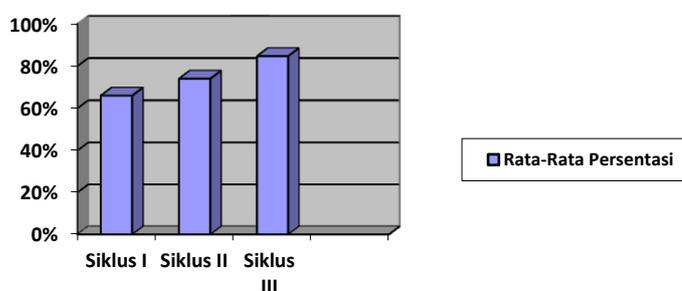
**Figure 2.** Graphs of completeness and incomplete individual values for each cycle

The result of observation on student activity of each subsequent cycle can be seen in table below.

**Table 3.** Student learning activities cycle I, II, III

No	Aspects are observed in learning	Percentage		
		Cyc.I	Cyc.II	Cyc.III
1	Responding to the goals of the teacher	60 %	70 %	80 %
2	Enthusiastic and ready to learn PAK about "imitating Christ in the face of suffering"	60 %	70 %	80 %
3	Pay attention to the illustrations of the teacher as an apperception	70 %	80 %	90 %
4	Take note of the subject matter provided	80 %	80 %	90 %
5	Understand the tasks that must be done in learning	60 %	70 %	80 %
6	Completed the questions on the LKS	70 %	80 %	80 %
7	Discuss the group in an orderly manner to do the task	50 %	70 %	90 %
8	Responding to the award given by the teacher	60 %	70 %	90 %
9	Asking question	60 %	60 %	80 %
10	Have the motivation to do the task	50 %	70 %	80 %
11	Answer the questions asked by the teacher	60 %	70 %	80 %
12	Noting the conclusions of the subject matter	70 %	70 %	80 %
13	Take notes on the tasks to be done at home	80 %	80 %	90 %
14	Know the shortcomings of the work during the lesson	60 %	70 %	80 %
15	Work on the final evaluation	100 %	100 %	100 %
	<b>Average percentage</b>	<b>66 %</b>	<b>74 %</b>	<b>84,67 %</b>

Based on the above data, student learning activity in the first cycle only reached an average of 66%. This means that there are still low student activity. Then again the observation on cycle II, with the results obtained percentage increase in student activity is 74%. To further maximize the observation is still done on the third cycle with the percentage increase in student learning activities that is 84.67%. Cycle III is better than cycle II, and cycle I. To be more easily understood it can be seen in the graph of the average percentage below.



**Figure 3.** Graph of average percentage of learning activities per cycle

After seeing the results of the students' scores from each cycle gradually performed by the researchers. With the result that in cycle I has not been maximally given by each student both from group and individual task, then experience improvement in cycle II and III. So researchers also see changes in the attitude given by each student who in cycle I did not enthusiastic to follow the lessons and do the task, but in the second and third cycle began to change attitude. Can be seen in table 3, to see each cycle has increased from the students as a whole.

#### **4.3. Level of Independence of Student Learning in Christian Education Lesson**

From the results of observations of researchers during the SMPN-7 Palangka Raya about the level of student learning independence in the subjects of Christianity is very alarming. Because many students who do not do the task did not even go to class when religious subjects took place. In order for the learning process to run well, the researchers apply methods of recitation or assignment to see the independence of student learning in Christian Education. Assignment methods help to improve students' intellectual, attitudes, and skills. By using recitation method of creating harmony and cooperation with teachers, students, and among other students (Slemeto, 2010: 38).

Therefore, researchers conduct classroom action research to see the level of student learning independence in doing the task given by the teacher. By using four stages in PTK according to Kusumah and Dwitagama (2012: 20) that is:

- a. Planning is a researcher planning each activity to be carried out in classroom action research and preparing things to be used in the learning process such as RPP, sheets of observation of teachers and students, conducted simultaneously by peers.
- b. Implementation is an activity or action undertaken by researchers in classroom action research, especially in terms of teaching and learning by using the method of individual assignment.
- c. Observation is an activity carried out simultaneously with the implementation, the researcher who acts as a teacher. In addition to providing action researchers also make observations of students. Meanwhile, peers make observations of the activities undertaken by teachers.
- d. Reflection is an activity to recall the results of the learning process that has been implemented and then make improvements in the next cycle.

According to Moore the level of learning independence consists of determining the learning objectives to be achieved by students and teachers to help direct the learning process of students, learning materials or media to be used in student learning, and the results of student learning evaluations obtained by effort and hard work during self- (Rusman, 2010: 354). Not that during the independent learning process students are alienated or kept away from friends and teachers, but the most important in the process of independent learning there is an increase in the ability and skills of students in the learning process without the help of others, so in the end students are not dependent on teachers, mentors, or friends in learning.

When assigned group and individual tasks to each student can be done well. If faced with difficulty in work tasks students can ask friends or teachers directly. Friends can be used as a tool to measure students' abilities, and the teacher is tasked with being a facilitator to provide assistance if students do not understand the material that has been discussed in each meeting in accordance with the cycle. In the end can be seen the value obtained from each student is better than before and exceeds the predetermined value standard. Therefore, the level of learning independence that is given to students can be viewed from the results obtained each cycle.

The independence of learning also speaks of the change in attitude that the student gives from within himself which is the result of self-experience and practice without being dependent on others. In the behavior of freedom, assessment and responsible for the task that has been given to him (Sanjaya, 2011: 228). Attitudes shown by each student in the implementation of learning in the first cycle of PTK less maximal, most students do not pay attention to the process of learning and not doing the task. Furthermore, the learning is done in the second cycle, the students have undergone a change of attitude and doing the task and actively involved in the group discussion. In the third stage of the learning process has improved both the results and attitudes that students provide by actively involved in learning and doing the task of the teacher (Tatang Sunendar: 2017)

#### ***4.4. Use of Individual Assignment Methods to Improve Christian Religious Education Learning Outcomes***

In the learning process, students should be encouraged to perform activities that can foster the process of creative activities. Therefore, the method of assignment can be used to support learning especially the subjects of Christian religion. The use of individual assignment methods has the goal of growing an explorative learning process, encouraging students to behave reactions, familiarize students with comprehensive thinking, and foster student self-reliance in learning (Slemeto, 2010: 300). And should be considered in the use of recitation method according to Rusman (2010: 359) that the task should be addressed to students either individual or group tasks, the task can be completed or done in the classroom and outside the classroom, and the task is the final step to see the ability of each students in the material understanding already discussed by the teacher.

By giving this task is expected so that students can learn freely but responsible and know the difficulties and can overcome difficulties experienced, because with the assignment of students can have the opportunity to compare the results obtained with other students yag. The tasks assigned by the teacher should be clear, in accordance with the students 'abilities, and make the students think more critical to train students' skills in understanding the subject matter.

At the time of conducting classroom action research (PTK) in three cycles conducted by the researchers, initially not very satisfactory both from the results of groups and individuals are still many students whose average score under the KKM in standarkan. Therefore, researchers apply individual assignment method for each cycle, to see how far the students understanding in the subject matter. Assignment is urgently needed to be developed at the end of each material discussion, in order to help improve students' thinking skills, attitude changes, and skills.

The first cycle is applied in the classroom with each end of the student lesson given the appropriate tasks of the material that has been discussed, there are still many students who do not understand and do not even do the task with a variety of reasons that one of them left at home. Researchers are trying to make more interesting Christian lessons while still giving the task at the end of the lesson for the second cycle. After the value and in check the results have been given an increase, students have started to understand the subject matter and willing to do every task that is given the teacher. Then in the third cycle, the results given by the students are more than the standard KKM scores that have been set both from the group task and individual tasks. Increased results that students give when individual assignment methods are applied in each lesson, especially Christian subjects, are clearly visible with the outcomes and students are actively working on the tasks of both groups and individuals.

#### ***5. Conclusion***

Based on the findings, conclusions were obtained as follows:

1. The use of individual assignment methods is done by the teacher giving three cycles in the form of group tasks and individual tasks to see the improvement of students' learning independence in learning Christian Religious Education and the final results obtained have exceeded the

predetermined standard values, it can be said that the method of individual assignment is successful in apply in class.

2. The use of individual assignment methods to increase Christian Religious Education learning independence is seen in the percentage of student activities during each cycle. Cycle I learning activities 66%, cycle II is 74%, and the third cycle is 84.67%.
3. The use of individual assignment methods in Christian Religious Education learning can improve student learning outcomes, seen in the average scores achieved by students for each cycle. In the first cycle is 66, the second cycle is 74.3, and the third cycle is 97.3.

#### 6. Suggestions

Based on the conclusions obtained several suggestions put forward as follows:

1. Teachers can apply individual assignment methods in Christian Religious Education learning, with different materials. In addition, prior to the implementation of the teacher's learning should explain the working steps of the use of individual assignment methods for the implementation of learning to run smoothly and achieve optimal results.
2. Students can be more focused on learning because it is helped by the method of individual assignment, and have the spirit to do every task that is given by the teacher.
3. The results of this study can be used as input in improving learning Christian Religious Education, as well as providing input for teachers have a more interesting method for learners interested in learning.

#### References

##### Books

- [1]. Amri, Sofan., Ahmadi, Khoiru, Iif. 2010. *Konstruksi Pengembangan Pembelajaran*. Jakarta: Prestasi Pustaka
- [2]. Arikunto, Suharsimi., Suhardjono., Supardi. 2012. *Penelitian Tindakan Kelas*. Jakarta: PT Bumi Aksara
- [3]. Cully, V.Iris.2011. *Dinamika Pendidikan Kristen*. Jakarta: BPK Gunung Mulia
- [4]. Dwitagama, Dedi., Kusumah, Wijaya. 2010. *Mengenal Penelitian Tindakan Kelas*. Jakarta: Indeks
- [5]. Enklaar., Homrighausen. 2009. *Pendidikan Agama Kristen*. Jakarta: BPK Gunung Mulia
- [6]. Holstein, Herman. 1986. *Murid Belajar Mandiri*. Bandung: PT Remaja Rosdakarya
- [7]. Kunandar. 2012. *Langkah Mudah Penelitian Tindakan Kelas*. Jakarta: PT Rajagrafindo Persada
- [8]. Lebar, Lois E. 2006. *Education That Is Christian (Proses Belajar Mengajar Kristiani & Kurikulum Yang Alkitabiah)*. Surabaya: Gandum Mas
- [9]. Mulyasa. 2011. *Praktik Penelitian Tindakan Kelas*. Bandung: PT Remaja Rosdakarya
- [10]. Mulyasa. 2009. *Penelitian Tindakan Sekolah*. Bandung: PT Remaja Rosdakarya
- [11]. Majid, Abdul. 2013. *Strategi Pembelajaran*. Bandung: PT Remaja Rosdakarya
- [12]. Mudjiono., Dimiyati. 2009. *Belajar dan Pembelajaran*. Jakarta: Rineka Cipta
- [13]. Nuhamara, Daniel. 2007. *Pembimbing PAK*. Bandung: Jurnal Info Media
- [14]. Nainggolan, M. John. 2007. *Menjadi Guru Pendidikan Agama Kristen*. Bandung: Generasi Info Media
- [15]. Rusman. 2011. *Model-Model Pembelajaran Mengembangkan Profesional Guru*. Jakarta: Grafindo Persada
- [16]. Slemeto. 2010. *Belajar dan Faktor-Faktor Yang Mempengaruhi*. Jakarta: Rineka Cipta
- [17]. Sidjabat, B.S. 2011. *Mengajar Secara Profesional*. Bandung: Yayasan Kalam Hidup
- [18]. Sanjaya, Wina. 2011. *Kurikulum dan Pembelajaran*. Jakarta: Kencana Prenada Media Group

##### Internet

- [1]. Adnan Latief . Mohammad. *Penelitian Tindakan Kelas*, <http://karya-ilmiah.um.ac.id/index.php/karya-dosen-fs/article/view/2215>, downloaded on September 12, 2017
- [2]. Sunendar. Tatang. *Penelitian Tindakan Kelas*, <https://akhmadsudrajat.wordpress.com/2008/03/21/penelitian-tindakan-kelas-part-ii/>, downloaded on July 13, 2017.

- [3]. \_\_\_\_\_, *Pengertian PTK Penelitian Tindakan Kelas Manfaat Tujuan Definisi Menurut Para Ahli*
- [4]. <http://www.landasanteori.com/2017/04/pengertian-ptk-penelitian-tindakan.html> downloaded on August 13, 2017.

# Teacher Communication in Caring Children Age 3-4 Years in Paud in Mataram City

**Siti Zaenab**

STAHN Gde Pudja Mataram Lombok NTB

Email : sita.zaenab99@gmail.com

**Abstract.** The purpose of this study was to determine the communication of teachers in parenting 3-4 years old children in early childhood Shanti Kumara in Cakranegara. Then how the most dominant form of communication implemented by teachers in communicating with children aged 3-4 years ?. This research is useful to provide input and insight for all young teachers to be able to communicate well with early childhood. The research type is descriptive qualitative with observation method, interview, and documentation. Data analysis techniques use three ways: data reduction, data presentation and data verification. To check the validity of the researcher's data, use credibility, transferability, dependency and confirmation. The results showed that the role of good communication in the care of children aged 3-4 years by using verbal communication so that the teacher communication patterns to be smooth. While the communication patterns of teachers in communicating with early childhood is the ability of teachers to speak more progressive and better so that teacher communication will be productive and can be applied by children aged 3-4 years.

**Keywords :** *communicative, teacher, early childhood education*

## 1. Introduction

In general, parents would want their baby to grow into a healthy child, intelligent, creative, independent, faithful and cautious to God Almighty. Parents must be aware that in such a way our children miss the togetherness and communication with their parents who have been lost in need, the Son is a gift. Any religious view of the world, a child is a heir as well as a savior for parents and ancestors. Once the importance of the role and position of a child, then each family would expect the birth of a child who suputra, a child with character and good character, devoted to parents and ancestors and obedient to the teachings of religion nation and state. Character and character of a child can actually be formed through education. Like a clean white paper, then that is the parable of a newborn child; color, style and character depending on educational scratches given, in this case education by parents and the environment. Therefore, we as parents should use the golden age of children to provide a good character education for children. So that children can achieve success and success in life in the future. As parents sometimes do not realize, mother's attitude to the child will actually drop the child. For example, by hitting and putting pressure that ultimately makes the child behave negatively, inferior, inferior, fearful, and dare not take risks, which eventually the characters will be brought to adult.

Some of the key considerations that should be followed by the government of West Nusa Tenggara, in order to achieve the beautiful dreams of West Nusa Tenggara are: (1) to prepare human resources quality, (2) to accelerate economic turnover and low social cost due to high work productivity and 3) improving equity in the life of the community, (4) helping the elderly and children of early childhood with low standard of living.

## 2. Methods

This research uses qualitative research with phenomenological approach. The phenomenological approach is chosen because the object of this research is the process or activity of the teacher or the act of communicating to someone else, that is about the teacher communication in the early childhood

education 4-5 years, the research object is in natural condition, and the data expressed is not in the form numbers, but in the form of words, sentences, paragraphs and documents. Based on these characteristics, this research is more appropriate using phenomenology approach as proposed by Bogdan and Biklen (1998). In order to obtain complete and detailed data about the subject under study, related to the focus and objectives of the research, exploration, either thoroughly or in a focused manner. Therefore the most suitable approach used in this study is the phenomenology approach, which means, an oriented approach to the natural and basic phenomena.

Interview method is done in an informal situation. The phenomenon that occurs is the original (natural), which acts as the main instrument (key instrument) is the researcher himself. Researchers also use the tools, namely stationery and MP4 (voice recorder), then the data collection techniques used in this study is through (1) indepth interviews (2) participant observation, and (3) study documentation. Three techniques can be said are three basic techniques in qualitative research agreed by most authors are: 1) data reduction, 2) data presentation, and 3) withdrawal of conclusions or verification.

To measure the validity of this scientific paper used 4 validity measurement tools and beliefs about the role of teachers in building communication in children aged 4-5 years used criteria as recommended Lincoln & Guba in Zaenab (2015), namely; (1) credibility, (2) transferability, (3) dependability, and (4) confirmability. However, in this study only used three, of the four criteria are: (1) credibility, (2) dependability, and (3) confirmability.

### **3. Discussion and Result**

#### ***3.1. Teacher's role in parenting style communicates in early childhood***

The results of the discussion and findings in the field provide fresh air that teachers in the city of Mataram not just people who menstransfer science to children, but more than anything. This is the role of teachers and people who play a major contribution and concept in science and even the formation of attitudes and behavior from an early age. Teachers at the Early Childhood Education level directly develop personal behavioral behaviors as well as how to communicate well to children, implement and develop them so that they become qualified and better children.

Things that need to be developed by the teacher in the pattern of communicating with early age children in the city of Mataram is the need to master communication development strategies, good care patterns and growth psychology in early childhood so that the development of children will be good and implemented according to the goals of self-development of children. Early Childhood Education needs to understand the characteristics of children according to age, culture, and environment so that what is delivered by the teacher is not too far away with the daily life of the child. It is also about the behavior that we will plant in the child can be observed and imitated according to the nature of talent and imitator or imitation when it is accompanied by a good and correct communication pattern (Zaenab 2012: 4-7).

In summary, effective communication is the mutual understanding of what is meant by the messenger and who receives the message. Oral communication as a part of speaking focuses on pronunciation. Basically, what is communicated in verbal form must be accurately communicated. Once the teacher's mother is schooled in accordance with several aspects that need to be considered by all members who communicate orally in communication.

Each child has a different ability to communicate and this is one of the most effective communication tools. Since children are babies often using body language can meet their needs. But it is less understood by adults what is meant by children. Therefore, both infants and young children always try to make others understand the meaning. This encourages people to learn to speak and to prove that speaking is the most effective means of communication compared to other forms of communication that children use before they are good at speaking. Broadly speaking there are two things that speak, namely oral language skills and writing skills. And in general language skills are divided into four, namely listening, talking, reading, writing. In real terms, children need to learn language skills especially oral language.

In general, the results of the findings are the stages in children communicating age between 3-4 years, namely: 1) Acquisition (acquisition), is the first language learned by children, commonly called mother tongue (imitate and listen) and is spoken language. Starting from the age of 0-6 years, the language being studied or used is a noun, verb, adjective, and other words. 2) Learning, children begin to learn oral and written languages and start after the child graduates from early childhood. In non-formal education institutions children learn to write or read it just as a habit to train children's motoric.

Some of the supporting theories used in this study are the nature of language development in communicating, among others, namely: a) language toori, put forward by Sufism (1996: 467), considers that language as a covenant among members of society because the language is a symbol system. The flow of Soijin (1989: 231), regards language as a natural ability. b) Interaction theory proposed by Plato and Aristotle (1988: 89), reveals the language as an interaction between the two statements. So, besides being natural, the language is also influenced by the environment in which the child is located. Buhler, argues that language as a means of communication is inseparable from the social context. Chomsky, the language is related to the cognitive person.

According to Badudu, language as a means of interconnection / communication between members of society consisting of individuals who express the mind (cognitive), feelings (emotions), and desire (conation). Meanwhile, according to Broomley, language as a regular symbol system in the form of visual (writing) and verbal (oral) to transfer ideas meupun information. Individuals can manipulate the symbols according to his way of thinking. Language is a means of communicating to move a meaning through sounds / signs, body language / gestures, and symbols.

Experts suggest there are characteristics of language, namely: 1) Systematic, language has rules, is regular and has patterns that are relatively consistent. 2) Arbitrair (disorganized), the language consists of an arbitrary relationship between the various sounds and clear visuals, objects, and ideas. 3) Flexible, language can change according to the times. Diverse, in terms of language pronunciation has many variations, dialects or ways. Complex, thinking and reasoning are influenced by the ability to use language that explains concepts, ideas and relationships that can be manipulated when thinking and reasoning. According to Broomley, there are 5 functions discussed are: 1) Language explains the desires and needs of individuals. 2) Can change and control the behavior. 3) Language helps cognitive development. 4) Language helps to strengthen interaction with others. 5) Language expresses the uniqueness of the individual.

Broadly speaking language development is divided into two periods, namely Prelinguistik period (0-1 years) and Linguistics (1-5 years). It is from this linguistic period that there arises the desire of the child to utter the first words which is the most amazing time for the parents. The linguistic period is divided into three major phases, namely: (1) Phase one word or Holofrase. In this phase the child uses one word to express a complex thought, whether in the form of desire, feeling or findings without a clear distinction. In general the first word spoken by a child is a noun, after some time followed by a verb and then another word. (2) Phases more than one word. The two-word phase appears in children aged around 18 months. In this phase the child can already make simple sentences consisting of two words. After two words, then comes a sentence with three words, then four words and so on. The child can tell the story with its own simple sentences.

According to Vygostky (2002:46) there are 3 stages of speech development in children who are closely related to the development of thinking children are: 1) External stage. It happens when the child speaks where the source comes from outside the child who provides direction, information and performs a responsibility with the child. 2) egocentric stage. That is where the child speaks according to his or her way of thinking and from adult speech patterns.

Internal Stage. That is where in the process of thinking the child already has a comprehension of the ability to speak fully. General stages of language development of a child, namely: (1) Reflexive Vocalization. At the age of 0-3 weeks the baby will issue a crying sound that is still a reflex. (2) Babling. At the age of more than 3 weeks, when the baby is hungry or uncomfortable he will issue a crying sound. In contrast to the previous, the crying has been distinguished according to the wishes or feelings of the baby. Lalling. At the age of 3 weeks to 2 months began to hear voices but not yet clear.

The baby begins to hear at the age of 2 s / d 6 months so that he can start to pronounce words with repeated syllables. (3) Echolalia. At this stage, when the baby turns 10 months of age, he begins to imitate the sounds he hears from his surroundings, and he will also use facial expressions or hand gestures when he wants to ask for something. (4) True Speech. Babies begin to speak properly. At that time he was about 18 months or so-called toddlers. However, the pronunciation is not as perfect as adults.

Some theories of language development include: (1) Nativism / Nativist Theory (Noam Chomsky), in which the subject is innate and natural, insists on the role of biological evolution in shaping individuals into linguistic beings. (2) Behavioristic Theory (Skinner and Bandura), where the child is born without any ability (tabularasa). Children must learn the language through environmental conditioning, imitation process and reinforcement (reinforcement). (3) Cognitive Theory (Piaget and Vygotsky), where language has little effect on the development of cognition. (4) The Pragmatic Theory (Halliday), where tuuan children learn language is to socialize and direct the behavior of others to fit keingiannya. (5) Interactionist theory, where language is a combination of genetic and environmental factors.

Since childbirth has gained how to speak. The child starts to learn the language begins by mumbling, Dyson believes speech development contributes greatly to the development of child writing. The study of the development of speech in children is related to the difference in the speed of speaking, both the quality and the quantity of children in producing language. The role of teachers in the pattern of early childhood care in the process of instilling the values communicating children can be described.

### ***3.2. Teachers as role models in Communication***

The Early Childhood Teacher is one of the people closest to the child's life, so every attitude seen from the educator will be imitated by the child. The child has not been able to choose which behavior should be imitated and which is not. Any behavior observed by a child, he or she deems to be an imitative behavior. Teachers need to understand how to behave and communicate in front of children so that the pattern of communication exemplified by the child is the pattern of care that is expected to be embedded in the child only. The child is most likely to learn something from observing and imitating, especially in communicating. The easiest way to communicate is through habituating the expected behavior in every child's activity. The success of habituation will determine the success of children who influence the pattern of communicating later.

### ***3.3. Teachers in early childhood as a language development planner***

All child language development programs need to be well designed by the teacher to be clear about the goals and to use the right way. The design is integrated with children's daily activities at school and at home. The materials that need to be designed include caring and empathy, cooperation, courage, help, honesty and integrity, self-reliance and self-confidence, patience, pride, resourcefulness, respect, responsibility and tolerance. All activities in this communication can be designed in a child's activity accept the spoken language. Early childhood teachers as consultants and mediators. Early Childhood Education, especially teachers, is the most correct person in the eyes of children so that made a place to complain of all the difficulties that happened. Teachers are the safest place for sharing for children. Therefore teachers need to have the ability to solve child problems when they complain. If there is a conflict between fellow children, teachers need to find out the cause of the conflict before completing it. Here will be embedded honest, courageous, and responsible attitude in the pattern of daily communication.

The discussion and results that will be discussed in this research is how the role of teachers who have double wealth in school in building the character of early childhood. In this case is how the role of teachers City in Mataram in building the communication of early childhood in the city of Mataram. As a step forward in accelerating the development of early human resources better into the year 2045.

In line with this, the notion of early childhood education is a group of children who are in a unique process of growth and development, in the sense that children have a pattern of growth and development (fine motor coordination and rough), intelligence (thinking power, creativity, emotional

intelligence and spiritual intelligence), emotional social (attitudes and behaviors and religion), language and communication that are specific to the level of growth and development of children. Given the importance of early childhood education, it is a unique creature that has different characteristics and needs, so the intervention provided by the adult must also differ according to the rate and speed of learning of children along with the period of growth and development.

Early childhood education is the level of education before the level of basic education which is a coaching efforts aimed at children from birth up to the age of six years conducted through the provision of educational stimuli to assist growth and physical and spiritual development so that children have readiness in entering further education , organized on formal, informal, and informal channels.

The extension of early childhood according to Pasal, 28 of the National Education System UU No. 20. 2003 paragraph 1 is 0-6 years. Meanwhile, according to the study of science clusters of early childhood and its implementation in some countries, early childhood since the age of 0-8 years. Scope of Early Childhood Education; a) infant (0-1 years), b) toddler (2-3 years), c) preschool and kindergarten children (3-6 years), d) early primary school (6-8 years)

Many theories suggest that early childhood education is a "golden age period" period. According to UNESCO, 2005: 15 "First Education of Early Childhood is the development of the child as a whole or whole. Child preparation for formal schooling is seen as an integral part of overall development, not as an isolated destination. Both government policies on Early Childhood Education should side with the poor, giving inequality a priority. Third Early Childhood Education as a means of laying the foundation for lifelong learning, and as a transition from early childhood service house where the Early Childhood Education service to school must be smooth ".

#### ***3.4. The Importance of Early Childhood Teachers in Building Communication in 3-4 years old children***

The world has acknowledged that the role of teachers conducted at an early age plays a very important role. The development and improvement of one's thinking power at an early age will have an impact on adulthood. That is why, early education needs to get serious attention for all parties in order to improve the quality of our nation's children later. In the framework of providing guidance on the form of early childhood education formal and non-formal channels that provide education for children aged four years to enter basic education, organized in an effort to help lay the foundation of development of all aspects of growth and development for children aged before entering primary school, the demand to improve the quality of superior human resources. In these conditions it is certainly difficult for students to be able to compete with other students. Human resource development implemented in other provinces in general and in particular NTB begins with early childhood development that includes care, care and education as a whole and is implemented in an integrated manner. Understanding the importance of early child development as a basic step for the development of healthy human resources, smart, and berkeulitas.

In NTB PAUD implementation still seems exclusive and reaching only a small part of society. Although various care and education programs for early childhood (0-6 years) have been implemented in NTB for a long time, but until 2017, children aged 3-4 years who have received low education and care services are still low.

#### ***3.5. Parenting Parenting Patterns in communicating with 3-4 year olds***

From the results of data analysis and findings get some things about the role of parents is the embodiment of love to children who are ready or not to become parents. Having a child, ready or not, changes many things in life, and ultimately wants or not the child is required to be ready to understand the meaning of modesty that should be able to prepare the children in order to live their future well. Knowing, knowing, understanding the world of children is not something easy. A colorful world, a world of everything beautiful, easy, cheerful, loving, full of wonder and full of surprises. The world that every child should have but in its ownership depends a lot on the role of parents (Montessori, M. 2008).

Why do parents need to improve the intellect of children to prepare them for school? The answer is, the school is currently asking for a high enough requirement of a student's quality. There are still students who enter the elementary school has been introduced with various kinds of lessons and science from an early age. Children have to have high creativity since childhood. Therefore, children who have high intellectuality will be more receptive to all that is taught. They will have high confidence, more adaptability, more readily accept new things, or a child's intellect can be developed long before they enter school. Such conditions place parents as the first and foremost teachers for their children in informal education programs that occur in the family environment. In fact, educating children is more difficult than childbearing. Therefore, as prospective parents or who have become parents, should be equipped with adequate knowledge about children's education. At the present time there have been many books published about children's education. It's just that, maybe the prospective parents and parents have not had time to read it (Nash, M. J., 1997).

The result of this research is teacher communication in early childhood is very important, especially at PAUD level, teacher not only as pentransfer concept of science only, but teacher is more on guidance for the formation of behavior, character to character. The development of moral values as the basis for building the character of a child must take into account the nature of the child. The child communicates most easily at the age of 3-4 years and learns something when seeing and doing on their own. This is because children are still learning to use their sensory organs, rather than the feelings commonly used by adults. From the above findings teachers should get concrete examples of communication in the form of concepts of speech, attitude, and behavior. These three elements can not be separated and taught separately. Each gives the concept of communicating, the teacher also shows attitude and behave according to the concept of communication taught.

Giving the concept of communicating as part of language practice in early childhood is mostly done through the activities of story telling, field trips, singing, and poetry. Through stories, educators can develop cultural values, social, religious, work ethic, and other moral concepts to become attitudes that can be realized in the child's behavior. Field trips are an activity to show the real world in order for a child to acquire a form of moral concepts that he gets. Singing and poetry or poetry are two things that many children live.

#### **4. Closing**

The results above can be concluded that the pattern of teacher communication in raising children ages 3-4 in the development of education in early childhood in the city of Mataram. Teachers in making the concept of communicating in early childhood that is domiciled as a catalyst or role model, inspirator, motivator, dynamicator, and evaluator. Teachers are said to be the catalysts, because the teacher as the exemplary for the child. Teachers are also an absolute factor in the development of effective communication, because the position of the teacher as a figure or idol who digugu and imitated by early childhood. Teacher communication as an inspirator means an educator should be able to inspire the learner learners to advance develop their potential. Teachers as motivators, meaning that every teacher should be able to generate spirit, work ethic and the potential of extraordinary in the learners themselves.

The teacher is said to be a dynamicator, meaning every teacher has the ability to encourage early childhood toward the achievement of goals with full of wisdom, patience, nimble, intelligent and uphold spirituality. While the teacher pattern communicates as an evaluator, it means that every teacher is required to be able to and always evaluate the attitude or self-behavior, and the learning method used in building verbal communication in early child, so can know the level of effectiveness, efficiency, and productivity of the program. Building a pattern of communication by teachers in early childhood is the identity of communication, therefore need to be planted as early as possible to take root in one's life as a citizen. Provide identity as a communication pattern in children that can be seen by naked eye.

## Reference

- [1]. Bogdan, R.C & Biklen, S.K.B. 1998. *Cualitative Research for Education to Theory and Methods.*, inc. Boston.
- [2]. Berk, Laura. 2008. *Child Development.* USA : Pearson Education
- [3]. Denzin & Lincoln, 1994. *Handbook of Qualitative Research.* Londong, UK: Sage.
- [4]. Doyin, Mukh.dkk.2002. Bahasa Indonesia dalam penulisan karya ilmiah. Semarang: Nusa Budaya.
- [5]. Hughes, Fergus P. 1999. *Children, Play & Development.* Allyn & Bacon, BostonHurlock,
- [6]. Montessori, M. 2008. *ABSORBENT MIND: Pikiran yang mudah Menyerap.* Yogyakarta: Pustaka Pelajar.
- [7]. Nash, M. J., 1997. *Otak Kanak-kanak,* Jakarta: Tira Pustaka
- [8]. Nash TEAM. 2007. *Modul Perkembangan Anak untuk PPAUD.* Jakarta : Dir. PAUD, Kemendiknas.
- [9]. Santoso. 2004. Psikologi Perkembangan Anak dan Remaja. Bandung.
- [10]. Silvia, Schiller, Pam & Tamera Bryant. 2002. *18 Moral Dasar Bagi Anak.* Jakarta : PT Elex Media Komputindo
- [11]. Suparno, P. 2001 *Teori Intelegensi Ganda dan Aplikasi Di Sekolah.* Kanisius Yogyakarta.
- [12]. Sujiono, Y. N. 2009. *Konsep Dasar Pendidikan Anak usia Dini.* Jakarta PT. Indeks
- [13]. *Undang-undang No 20 Tahun 2003. Tentang Sistem Pendidikan Nasional.* Bandung: Citra Umbara.
- [14]. *Undang-Undang Nomor 23 Tahun 2002, Tentang Perlindungan Anak.*
- [15]. Vygotsky. 2002. The zone of proximal development in 's analysis of learning and instruction Seth Chaiklin What kind of instruction is optimal for a particular child.
- [16]. Zaenab, 2012. *Manajemen sumber daya manusia pada PAUD di Kota Mataram (Studi Multikasus tiga PAUD).* Disertasi tidak dipublikasikan Universitas Negeri Malang
- [17]. Zaenab, 2015. *Metodelogi penelitian pendidikan Kualitatif perspektif Kekinian.* Penerbit Selaras Malang Indonesia.

# The influence of flipped model on learning achievement: an analyze of student school engagement

Sri Sukasih<sup>1</sup>, Zamzani<sup>2</sup>, Haryanto<sup>3</sup>

<sup>1</sup> Faculty of Education, Semarang State University, Semarang 50229 Indonesia

<sup>2</sup> Faculty of Language and Literature, Yogyakarta State University, Yogyakarta 55281 Indonesia

<sup>3</sup> Faculty of Education, Yogyakarta State University, Yogyakarta 55281 Indonesia

\*Corresponding/presenting author: kasih\_dk@yahoo.co.id

**Abstract.** Flipped classroom is a technique or model that plays an important role in promoting student's learning and achievement, this could create opportunities for active learning that could improve their performance and increase student engagement. The study aimed to examine the level of the influence of flipped classroom model, to test the fit of flipped classroom and student school engagement, student's participation and learning achievement, and school engagement and learning achievement. To analyze of student school engagement to learning achievement with flipped model by using SEM analyze. The research finding can be summarized as follows; The flipped model had a high level of student school engagement (M= 3, 438). The flipped classroom model had a good fit to the data. All hypothesized paths were supported, all  $p < 0,05$ , there was a direct and significant effect of flipped model on achievement, standardized estimate = 0,373 ( $p < ,05$ ). This study also shows that, for flipped classroom model to occur, student engagement is one the important factors on learning achievement.

**Keywords:** *flipped model, student school engagement, learning achievement, and SEM analyze*

## 1. Introduction

Education is a lifelong process in which people learn to negotiate with their world although others lay significant role in this process, education is essentially something people must do for themselves [Mangier, 1984]. School of the primary arena for the manifestation of students' school engagement, its ways of promoting it are influenced by a student's individual propensities and the quality of his or her interpersonal relationships with significant others at school and home [You & Sharkey, 2009]. On the other hand, students' school engagement refers to a student's investment in learning, experience of belonging, goals, participation and values.

Education engagement and school membership comprise the central concept, in spite of this emphasis efforts to define and study the constructs represented by these formally. It's to improve learning achievement is the application of learning models that provide enough space for students to develop the potential and skills possessed, that is able to influence student school engagement is a flipped classroom model (FC). Flipped classroom as a set of pedagogical approaches that move most information-transmission teaching out of class, use class time for learning activities that are active and social, and require students to complete pre-and/or-post class activities to fully benefit from in-class work [Dawson, 2014]. According to Bergmann [2012] argued basically the concept of a flipped class is this: that which is traditionally done in class is now done at home, and that which is traditionally done as homework is now completed in class. Flipped classroom approach is designed to utilize in-class time to encourage students to be active participants, hence, may be more likely to facilitate student need for autonomy and competence. Further more, by being active participants, students are more likely to experience greater levels of relatedness between them and the instructor as well as between them-selves [Abeysekara et al, 2014].

In this study we present empirical analyze of student school engagement on learning achievement through flipped classroom models. The study aimed to examine the level of the

influence of flipped classroom model, to test the fit of flipped classroom and student school engagement, student's participation and learning achievement, and school engagement and learning achievement. To analyze of student school engagement to learning achievement with flipped model by using SEM analyze

## **2. Literature Review**

### **2.1. Flipped classroom**

Flipped classroom is a learning model that prioritizes learning through discussion activities, exercises, and scientific work. In other words this instructional model is given by educators by minimizing a number of direct instruction in teaching practice while maximizing interaction with each other. This can be done through classroom activities such as discussion, problem solving, and group work. Activities can be obtained through videos, articles, books, power points, handouts, or even combine with each other. One of the greatest benefits of flipping is that overall in interaction increases: teacher to teacher and student to student. Because the role of the teacher has changed from presenter of content to learning coach, we spend our time talking to kids. We are answering questions, working with small groups, and guiding the learning of each student individually[Bergmann, 2012].

According to Bishop[2013] flipped classroom as an educational technique that consists of two parts: 1) interactive group learning activities inside the classroom and direct computer-based individual instruction outside the classroom. In other words, the practice problems normally completed at home are worked on in the classroom, and the direct instruction normally given during class time is given homework through video lectures, reading assignments, or some other direct instruction delivery method, this puts the focus on moving tasks in space and time, rather than focusing on increasing engagement, autonomy or student centeredness[Abeysekara et al, 2014]

### **2.2. Student school engagement**

Student engagement evolves as a complex interplay between a student and the school context. The construct of student engagement has typically been introduced as a three-dimensional construct[Fredricks et al, 2004]. Behavioral engagement from participation in school activities, cognitive engagement from literature on achievement motivation and educational values, and affective engagement draws from conceptualization of attachment to school related other. Student engagement results from individual or intrinsic motivation need which makes students have positive feeling and continue their practice with perseverance and self-confidence[Mandinach, 2009]. If students do not have a sense of school engagement, they are likely to lose interest in studying. School engagement is a major factor which has both direct and indirect influences upon student's learning achievement in the classroom context.

School engagement is important for student learning and academic success, the drive behind the development of educational quality to the promotion of learning achievement. The teachers could manage to boost up students' active participation, they can help students develop a sense of school engagement, which in turn helps enhance students' learning achievement. Active participation in early grades accompanied by some degree of academic success, serve to perpetuate continued participation throughout the school years. Under optimal conditions engagement becomes the individual's habitual form of behavior.

#### **2.3.1. behavioral engagement**

Behavioral engagement is a subtype of engagement pertains to students' participation in school activities, which can academic or non-academic [Willms, 2003]. Behavioral involvement in learning activities, attentiveness and school compliance, effort and persistence with schoolwork, school attendance having necessary equipment for active classroom participation. According to Hospell [2016] behavioral engagement as a multidimensional construct consisting of five dimensions: participation, following instructions, withdrawal, disruptive behavior, and absenteeism.

The positive impact of behavioral engagement on multiple educational outcomes has been well documented, for example argued that persistent behavioral engagement is an important correlate of long-term academic attainment. Fredricks[2004] argued that differentiate behavioral engagement and

cognitive engagement in learning with respect to effort, its comes to behavioral engagement in learning, effort is understood as spending time and working on topic or task. On the other hand, cognitive engagement can be understood as the reasons for using cognitive strategies or investing the effort in the first place.

**2.3.2. cognitive engagement**

Cognitive engagement in terms of a self-regulated or strategic approach to learning and valuing education has been shown to be positively with students’ academic performance[Virtanen, 2016]. According to Voelkl[2012] cognitive engagement as a contemporary extension of the bipartite affective and behavioral student engagement models. Including cognitive engagement into the construct of student engagement has resulted in some overlap dimensions cognitive engagement is defined as the extent to which students’ are willing and able to take on the learning task and hand. This includes the amount of effort students are willing to invest in working on the hand [Conro & Mandinach, 1983], and how long they persist[Richardson, 2006].

**2.3.3 affective engagement**

Affective engagement is based on students’ attachment to school and member of the social community, which makes it specific to a particular school context [Fredricks, 2004]. It taps students’ experiences of enjoyment and interest in school learning, such as experiences of warmth, connectedness, attachment, sense of belonging, feeling of being accepted by teachers and classmate and school membership.

Affective engagement is a relate indirectly to students’ academic performance for increased behavioral and cognitive engagement, educational persistence, and resilience [Finn & Zimmer, 2012]. Affective engagement may to set the stage for behavioral and cognitive engagement, therefore some students’ can still succeed academically despite of warning feeling about school, which suggests that youth may not always need to be affectively engaged to attain positive outcomes. On the other hand, affective engagement can be compensated for by other subtypes of engagement, at least with regard to academic performance.

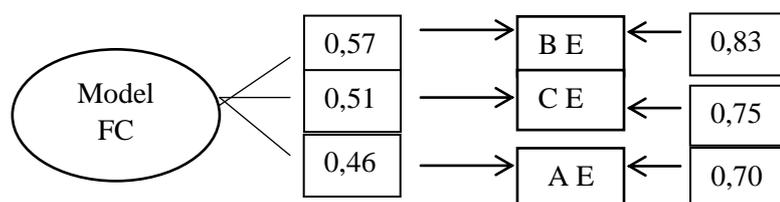
**3. Research Methodology**

In this research, the data were collected by means of the questionnaire. The reliability was estimated using Cronbach’s Alpha correlation. The reliability of student school engagement was equal to 0, 893. Descriptive statistic, frequency, percentage, mean, and standard deviation were used to analyzed the data. The confirmatory factor analysis was used to test the fit of the measurement model and SEM analyzed was performed to test the hypothesized engagement. The study samples consisted of 65 students’ grade 4 at elementary school. More than half of them or 63,2 % were female, the major of students were 11 years old.

**4. Discussion**

The finding of this research confirm that, by using a flipped classroom, students’ school engagement did enhance learning achievement. Students’ were more emotionally engaged with the material provide in the flipped classroom, they feel interested in the class, enjoy learning and have fun. This is followed by their behavioral engagement when the lecturer directed them on the activities in class, they listened carefully, paid attention and participated in the class activities.

*4.1 Students’ school engagement*

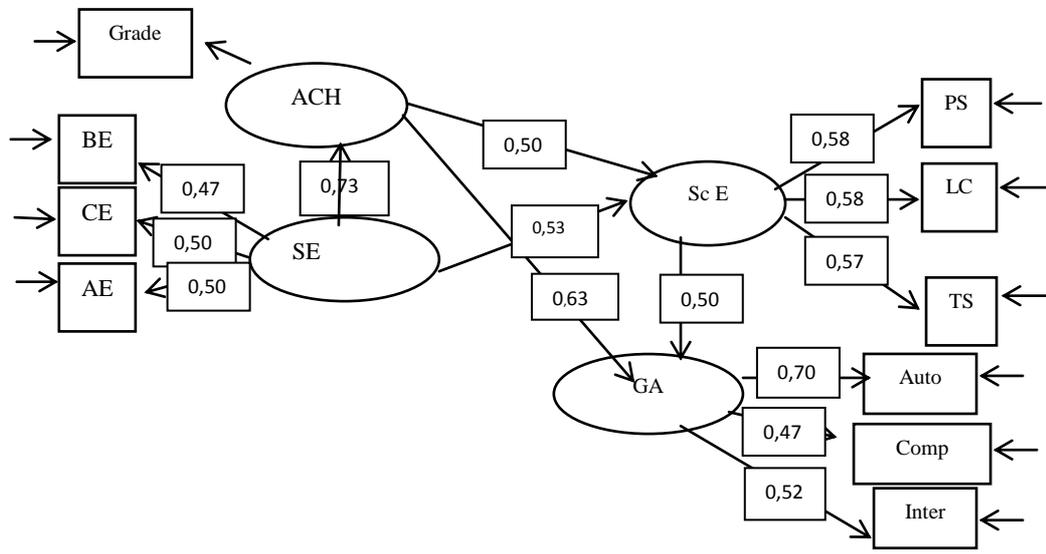


**Figure 1** Measuring Model FC

**Table 1.** Coefficient of Validity and Reliability Student Engagement

No	Factor	Validity coefficient	Reliability coefficient
1	Behavioral Engagement	0,57	0,83
2	Cognitive Engagement	0,51	0,75
3	Affective Engagement	0,46	0,70

The results show that model factor oriented to student school engagement is a factor that contributes to the construct of improvement indicator achievement. Based on table 1 it can be concluded that the factors of engagement on the model of learning provide a meaningful influence on student achievement.

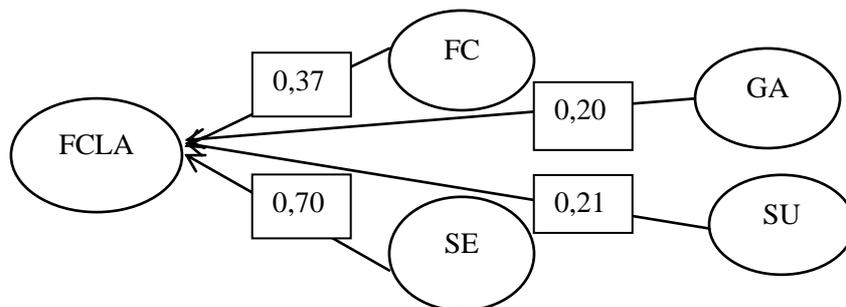


Chi-Square = -1,960 df = 62 P-value = 0,064 RMSEA= 0,00

**Figure 2.** Structural Model of Factors that Affect Learning Achievement

**4.2 Structural Model**

Based on Figure 2 can be seen the direct effects and indirect effects, which includes the relationship between the independent variable and the dependent variable ( indirect effects of KSI on ETA)



**Figure 3.** Structural Relationship Model between Variables

**Table 2.** Results of Analysis among Variables

No	Variable	Parameter	Estimated	Scor-T
1	SE	$\gamma_{41}$	0,70	7,25
2	FC	$\beta_{42}$	-0,37	-4,89
3	SU	$\beta_{42}$	0,21	2,87
4	GA	$\beta_{43}$	0,20	4,45

Based on table 2 can be explained the direct effect picture between the variables as follows: (1) there is a direct effect and meaningful of school quality to student's engagement with the estimated price  $\gamma_{41} = 0,70$  and value  $-t = 7,25 > 1,96$ ; (2) general ability and engagement with estimation  $\beta_{42} = -0,37$  and value  $-t = -4,89 > 1,96$ ; (3) school engagement and model with estimation of  $\beta_{42} = 0,21$  and value  $-t = 2,87 > -1,96$ ; (4) participation and engagement with estimation of  $\beta_{43} = 0,20$  and value  $-t = 4,45 > 1,96$ .

## 5. Recommendations

Educational agencies and relator administrator should raise awareness of the quality of teachers' role in promoting student's school engagement for increase achievement with the following measure: 1) teachers' knowledge and understanding about establishment of school engagement to improve and develop examined its efficiency, 2) teachers' should be assigned to use methods to increase students' school engagement and create many different educational that help students build on their knowledge, 3) knowledge about what school engagement and flipped model is, how important it is, and which methods can teachers promote achievement students' school engagement.

Related agencies and administrator should devise policies to reflect the role of teachers, it's to promote achievement students' school engagement. While policies have been implemented model flipped classroom which touch on this role and clear specifications off role of promoting students' school engagement.

## ACKNOWLEDGEMENT

We wishes to thank Yogyakarta State University and Department of Education Semarang Regency for funding in carrying out this research. We are also immensely grateful to Prof. Zamzani as a promotor and Dr. Haryanto as a co-promotor for their comments on an earlier version of the manuscript, although any error are our own and should not tarnish the reputations of these esteemed persons.

Many thanks to the students' and teachers responding to the research. This research whould not have been possible without your participations.

## References

- [1]. Abeysekera, L. & Dawson, P. 2014. Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research . *Journal of higher education research & development*, **34**(1), 1-14.
- [2]. Bergmann, J, & Sams, A. 2012. *Flip your classroom: Talk to every student in every class every day*. ISTE : United States of America
- [3]. Bishop, J.L, & Verleger, M.A. 2013. The flipped classroom: A survey of the research. *Paper presented at 120<sup>th</sup> ASEE Annual Conference & Exposition*. 23-26 June. Atlanta. American Society for Engineering Education.
- [4]. Finn, J. D. and Voelkl, K. E. 1993. "School characteristics related to student engagement". *The Journal of Negro Education*. **63**(3). 249-268.

- [5]. Fredricks, J.A, Blumenfeld, P.C, & Paris, A.H. 2004. School Engagement: Potential of the concept, state of the evidence. *Review of Educational Research*. **74**, 59-109.
- [6]. Gray, T., & Madson, L. (2007). Ten easy ways to engage your students. *College Teaching*, **55**(2), 83-87.
- [7]. Harper, S. R., Carini, R. M., Bridges, B. K., & Hayek, J. 2004. Gender differences in student engagement among African American undergraduates at historically Black colleges and universities. *Journal of College Student Development*, **45** (3), 271-84.
- [8]. Mandernach, B.J. 2009. Effect of Instructor-personalized multimedia in the online classroom. *International Review of Research open and Distance Learning*. **10**, 1-19
- [9]. Mangieri, John N. Staley, et al (1984). *Teaching Language Arts: Classroom Applications*. New York: McGraw-Hill Book Company.
- [10]. Richards, J., Sweet, L., & Billett, S. 2013. Preparing medical students as agentic learners through enhancing student engagement in clinical education. *Asia-Pacific Journal of Cooperative Education*, **14**(4), 251-263.
- [11]. Virtanen, T. 2016. Student Engagemen in Finish Lower Secondary School. *Thesis*. University Of Jyvaskyla. <http://www.researchgate.net/publication/311807150>
- [12]. Voelkl, K.E. 1996. "Measuring students' identification with school", *Educational and Psychological Measurement*. **56**, 760-770.
- [13]. Voelkl, K.E 1997. "School warmth, student participation, and achievement", *Journal of Experimental Education*. **63**, 127-138.
- [14]. Wilson, S. G. 2013. The flipped class: A method to address the challenges of an undergraduate statistics course. *Teaching of Psychology*, **40**(3), 193-199.

# Extracting Glucose From Tapioca Flour Enzymatically Using *Saccaromycess Cereviceae* (YEAST)

Faida Zuhria<sup>1</sup>, Sudarto M.Abukasim<sup>2</sup>

<sup>1</sup> Master's graduates of UGM, Yogyakarta

<sup>2\*</sup> Lecturer at Muhammadiyah University of North Maluku

**Abstract.** Indonesia is located at the equator line with its tropical climate which allows many species of plants to grow lushly. One of these species of plants is cassava which can be found from the west to the east of Indonesia. Cassava can produce amyllum which can be turned into glucose through hydrolysis process. This research aims at figuring out the comparison of reaction times, i.e.: 12, 24, 36, 48, and 60 hours, comparison of substrate concentration, i.e.: 20:120, 20:140, 20:160, 20:180, and 20:200 gr/ml and comparison of yeast content: 5%, 10%, 15%, 20%, and 25%. The hydrolysis is performed by mixing the cassava starch pulp at 20 grams and yeast at 11.6 grams. Later, it is fermented for variable times. After obtaining the optimal hydrolysis time, i.e. 12 hours, a hydrolysis is done at variable substrate concentrations for 12 hours and an optimum sugar level is obtained at 20:120 gr/ml ratio. It is then hydrolyzed for 12 hours at substrate concentration 20:120 gr/ml ratio, hence the optimum reduction sugar level is obtained when the yeast content is 10% of the tapioca flour pulp weight.

**Keywords:** *glucose, enzymatic, yeast*

## 1. Introduction

Indonesia is a country gifted with abundant amount of natural resources. These resources play an important role in fulfilling the need of Indonesian people. However, in fulfilling this needed, these natural resources should be exploited reasonably (as needed) and wisely based on environmental ethics (for example, when exploiting plants, new plants should be planted for regeneration purpose to allow the fulfillment of need through natural resources in the future).

The natural resources that Indonesia has in its territory include fuel and oil (petroleum, diesel, gasoline, and so forth), coal, various species of plants and trees, etc. The plants growing in Indonesia can grow lushly for its soil is highly good for farming. The plants frequently found in Indonesia are generally those which contain great extent of carbohydrate, such as paddy, corn, cassava, and so on.

Cassava is one of the most frequently cultivated plants in Indonesia. It can be a substitute to staple foods (rice). It can even be processed in many ways. One can directly boil it and immediately eat it or processed first into semi-finished goods in the form of flour, the tapioca flour. This tapioca flour can last for a very long time and it is usually used to make cakes, snacks, etc.

Based on its carbohydrate content, cassava has the greatest one after water. Hence, it is reasonable to assume that tapioca flour has the same amount of carbohydrate content as cassava or in a lesser amount due to the process it undergoes to turn into flour. Carbohydrate is the raw material to make glucose, thus it is possible to make glucose from tapioca flour. Glucose can be used as sweetener. From the natural resources potential of this cassava plant, it is expected that the business opportunity in the field of cassava utilization and processing can increase.

## 2. Theoretical Basis

Cassava is an annual plant from Tropical America. The nutrient content in each 100 gram cassava is as follows (Table 1). Hydrolysis is a process of breaking bonds of a compound, be it organic or inorganic compound, into another compound by water. Hydrolysis can be done using enzyme catalyst and every type of starch such as potato, yam, and corn, which will produce glucose when hydrolyzed. The factors which influence the hydrolysis process are time, reactor ratio, and the type of enzyme used.

**Table 1.** Nutrient content in each 100 gram cassava

Composition	Noutrition Conten of 100 gr of Integredients
Energy (kal)	158
Water (gram)	60
Protein (gram)	0.7
fat (gram)	0.7
Carbohydrate (gram)	37.9
Flber (gram)	-
Ash Content (gram)	-
Ca (mg)	33
Fe (mg)	0.7
P (mg)	40
Vitamin B4 (mg)	230
Vitamin B2 (mg)	0.06
Vitamin C (mg)	0

### 3. Research Method

The raw materials used consist of main and auxiliary ingredients. The main ingredients are tapioca flour (starch from cassava) and yeast (*Saccaromycess Cereviceae*). The auxiliary ingredients used include distilled water, standard glucose solution, Nelson A and Nelson B reagents, *Arsenomolybdate reagent*, HCL 37%, Alcohol 30%, and NaOH solution 45%.

The research steps taken in this research are raw material preparation, equipment preparation, water content analysis, starch analysis, and output analysis. To analyze the output, the glucose in tapioca flour (sample solution) is compared to the Optical Density (OD) value in standard curve. The standard curve itself is made using the following steps:

1. Make a standard glucose solution (10 mg glucose anhydrite/100 ml).
2. From this standard glucose solution, perform 6 dilutions to obtain glucose solution at 2, 4, 6, 8, and 10 mgs/100 ml concentrations.
3. Prepare 6 clean test tubes, each is filled with 1 ml standard solution above. 1 tube is filled with 1 ml distilled water as a blank.
4. Add into each test tube 1 ml Nelson reagent, and heat all tubes into boiling water bath for 20 minutes.
5. Take all tubes and cool them down together in a glass cup containing cold water until the tube temperature reaches 25<sup>0</sup>C
6. After it is cold, add 1 ml Arsenomolybdate reagent and shake it until all existing Cu<sub>2</sub>O deposits are dissolved again.
7. After all Cu<sub>2</sub>O deposits are completely dissolved, add 7 ml distilled water and shake it until it is homogeneous.
8. Shake it until it is homogeneous and cool it down until it reaches room temperature.
9. See the "Optical Density" (OD) of these solutions using cuvette tube at 540 nm wavelength.
10. Make a standard curve which shows the correlation between glucose concentration and OD. To measure the Optical Density (OD) of sample solutions, the following steps are taken:
  1. Prepare the sample solutions which have glucose content of around 2-8/100 ml. Please note that this sample solutions should be clear, thus when turbid or colored sample solutions are found, a cleansing needs to be done first using Pb-Acetate or Aluminium hydroxide pulp.
  2. Pipette 1 ml clear sample solution into a clean test tube.
  3. Add 1 ml Nelson reagent, and then treat it as in the preparation of standard curve above.
  4. Determine the amount of glucose based on the OD of sample solutions and the standard curve of glucose solution.

## 4. Result and Discussion

### 4.1. Standard Glucose Solution

This standard glucose solution is obtained from glucose anhydrite at 10 mg which is dissolved in 100 ml. From this standard glucose solution, glucose solutions are made at 2, 4, 6, 8, and 10 mg/100 ml concentrations.

**Table 2.** Standard glucose solution concentrations

No. Tube	1	2	3	4	5	6
Aquadest, ml	1.0	0.8	0.6	0.4	0.2	0
Standart glucose Solution, ml	0	0.2	0.4	0.6	0.8	1.0
Glucose Concentration, mg/100ml	0	2	4	6	8	10

From the analysis of standard glucose solution, the correlation between glucose concentration solution and Optical Density (OD) of experiment output is obtained and using the Linear Regression Equation the Optical Density (OD) of calculation result.

**Table 2.** Correlation between standard glucose solution concentrations and Optical Density (OD) of experiment output and calculation result

No	Glucose Concentration (mg/100 ml)	Optical Density Experimental (nm)	Optical Density Calculation (nm)
1	0	0	0.04145
2	2	0.23	0.18887
3	4	0.34	0.33629
4	6	0.51	0.48371
5	8	0.61	0.63113
6	10	0.77	0.77855

### 1. Result of Water Content Analysis

Original crucible weight : 46.51 grams

Original tapioca flour weight : 10 grams

Original (tapioca flour+crucible) weight : 56.51 gram

Then, it is ovened for 1.5 hours and put in an exicator gradually until the water content becomes 7.7%.

### 4.2. Result of Starch Analysis

Tapioca flour sample : 3.5 gram

Water volume (filtrate) : 250 ml

HCl 25% volume : 20 ml

Dilution volume : 500 ml

Volume sample : 1 ml

Then, the sample is analyzed using spectrophotometer and the Optical Density (OD) is found to be 0.063 nm. Based on the standard curved glucose solution, the glucose concentration can be figured out to be 0.4 mg/100ml. From this calculation of glucose concentration and dilution volume, a glucose weight at 1 gram can be found. Thus, the starch content produced is 25.71%.

### 4.3. Reaction Time Variable

The hydrolysis is performed by reacting substrate (20 gr starch and 120 ml distilled water / 1 : 6) at 116 gr with yeast at 11.6 gr and added with distilled water 20 ml. To figure out the influence of comparison of time to the glucose solution produced, an experiment is performed for variable times between 12 and 60 hours. From the experiment, the following data are obtained:

**Table 3.** Correlation between reaction time and glucose solution produced

No	Time (Hour)	Volume of glucose Solution (ml)	Weihgt of glucose Solution (gram)
1	12	13	10.89
2	24	18	15.86
3	36	25	22.54
4	48	26.5	23.77
5	60	27	23.94

The result above is analyzed with sample 1 ml using spectrophotometer, and a correlation between reaction time and Optical Density (OD) is obtained.

Dilution factor : 1000x

**Table 4.** Correlation between reaction time and Optical Density (OD)

No	Time (Hour)	Optical Density (nm)
1	12	0.301
2	24	0.271
3	36	0.255
4	48	0.245
5	60	0.211

Using the formula from the equation in standard glucose solution, a reduction sugar content can be found:

**Table 5.** Correlation between reaction time and reduction sugar content

No	Time (Hour)	Glucose Levels (mg/ml)	Weighth Glucose (mg)
1	12	3.521	45.773
2	24	3.114	56.052
3	36	2.897	72.425
4	48	2.761	73.1665
5	60	2.3	62.1

From the data above on the enzymatic time and output reduction sugar content, it can be seen that the longer the enzymatic reaction time the lesser the reduction sugar content obtained between 12 and 60 hours reaction time would be. This is because the ability of glucoamylase enzyme to turn starch into glucose is decreasing and it can be said that the glucose breaks into alcohol. Thus, it can be concluded that the 12-hours enzymatic reaction time is the most optimal (best) time.

The produced glucose solution will be increasingly greater. This is because of the ability of glucoamylase enzyme in changing starch into glucose.

From the graphic, i.e. between the duration of enzymatic reaction time and the reduction sugar content produced, it can be approached using the equation:

$$y = 3.8689e^{-0.0081x}$$

Where,

y = the produced reduction sugar content

x = duration of enzymatic reaction time

The equation above is applicable to 12-60 hours enzymatic reactions. The mean uncertainty = 95.62%.

#### 4.4. Substrate Concentration Variable

After the optimum hydrolysis time is obtained, i.e. 12 hours, a hydrolysis is then performed at variable substrate concentration for 12 hours. To figure out the substrate concentration to produced reduction sugar, an experiment is made with variable substrate concentrations between tapioca flour and distilled water. The tapioca flour weight is 20 gr and the distilled water starts from 120 ml (1:6),

140 ml (1:7), 160 ml (1:8), 180 ml (1:9), and 200 ml (1:10). The hydrolysis is performed by reacting the substrate, 11.6 gr yeast and added with 20 ml distilled water, for 12-hours fermentation time. From the experiment, the following results are obtained:

**Table 6.** Correlation between substrate concentration and glucose solution output

No	Substrate concentration (gr/ml)	Volume of glucose solution (ml)	Weight of glucose solution (gr)
1	20:120	7	4
2	20:140	9	6.23
3	20:160	15	11.87
4	20:180	40	36.45
5	20:200	22	18.99

The result above is analyzed using with 1 ml sample using spectrophotometer, and a correlation between reaction time and Optical Density (OD) is obtained.

Dilution factor : 1000x

**Table 7.** Correlation between reaction time and Optical Density (OD)

No	Time (Hour)	Optical Density (nm)
1	12	0.240
2	24	0.195
3	36	0.182
4	48	0.178
5	60	0.192

Using the formula from the equation in standard glucose solution, the following reduction sugar content is obtained:

**Table 8.** Correlation between substrate concentration and glucose content

No	Substrate concentration (gr/ml)	Glucose levels (mg/ml)	Weight glucose (mg)
1	20:120	2.694	18.858
2	20:140	2.083	18.747
3	20:160	1.907	28.065
4	20:180	1.853	74.12
5	20:200	2.042	44.924

From the table above, it is found that the optimal substrate concentration to obtain glucose is 20 gr tapioca flour with 120 ml distilled water.

From the data, between substrate concentration and produced reduction sugar content can be approached using the equation:

$$y = 201.21e^{-96.653 x}$$

where

y = produced reduction sugar content

x = substrate concentration

If the equation above is used again to calculate the produced sugar content, a mean uncertainty at 51.29% is obtained.

#### 4.5. Yeast Content Variable

To figure out the influence of yeast content on produced reduction sugar, an experiment is made with variable yeast contents between tapioca flour pulp weight and yeast. The tapioca flour weight is 20 gr, and the yeast contents are 5%, 10%, 15%, 20%, and 25%. The experiment is performed for the same duration, i.e. 12 hours with substrate concentration 20:120 gr/ml and added with distilled water 20 ml. From the experiment which has been conducted, the following data are obtained:

**Table 9.** Correlation between yeast content and produced glucose solution

No.	Yeast levels (%)	Volume of glucose solution (ml)	Weight of glucose solution (gram)
1	5 %	15	12.81
2	10 %	14	11.53
3	15 %	13	10.49
4	20 %	13.5	11.35
5	25 %	5	4.01

The result above is analyzed with 1 ml sample using spectrophotometer and the correlation between reaction time and Optical Density (OD) is obtained.

Dilution factor : 1000x

**Table 10.** Correlation between reaction time and Optical Density (OD)

No	Time (hour)	Optical Density (nm)
1	12	0.238
2	24	0.278
3	36	0.246
4	48	0.240
5	60	0.219

Using the formula from equation in standard glucose solution, the following reduction sugar content is obtained:

**Table 11.** Correlation between substrate concentration and glucose content

No	Yeast levels	Glucose levels (mg/ml)	Glucose (mg)
1	5 %	2.667	40.005
2	10 %	3.209	44.926
3	15 %	2.775	36.075
4	20 %	2.694	36.369
5	25 %	2.409	12.045

From the table above, it is found that the optimum yeast content to obtain glucose is 10% of raw material (tapioca flour).

From the data, it is found that between the yeast content and produced reduction sugar content can be approached using equation:

$$y = 3.0682e^{-0.076x}$$

where

y = produced reduction sugar content

x = yeast content

If the equation above is used again to calculate the produced sugar content, a mean uncertainty of 33.52% is obtained.

## 5. Conclusion

1. Extracting glucose solution from tapioca flour can be done enzymatically using *Saccharomyces Cereviceae*. The glucose content obtained is influenced by reaction time, substrate concentration, and yeast content.
2. In the enzymatic hydrolysis reaction, distilled water is needed as an addition to allow distilled water molecules collide well.
3. From the research result, the optimal sugar content is obtained when it is done for 12 hours with the substrate concentration for tapioca flour and distilled at 20:120 gr/ml, and the yeast content at 10% of the tapioca flour pulp.

## Daftar Pustaka

- [1]. deMan, M., 1997, "*Kimia Makanan*", ed.2, hal.166 -170; 190, Penerbit ITB, Bandung
- [2]. Direktorat Gizi Depkes RI, 1972, "*Daftar Komposisi Bahan Makanan*", Bharata, Jakarta
- [3]. Groggins, P.H., 1958, "Unit Process in Organic Synthesis", 5-ed, pp. 778 – 779, Mc.Graw Hill Kogakhusa, Tokyo
- [4]. Hasbullah, 2001, "*Teknologi Tepat Guna Agroindustri Kecil Sumatera Barat*", Dewan Ilmu Pengetahuan, Teknologi dan Industri Sumatera Barat, Jakarta
- [5]. Sudarmadji, dkk, 1997, "*Prosedur Analisa untuk Bahan Makanan dan Pertanian*", ed.4, hal.35 – 37, Lyberty, Yogyakarta

# Corporate Social Responsibility by Gender Perspective

Sukaris<sup>1</sup>, Jiwangga Hadi Nata<sup>2</sup>

<sup>1</sup> Universitas Muhammadiyah Gresik, Program Studi Manajemen  
Email : komandan21@yahoo.com

<sup>2</sup> Universitas Muhammadiyah Gresik, Program Studi Kewirausahaan  
Email : jiwangga.edpunair@gmail.com

**Abstract.** The research objective of this study in empirical success of corporate social responsibility (CSR) a gender perspective. The sampling technique using a non-probability sampling with accidental sampling. In this sampling technique is taken as a sample member is receiving communities CSR programs. The analysis technique used is the technique of chi square crosstab. The results showed implementation of CSR programs that have been implemented by the company for the community around the company includes the four major programs, namely the program activities of education, action programs in health, social activities program of economic and social fields as well as program activities in the field of security and public order as well as the environment. The characteristics of the individual beneficiaries of CSR programs based on age, marital status, education level, type of business or activity, and the level of income that accessed the implementation of CSR programs most are women compared to male gender. There is no relationship between individual characteristics and gender equality in terms of access, the management of the program and the benefits received. There is a relationship between gender equality in terms of access, program management and benefits received by the level of success of CSR programs that have been implemented which includes fulfillment of the respondents (beneficiaries) and the fulfillment of the increased capacity of beneficiaries.

**Keywords:** *Corporate Social Responsibility, Gender equality,, Compared Gender, Gender perspective*

## 1. Introduction

The development of a country is not just the responsibility of the government, every citizen plays a role to realize social welfare and improve the quality of life of the community, as well as the progress of the nation and country. One of the parties who play a major role in the development of the country is the business environment that has a role to encourage the development and healthy economic growth by considering also the environmental factors

The business environment has a great influence because it employs many people with interdependent relationships, where the company is a profit-oriented business entity and its workers with nature as human beings who need income to meet their daily needs. The interdependence relationship between the company and the worker is one-sided, in other words there is a conflict of interest between the parties who want to expend the minimum capital for maximum results with those who want to get maximum reward with what they have done. But with the development that occurred, now the business world is no longer just pay attention to the company's financial records alone (single bottom line), but already covers the financial aspects, social aspects, and environmental aspects, commonly called the triple bottom line. The synergy of these three elements is key to the concept of sustainable development

The role of CSR, PKBL or COMDEV BUMN has a wider scope than CSR practices conducted by private companies because CSR, PKBL or COMDEV SOEs are also expected to be able to realize the 3 main pillars of development (triple tracks) that have been proclaimed by the government and is a political promise to the community, namely: (1) reduction in the number of unemployed (pro-job) (2) pro-poor reduction and (3) increase in economic growth (pro-growth)

At the implementation level of CSR programs companies can use various dimensions of importance as described Wibisono (2007: 32), namely triple bottom line that is profit (profits), people (community) and the planet (environment) Dimensions of interest is certainly expected to boost quality of life of the community.

Hubeis (2010) quality of human life can be measured based on measurement of Human Development Index (HDI), Gender Development Index (GDI), and Gender Empowerment Measure (GEM). These three measurements aim to evaluate the quality of life and human development and measure gender equality and justice globally

The value of HDI Indonesia in 2007-2008 was ranked 107 and in 2009 HDI Indonesia decreased, which is ranked 111 with the title of Medium Human Development<sup>1</sup>. The 2009 GEM of Indonesia is ranked 96th out of 177 countries

Results from low HDI, GDI, and GEM indicate that there is a gender gap between women and men in various areas of life. Gaps and gender inequalities exist in the distribution of roles, access, control, participation, and benefits in national development.

GBHN National Policy of 1999 and Law Number 25 Year 2000 on National Development Program (PROPENAS) Year 2000-2004 is one of the efforts to realize gender equality and justice (KKG) in national development. Another form of national effort by the government is to issue Presidential Instruction Number 9 of 2000 on Gender Mainstreaming (PUG) in National Development. In addition, efforts to achieve gender equality and justice are also conducted internationally through the third objective of the MDGs, namely promoting gender equality and women's empowerment

CSR implementation programs have been done by many companies in providing benefits to the communities around the company, but does the program implementation take into consideration the different needs or interests of the beneficiary community (women and male participants)? Therefore, the implementation of the CSR program is carried out whether it is gender responsive or not, so the implementation of CSR becomes relevant and very urgent to be done as an effort to provide equality as the recipient of CSR program so that the pro-poor goal can be achieved. Based on the background that has been presented then can be formulated problems as follows: 1). How are CSR programs that have been implemented in a gender perspective ?; 2). How are the individual characteristics of CSR program beneficiaries (age, marital status, education level, type of business, and income level) disaggregated by sex (female and male) ?; 3) What is the relationship between individual characteristics and gender equality ?; and 4) To what extent is the level of gender equality seen from the access, control, and benefits enjoyed on the CSR program received and its relation to the success rate of the CSR program that has been implemented?

## **2. Theoretical Review**

### **2.1. Corporate Social Responsibility**

Business life can last a long time and in the long run, the business must provide answers to the needs of the community and members of the community. This awareness is a result of the success of a society in solving large economic problems, dotted with hunger, disease and poverty. It must therefore be defined by a new relationship between the business world and society to bring business activities closer to the social desire to achieve a better quality of life. The benefits of business involvement in social issues result in environmental conditions as well as giving positive things to business managers (Simorangkir, 2003).

Simorangkir (2003), states the concept of corporate social responsibility is a form of real company to give pleasure and happiness for society and also an ethical deed. Public relations is defined as having a social relationship and not a business relationship. This social phenomenon requires companies to have social responsibility or CSR (Corporate Social Responsibility)

Holme and Watts in Hadi (2011) define Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the local community and society at large.

The term CSR began to be used since the 1970s and became more popular after the presence of the book *Cannibals with FORKS: The triple Bottom Line in 21st Century Business* (1998) by John Elkington (Hadi, 2011) developed 3 important components sustainable development, namely economic growth, environment protection and social equity commissioned by the World Commission On Environmental Development (WCED), Elkington packs CSR in 3 focus ie 3P, stands for profit, planet and people. A good company not only pursue the economic profit but also has a concern for the interest of the environment (planet) and the welfare of the people (people)

In general, CSR is an improvement of the quality of life, is the ability of human as individual members of society to respond to existing social conditions and can be enjoyed, utilizing and maintaining the environment. Or in other words is the way the company organizes business processes to produce positive impacts on the community or a good image. Hadi (2011) provides restrictions on "Corporate Social Responsibility provides the capacity to build corporate building towards ensuring the company's going concern, including respect for systemic adoption of cultural sharing (local wisdom) into business strategy, including skills employees, society and government.

The CSR concept is actually relatively new. Even in classical corporation theory, the concept of CSR is hard to find. Nevertheless, the problem of CSR if sought the root of the theoretical roots, the concept of CSR got a relatively strong foothold because of the following two developments:

First, in reality government agencies are not always able to run the welfare of society satisfactorily. Second, markets sometimes fail to allocate resources efficiently. This happens when, one of the actions of a market agent, has an impact on the welfare or condition of the other. Unfortunately, this impact is sometimes overlooked by the agent. Economic or corporate activities should have a positive impact on the change of society within the company itself.

The change is certainly based on a sincere willingness that is born from within the business / company. It is of course aimed at the management of economic and social resources in its implementation to support stable development with the main condition that is efficient and equity. therefore in a broader sense, CSR is understood as a more "human" concept in which an organization is seen as a moral agent. Therefore, with or without the rule of law, a business organization, must uphold morality (Nussahid, 2006)

For that, there are three important pillars in stimulating the growth of CSR that can encourage sustainable economic development. The first is to look for an effective form of CSR to achieve the expected objectives (localities), secondly to calculate the capacity of human resources and institutions to stimulate CSR implementation (community, lawmakers, workers, business people), and the third is rules and regulations and codes ethics in the business world. In the end these three pillars will not be able to work properly without public sector support to ensure that CSR implementation by the company is aligned and in line with public sector development and development strategies ([www.Suaramerdeka.co.id](http://www.Suaramerdeka.co.id))

In this context CSR seeks how corporations as economic agents always obey laws and regulations, care about the surrounding social issues, care about environmental protection, occupational health and so on. Corporations must minimize the negative externalities that society has to bear. And the corporation should act as a good corporate citizenship.

The concept of CSR in Indonesia has been known and practiced in Indonesia around the 1970s. In a sense CSR is still perceived as a charity ideology (charity) from the entrepreneurs to the community around where the company operates. Besides, there are still many parties who identify CSR with Community Development (CD). CSR can not be simplified only to Community Development (CD) because actually the existence of Community Development (CD) and CSR is very different. Community Development (CD) is a company's willingness to provide benefits to communities around the company's premises, whereas CSR emerges as a reaction to community demands based on the idea that the existence of a company somewhere will undoubtedly reduce the rights of the local community. CSR requires something deeper than just providing a variety of assistance to communities around the business location (Simorangkir, 2007)

Wibisono (2007: 8) defines CSR in etymology in Indonesia is often translated as corporate social responsibility. In other contexts, CSR is sometimes referred to as corporate social responsibility or social responsibility of the business world. But if one of them is called, the connotation must be back to CSR. Although it does not have a single definition, this concept offers a similarity, namely the continuity between attention to the economic aspects and attention to social and environmental aspects (economic concept, sustainability, environment sustainability and social sustainability)

A more comprehensive view of CSR is proposed by Carrol who put forward the theory of the CSR Pyramid. According to him, corporate responsibility can be seen based on four levels (economical, legal, ethical and philanthropic) which is a unity. Furthermore Weeden and Svendsen stated that CSR developed into a concept that contains the idea of responsibility of the business world, which recognizes ethical performance, environmentally friendly, socially business, and prioritize good relationships with all stakeholders (Badaruddin, 2007).

Implementation of CSR is one of the implementation of Good Corporate Governance (GCG) principles related to corporate social responsibility to the public. The point is that GCG is a system, and a set of rules governing relationships between various stakeholders. Especially in the narrow sense, namely the relationship between shareholders and board of commissioners and board of directors in order to achieve corporate objectives (the company). And in a broad sense, which regulates the relationship of all stakeholders' interests in order to be accommodated proportionately. GCG, as well, is intended to ensure that errors in corporate strategy that occur can be corrected immediately

In the preamble of the Constitution of the Republic of Indonesia which states: "The State protects all the Indonesian nation and the entire blood of Indonesia, promotes the general welfare, educates the nation and the realization of social justice ...." Also reflected in Article 33ayat (3) of the 1945 Constitution, , "Earth water and natural resources contained therein are controlled by the State and used for the greatest prosperity of the people".

Nussahid (2006) states the social role of BUMNs can be seen from the dual dimensions attached to it. According to the Tangier Group discussion in 1981, an institution is described as a state enterprise if it has two dimensions: the public dimension (dimension) and the business dimension. Public dimension, BUMN requires not only public ownership and control, but also illustrates the concept of public purpose (public, public aims). While the business entity dimension is related to commercial concept (business line)

In line with the above, the legal basis has been issued by the Ministry of SOEs namely: Decree of the Minister of SOE Number Kep-236 / MBU / 2003 dated June 17, 2003 on Partnership Program of SOEs with Small Business and Community Development. Funding from this partnership program is derived from a provision of 1-3 percent of net profit earned by SOEs. We hope that the policy adjusts to the economic development and social environment conditions of the surrounding state-owned enterprises ([www.suarakarya.com](http://www.suarakarya.com))

Furthermore, based on the Attachment of Ministerial Decree of SOE Minister Number SE-433 / MBU / 2003 dated September 16, 2003 on Guidelines for Implementation of BUMN Partnership Program with small business and environmental development program, among others set up the establishment of PKBL Unit which is part of the organization of the company as a whole. PKBL's function is to provide guidance in the form of evaluation, distribution, billing, training, monitoring, promotion, and administrative and financial functions. The issue of coordination has been regulated in Article 11 paragraph (1) point b of the decision of the Minister of SOEs, at least in the form of submitting a list of prospective partner who will be given loan fund to SOE coordinator to avoid duplication of loan.

If the program can be implemented as well as possible and managed optimally, then the existence of partnership program can reach the small entrepreneur (partners) more broadly, so that the multiplier effect can be enjoyed nationally. It is time for the company to raise awareness of the surrounding community as a form of corporate social responsibility to the public, so that the company can maintain sustainable company. Finally hopefully CSR programs can be managed professionally

and transparently so that CSR really useful for economic empowerment of society around company location.

Furthermore, CSR can be interpreted as a commitment in doing business by taking into account social aspects, norms and ethics that apply, not only to the surrounding environment, but also to a wider internal and external scope. Not only that, long term CSR has a positive contribution to sustainable economic growth and improving welfare.

Companies that run the CSR program wholeheartedly will get a number of benefits (Wibisono, 2007: 78) as follows:

1. Maintain and boost the company's reputation and brand image
2. Eligible to get social license to operate
3. Reduce the business risk of the company
4. Expanding access to resources
5. Spread access to the market
6. Reduce costs
7. Improving relationships with stakeholders
8. Improve relations with regulators
9. Increasing employee morale and productivity
10. Opportunity to get an award

## **2.2. Legal Basis of CSR Program Implementation**

Legal basis in the implementation of COMDEV's CSR program refers to the laws and regulations;

1. Government Regulation No. 3/1983 on the Procedures for the Development and Supervision of Bureau of Companies (Perjan), Public Enterprises (Perum) and Limited Liability Company (Persero).
2. Decree of the Minister of Finance No.:1232/KMK.013/1989 dated November 11, 1989 concerning Guidelines for the Development of Weak Economic Entrepreneurs and Cooperatives through State-Owned Enterprises, development funding is provided from a provision of a half-profit of 1% -5% of profit after tax .
3. Decree of the Minister of Finance No.:316/KMK.016/1994 dated June 27, 1994 on Guidelines for the Development of Small Enterprises and Cooperatives through the Utilization of Funds from the State-Owned Enterprises Profit Division
4. Decree of State Minister of State Owned Enterprises / Head of BUMN Supervisory Board No .: Kep-216 / M-PBUMN / 1999 dated 28 September 1999 on Partnership Program and Bina Lingkungan Environment
5. Decree of the Minister of SOE No.:Kep-236/MBU/2003 dated June 17, 2003 on Partnership Program of SOEs with Small Business and Community Development Program
6. Regulation of the Minister of State-Owned Enterprises No .: Per-05 / MBU / 2007 dated 27 April 2007 concerning Partnership Program of SOEs with Small Business and Community Development Program
7. Law on Limited Liability Company (UUPT) Number 40 Year 2007 article 74 on Social Responsibility paragraphs 1 and 2.

## **2.3. The purpose of CSR**

The series of CSR activities aims to achieve the main objective of a positive image of the company which can use the following benchmarks

1. Trust, In the development and progress of a company can not be separated from the public support is the existence of trust. That is, trust becomes a continuation of the breath of life of a company.
2. Reality, Realistic, clearly manifested, measurable and the results can be felt and can be accounted for with a mature and systematic planning for respondents
3. Cooperation of mutual benefit. An activity carried out bring success and profit among the parties concerned.
4. Awareness, Audiences awareness about and attention to the products produced and to the development of the company.

#### **2.4. Gender and equality**

Opinions on gender and gender definitions are sometimes perceived as similar, but it is clear that the difference between the two, as Hubeis (2010) suggests, defines gender by referring to a system of roles and relationships between women and men who are not determined by biological differences, but by the socio-cultural, political, and economic environments so as not to be natural or absolute.

WHO (2011) gives gender restriction as "*Gender refers to the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women*".

The meaning of equity refers to the Presidential Instruction in the PUG Guidance in National Development defines gender equality as a condition of equality for women and men to obtain opportunities and rights as human beings, in order to be able to participate in political, economic, socio-cultural, defense and security activities, as well as similarities in enjoying the results of development

Gender analysis in the National Development Guidelines is: "A systematic process for identifying and understanding the division of labor or the role of women and men, access and control over development resources, participation in development processes and benefits they enjoy, women and men who are in disarray, who in the exercise of attention to other factors such as social class, race, and ethnicity "

In the Prastiwi and Sumatri research (2012) states there are five key components in the gender analysis:

- a. sex-disaggregated data: socio-economic data disaggregated by sex and demographic variables, such as age, social group, and ethnicity (quantitative or qualitative);
- b. the analysis of the division of tasks: what, where, when, and how much is done by men and women to describe different demands on the time and energy of women and men, how much work they are valued, seasonal work patterns and strategies to meet daily needs,
- c. access and control analysis,
- d. analysis of strategic needs and practical needs,
- e. analysis of social contexts: examine and understand local social contexts (legal, socio-cultural, religious, institutional, government policies) that affect gender roles and relationships

### **3. Research Methodology**

The location of this research is done by focusing on Gresik research on the implementation of CSR programs in state-owned Gresik

To facilitate the understanding of the variables of this study, the variables To facilitate the understanding of this research variables, the variables will be defined before the analysis is done further; before the research variables are defined, it is necessary to present the implementation of programs implemented by CSR companies in various program areas (education, health, socio-economic and security of the environment), while the research variables are described as follows:

#### ***a. Social, economic and demographic characteristics***

Represents the level of education, type of business, and income level, age and marital status of women and male participants. As well as the role in society as a whole can affect gender equality in relation to corporate social responsibility company

#### ***b. Gender equality***

Statement of the access or opportunity of CSR community beneficiaries to the resources (financing (venture capital, training, and assistance) of beneficiaries, control or the power of beneficiaries of CSR programs on resources (funding, training and assistance) of beneficiaries, and the benefits of the CSR program beneficiaries (income generation, social status improvement, basic needs fulfillment and entrepreneurship improvement) perceived by CSR program beneficiaries The higher levels of access, control, and benefits enjoyed by CSR program beneficiaries, there is gender equality of CSR program implementation.

**c. Strategic role and practical role.**

Statements on the practical needs of gender are basic needs or life, such as food, water, shelter, water, clothing, income, and health care while gender strategic needs are the need for equity and empowerment, such as equal distribution of responsibilities and decision making, the same training

**d. The success of the program**

A statement on the success of program implementation if practical needs and gender strategic needs are met

The approach used in this research is qualitative and quantitative descriptive approach. To be able to formulate the problem of research more specifically, it is necessary survey method that this research take sample from population by using questioner as main data collection tool. Survey conducted is descriptive survey. The unit of analysis is the community receiving CSR program in 2013

The population in this study is the recipient community of CSR program In this study the number of samples taken is 200 people. The sampling technique is to use non probability sampling with accidental sampling. In this sampling technique taken as a sample member is the recipient community of CSR programs. Measurements are made using a nominal scale. In this study, researchers distributed questionnaires compiled in sentence questions. Respondents were asked to respond by choosing one of the answers. The answers of qualitative respondents are quantified

In answering the objectives of the study, test the relationship between variables and assess the model prepared, the analytical technique used is crosstab chisquare technique. Chi Square Test or often called Chi Square is used to test the alignment in which testing is done to check the dependence and homogeneity of a data. This test was first introduced by Karl Pearson who used the data in the form of frequency tables which is the result of data classification

## **4. Analysis and Discussion**

### **4.1. Analisis**

Based on interviews and questionnaires conducted by the researcher to the informant then obtained input on the programs that have been implemented to the beneficiaries of the program is the community around the company or ring 1 company. In accordance with that information then obtained the key programs that have been done namely

#### **1. Educational Activities Program.**

This implemntation program includes;

- a. Waste Management Training
- b. Material contribution to educational facilities and schools
- c. Contributions to educational institutions, motivation, etc.
- d. 3R Independent Community Management Training
- e. Shared planning on CSR
- f. Business training (entrepreneurship)

#### **2. Program Activity Field Health**

This implemntation program includes;

- a. Participation of traditional sports costumes
- b. Procurement of waste bins
- c. Spraying fogging
- d. Provision of empowerment facilities (plastic crushers, biogas processing and water sanitation)
- e. Free treatment and PMT Posyandu Balita
- f. Comparative Study of Environmental Cadres

#### **3. Social and Social Economic Activities Program**

This implemntation program includes;

- a. Contribution of Paving and its completeness
- b. Contribution of village anniversary
- c. Material contribution for completeness of PKL center

- d. Break the fast together and Ramadan safari
- e. Contribution Hariban celebration
- f. Business capital assistance through BMT

#### 4. Program of Activity for Security and Public Order and Environment

This implementation program includes; Contribution of greening and environmental facilities

In addition to the implementation of the program several companies have implemented a separate program that is the disaster response program. The interesting finding is that accessing the most CSR program implementation is 68% women while accessing or in other terms male beneficiaries as much as 32%. For the most widely accessible programs are programs in the field of economic empowerment.

##### 4.1.1. The individual characteristics of CSR program beneficiaries (age, marital status, education level, type of business, and income level) are disaggregated by sex (women and men)

Characteristics of beneficiaries of CSR program by age can be described that age is divided into three young age, productive age and old age, for young age equal to 1 respondent or 0333%, for productive age of 296 respondents or 99%, and old age of 3 people with a percentage of 1%. This data if sorted into gender then age structure with configuration as follows:

- a. For the younger users (beneficiaries) the implementation of CSR programs as much as 1 respondent, where for men 0%, women by 100%
- b. For the productive age of accessors (beneficiaries) the implementation of CSR programs as many as 296 respondents, with men 32.1% (95 respondents), women of 67.9% (201 respondents)
- c. For old age users (beneficiaries) implementation of CSR program as much as 3 respondents, with men 33.3% (1 respondents), women equal to 66.7% (3 respondents)

Based on these results it is known that the largest access for CSR program implementation is the productive age and dominant in the female gender structure. With the program accessible at this productive age, it is possible that implementation success will be greater.

Characteristics of beneficiaries of CSR programs based on marital status can be described that this category is divided into two ie married or unmarried, where the proportion to marry as many as 270 respondents or 0.333%, and not married as many as 30 people with a percentage of 10%, this data if sorted into sex then marital status with configuration as follows:

- a. To marry the access (beneficiaries) the implementation of CSR program as many as 270 respondents, where for men 34.1% (92 respondents), women of 65.9% (178 respondents)
- b. For unmarried users (beneficiaries) CSR program implementation as many as 30 respondents, with men 13.3% (4 respondents), women equal to 86.7% (26 respondents)

Based on these results it is known that the largest access to the implementation of CSR programs are married and dominant respondents in the female gender structure. With the accessible program on the sex of married women it shows that women have an important role in helping improve the family economy.

Characteristics of CSR program beneficiaries based on educational level can be described as being divided into five categories: SD, SLTP, SMA, D1 / D2 / D3 / D4 / S1, where the proportion for elementary schools is 18 respondents or 6%, for junior 33 respondents or 11%, for high school as many as 187 respondents or 62.3% for D1 / D2 / D3 / D4 / S1 49 or 16.3% then the characteristics based on education level with the following configuration:

- a. For elementary level education, access (beneficiaries) the implementation of CSR program as many as 18 respondents, where for men 11.1% (2 respondents), women were 88.9% (16 respondents)
- b. For junior secondary education, access (beneficiaries) CSR program implementation as much as 33 respondents, with men 30.3% (10 respondents), women of 69.7% (23 respondents)
- c. For high school level education, the beneficiaries of CSR program implementation were 187 respondents, whereas for men 38% (71 respondents), women 62% (116 respondents)
- d. For the education level of D1 / D2 / D3 / D4 / S1, the beneficiaries of CSR program implementation were 49 respondents, for 26.5% (13 respondents), 73.5% (36 respondents)

- e. For S2 level education, the beneficiaries of CSR program implementation are 13 respondents, whereas for men 0% (0 respondents), women are 100% (13 respondents)

Based on these results it is known that the largest access to the implementation of CSR programs are respondents who have high school education level and have undergraduate S1 and dominant in the female gender structure. With access to the program on the gender of high school educated women and Strata 1 indicates that Access has good ability in managing the implementation and strengthening capacity for him so that the implementation can be achieved successfully

Characteristics of CSR program beneficiaries based on the type of business or occupation currently occupied can be described as being divided into six categories: housewives, teachers, entrepreneurs, employees, civil servants / TNI / POLRI and students. For the proportion of occupations employed as housewives as much as 112 or 37.3%, for Teachers of 3 respondents or as much as 1.0%, for entrepreneurs as much as 50 respondents or 16.7%, for employees as much as 104 or 35%, for civil servants / POLRI as many as 27 respondents or 9%, and for employment activity as a student as much as 4 or 1.3%

Characteristics based on activity type / business / work with configuration as follows:

- a. For the type of activity / business / job as housewife, the access (beneficiary) of CSR program implementation was 112 respondents, where for men 6.3% (7 respondents), women were 93.8% (105 respondents)
- b. For the type of activity / effort / job as a teacher, the accessor (beneficiary) CSR program implementation as much as 3 respondents, with males 0% (0 respondents), women of 100% (3 respondents)
- c. For the type of activity / business / job as an entrepreneur, the beneficiaries (beneficiaries) of CSR program implementation are 50 respondents, where for 28% (14 respondents), 72% (36 respondents)
- d. For the type of activity / business / job as an employee, the accessor (beneficiary) of CSR program implementation is 104 respondents, where for men 67.3% (70 respondents), female is 32.7% (34 respondents)
- e. For the type of activity / business / job as civil servant / military / police, access (beneficiaries) implementation of CSR program as many as 27 respondents, where for men 18.5% (5 respondents), women equal to 81.5% (22 respondents)
- f. For the type of activity / business / job as a student, the beneficiary (the beneficiary) the implementation of CSR program as much as 4 respondents, where for men 0% (0 respondents), women of 100% (4 respondents)

Based on these results it is known that the largest access for CSR program implementation is the respondents who have activity / business / work as housewife and dominant in female gender structure. With access to the program on the sex of women whose activities / ventures as a household indicates that the visitor has a strong desire to be able to improve the family economy and provide added value to the activities he undertakes so as to enable the success of the implementation of CSR programs undertaken by the company.

Characteristics of beneficiaries of CSR programs based on the type of business or occupation currently occupied can be described that this category is divided into six categories, described as follows: income level Rp 300.000-1.300.000 133 or 44%, 1,400,000-2,400 As many as 112 or 37%, 2,500,000-3,500,000 as many as 32 or 11%, 3,600,000-4,600,000 as many as 9 or by 3%, 4,700,000-5,700,000 as many as 9 or by 3% , 5,800,000-6,800,000 by 2 or 0.7%, 6,900,000-7,900,000 0 or 0%, 8,000,000-9,000,000 by 2 or by 0.07%, 9.100.000-10.100.000 as much as 1 or 0.03%. Based on these results it is known that the largest access for CSR program implementation is the respondents who have income levels below 2.400.000 and dominant in the female gender structure

This result is in line with the activity / occupation / business of respondents who are housewives and employees who in fact the income under the minimum wage of the city (UMK) With access to the program on the gender of women who have income level below Rp 2.400.000 indicates that the access has a strong desire to be able to improve the family economy and improve living standards so as to enable the success of the implementation of CSR programs conducted by large companies.

The Linkage Between Individual Characteristics and Gender Equality Based on the results of data processing with cross tabulation (crosstab) Chi Square as follows:

**Tabel 1.** Analisis Result of Chi Square

Karakteristik Individu	Dalam akses			Dalam akses			Dalam akses		
	Pearson chi Square Value	df	Asimp. Sig.(2-sided)	Pearson chi Square Value	df	Asimp. Sig.(2-sided)	Pearson chi Square Value	df	Asimp. Sig.(2-sided)
Jenis Kelamin	0.685	1	0.408	0.381	1	0.537	0.047	1	0.829
Umur	0.140	2	0.932	0.228	2	0.892	0.772	2	0.680
status Pernikahan	1.149	1	0.284	0.117	1	0.732	0.893	1	0.345
Tingkat Pendidikan	1.850	4	0.732	1.646	4	0.800	7.865	4	0.097
Jenis Aktivitas/Usaha/Pekerjaan	12.044	5	0.034	10.363	5	0.066	1.615	5	0.899
Tingkat Pendapatan	5.646	7	0.582	4.612	7	0.707	3.889	7	0.792

Based on the results presented in table 1 as a whole described as follows:

1. Relation or relationship between individual characteristics based on sex with equality in access that obtained value of chi square count equal to 0.685 with significance value equal to 0.408, equality in terms of managing benefit program value chi square count 0.381 with significance value 0.537, for equality in benefit which is received with chi square value of 0.047 with significance of 0.829. because the value of significance far above 0.05 it can be concluded that there is no relationship between sex with gender equality both in terms of access, management of CSR benefit programs as well as benefits received on the implementation of CSR program
2. The relationship or relationship between individual characteristics based on marital status with equality in access that obtained value of chi square calculate of 1.149 with a significance value of 0.284, equivalence in terms of managing the benefits of the program value of calculated chi square of 0.117 with a significance value of 0.732, for equality in benefits received with a value of chi square of 0.893 with significance of 0.345. because the value of significance far above 0.05 it can be concluded that there is no relationship between sex with gender equality both in terms of access, management of CSR benefit programs as well as benefits received on the implementation of CSR program
3. Relation or relationship between individual characteristics based on age with equality in terms of access, that obtained value of chi square count 0.140 with a significance value of 0.932, equivalence in terms of managing the benefits of the program value of chi square count 0.228 with a significance value of 0.892, for equality in the benefits received with the value of chi square of 0.772 with significance 0.680. Because the value of significance far above 0.05 it can be concluded that there is no relationship between characteristics of individuals by age with gender equality both in terms of access, management of CSR benefits programs as well as benefits received on implementation CSR programs
4. Relation or relationship between individual characteristics based on level of education with equality in access that obtained chi square value counted 1850 with significance value of 0.763, equality in terms of managing the benefits of the program the value of chi square counted 1,646 with a significance value of 0.800, for the equality in the benefit received with the value of chi square of 7,865 with a significance of 0.097. because the value of significance far above 0.05 it can be concluded that there is no relationship between individual characteristics of education level with gender equality both in terms of access, management of CSR benefit programs and benefits received on the implementation of CSR program
5. Relation or relationship between individual characteristics based on activity / business / work with equality in access that obtained value of chi square count equal to 12,044 with significance value equal to 0.034, equality in terms of managing benefit of program value of chi square count equal to 10363 with value signifikansi 0,066, for equality in benefits received with a chi square value of 1.615 with significance of 0.899. because the significance value for equality in access is less than 0.05 it can be concluded that there is a relationship between the type of activity / business / work with in the company's CSR program access, while the value of significance for equity in managing

benefits and receiving benefits far above 0.05 it can be concluded that there is no the relationship between the type of activity / business / work with gender equality both in terms of management of CSR benefit programs and benefits received on the implementation of the CSR.

6. Relation or relationship between individual characteristics based on level of income with equality in access that obtained chi square count value equal to 5,646 with significance value equal to 0.582, equivalence in terms of managing benefit program value chi square count equal to 4,612 with value signifikansi 0,707, for equality in benefit received with the value of chi square of 3.889 with significance of 0.792. because the value of significance is far above 0.05 it can be concluded that there is no relationship between income level with gender equality both in terms of access, management of CSR benefit programs and benefits received on the implementation of CSR program

**4.1.2. The level of gender equality is seen from the access, control (management), and benefits enjoyed on the accepted CSR program and its relationship with the success rate of the CSR program that the company has implemented.**

Based on the results of data processing with cross tabulation (crosstab) Chi Square summarized as follows :

**Tabel 2.** Analisis Result of Chi Square

Kesetaraan Gender	Keberhasilan Program CSR					
	Terpenuhinya Kebutuhan			Peningkatan Kemampuan		
	Pearson chi Square Value	df	Asimp. Sig.(2-sided)	Pearson chi Square Value	df	Asimp. Sig.(2-sided)
Dalam hal Akses	9.387	1	0.002	6.238	1	0.013
Dalam hal Kontrol (mengelola)	12.140	1	0.000	14.770	1	0.000
Dalam hal Manfaat yang diterima	64.981	1	0.000	140.468	1	0.000

Based on the results presented in Table 2, the relationship or gender equality relationship seen from the access, control (management), and benefits enjoyed on the CSR program received with the success rate of CSR programs that have been implemented as a whole is described as follows :

1. The relationship or relationship between gender equality seen from the access to the success rate of CSR programs that have been implemented by the company in terms of the fulfillment of the needs of beneficiaries that obtained the calculated chi square value of 9.387 with a significance value of 0.002, gender equality seen from the access to the success rate of the CSR program which has been implemented by the company in increasing the ability of program beneficiaries with the value of chi square counted 6.238 with a significance value of 0.013, because the significance value of gender equality seen from the access to the success rate of CSR programs that have been implemented company is smaller than 0.05 then it is concluded there is a relationship between gender equality is seen from access to the success rate of CSR programs both in terms of fulfillment of needs and there is an increase in the ability of beneficiaries of CSR programs that have been implemented company
2. The relationship or relationship between gender equality in management of programs received with the success rate of CSR programs that have been implemented by the company in terms of the fulfillment of the needs of beneficiaries that obtained the value of chi square count of 12,140 with a significance value of 0.000, gender equality in the management of the program received with the success rate of CSR programs that have been implemented by the company in increasing the ability of beneficiaries of the program with the value of chi square count of 14,770 with a significance value of 0.000, because the value of significance between gender equality in the management of the program received with the success rate of CSR programs that have been implemented company less than 0.05 it is concluded that there is a relationship between gender equality in the management of the program received with the success rate of the CSR program both in terms of fulfillment of needs and there is an increased ability of beneficiaries of CSR programs that have been implemented by the company.

3. The relationship or relationship between gender equality seen from the benefits obtained on the CSR program received with the success rate of CSR programs that have been implemented by the company in terms of the fulfillment of the needs of beneficiaries that obtained the calculated chi square value of 64,981 with a significance value of 0.000, gender equality seen of the benefits derived from the CSR program received with the success rate of CSR programs that have been implemented by the company in increasing the ability of program beneficiaries with a calculated chi-square value of 140,468 with a significance value of 0.000, because the significance value of gender equality is seen from the benefits gained on the program CSR received with the success rate of CSR programs that have been implemented by the company is smaller than 0.05 then it is concluded that there is a relationship between the gender equality seen from the benefits obtained on the CSR program that dite rhythm with the success rate of CSR programs both in terms of the fulfillment of needs and there is an increase in the ability of beneficiaries of CSR programs that have been implemented company

#### **4.2. Discussion**

Based on the results of the research that has been presented described discussion of these results. That the implementation of corporate CSR program that has been done by the company in the surrounding community (ring one) includes four major programs that are general, namely education activity program, health program activity, social and community economic activity program and activity program of security and public order as well as the environment, while for additional programs such as disaster management programs not all companies enter as separate programs. For a derivative program or sub-program implementation adjusted to the results of social mapping conducted by the company in each year or based on the five-year strategic plan and one-year renja (short-term plan). Therefore, the implementation of this program is in fact in accordance with the stages that enable that the CSR program is done will be right on target, the right quality and the right objective so that the potential of success that is fulfillment needs (according to individual characteristics) or in capacity building (empowerment) program benefits can be achieved. So that the implemented program is not just charity but more to the community empowerment program (empowering)

Characteristics of individual beneficiaries of the CSR program whether viewed from age, marital status, education level, type of business, and level of income and gender-based segregation (women and men) The interesting finding is that access to the implementation of CSR programs is 68% while accessing or in other terms male beneficiaries as much as 32%, as well as a married productive age, which has a high school education level and has undergraduate level S1, and who have income levels below 2,400,000 these findings indicate that users have the desire strong to be able; 1) Improving the economy of himself and his family and the surrounding community; 2) Improving the quality of life by increasing capacity of corporate CSR programs; 3) Responsible for the implementation of the program. These conditions can help the success of the implementation of CSR programs conducted by large companies.

The relationship or relationship between individual characteristics by sex, marital status, age, education level, activity / business / occupation and income level with equality in access, equality in managing the program and equity in benefits received on the program that known no relationship of individual characteristics based on sex, marital status, age, educational level, activity / business / occupation and income level with equality in access, equality in managing the program and equity in benefits received on the implementation of CSR program this shows that in the implementation of the program does not distinguish the gender . However, the number of male respondents has access and high management of CSR programs rather than the number of female respondents to the CSR program. As for the benefits received from the program, most of the female respondents felt that they benefited greatly (84.3%) while the majority of male respondents felt that they benefited poorly (83.3%). As much as 16 percent, both male and female respondents said benefits enjoyed by CSR were low. The female respondents enjoyed an increase in the income they earned even though the amount of the increase was not large and could not necessarily meet all the needs of their families. In contrast to female respondents, most male respondents felt that their situation before and after obtaining the financing was the same and no change was made. So by looking at those values which

almost equally indicate in gender equality in terms of access, management and benefits gained. The linkage or gender equality relationship seen from the access, control (management), and benefits enjoyed on the CSR program received with the success rate of the CSR program that the company has implemented (fulfillment of the need for the program and capacity building) as a whole is related to the success of the CSR program. This can be seen also from the equality of values between gender and success at 80%.

## **5. Conclusions And Suggestions**

### **5.1. Conclusions**

Based on the results of the study after conducting the results of research and discussion then the following conclusions can be drawn as follows:

1. Implementation of CSR programs that have been implemented by the company for the community surrounding the company includes four major programs of education activities, health activities, social and community economic activities and programs of activities in the field of security and public order and the environment
2. Characteristics of individual beneficiaries of CSR programs based on age, marital status, education level, type of business or activity, and income level that access the most CSR program implementation is women compared with male gender.
3. There is no relationship between individual characteristics and gender equality in terms of access, program management and benefits received.
4. There is a relationship between gender equality in terms of access, program management and benefits received with the success rate of the CSR program that has been implemented that includes the fulfillment of the needs of the respondent (beneficiary) and the fulfillment of the beneficiary capability improvement.

### **5.2. Sugestion**

Based on the results obtained it can be submitted some suggestions that are expected to be useful for practical purposes and for the benefit of further research. The study found that;

1. Implementation of CSR programs that have been implemented by the company for the community around the company consisting of educational activity program, health program activity, social and community economic activity program and activity program of security and public order and environment when implemented there are still many sub programs that still have a lot of charity or assistance compared with the empowerment; in the future CSR programs prior to implementation need to be mapping of the nature of long-term empowerment (sustainable) so that the benefits of the program will be felt in both in improving the quality of life and capacity building as well as increasing the economic added value for the access of the program, each potential user.
2. For the government, provide reference to formulate regulations on the implementation of CSR so as to support the district government's program in community empowerment so as not to overlap between programs of inter-corporate activities beneficiaries, especially in family empowerment that is gender responsive eg through corporate CSR forums program
3. For companies to implement CSR programs that gender equality can be because it will be able to further improve the success of CSR programs that are implemented

## **References**

- [1]. Badaruddin, 2007, Corporate Social Responsibility: Tinjauan Konseptual dan Implementasi, disampaikan dalam rangka Focused Group Discussion (FGD) Corporate Social Responsibility (CSR) berbasis HAM
- [2]. Effendi, Muh Arief, CSR Melalui Community Development, <http://www.suarakaryaonline.com> diakses tanggal 28 Oktober 2013
- [3]. Fajar Nussahid, Praktik Kedermawanan Sosial BUMN : Analisis terhadap Model Kedermawanan PT.Krakatau Steel, PT.Pertamina dan PT.Telekomunikasi Indonesia, Jurnal Galang Vol.1 No.2, Januari 2006 hal.5

- [4]. Ferdinand, Augusty. 2006. *Structural Equation Modelling Dalam Penelitian Manajemen*. Edisi Empat. Semarang: Badan Penerbit Universitas Diponegoro.
- [5]. Ghozali, Imam. 2006. *Analisis Multivariate dengan Program SPSS*. Edisi Ke 4. Badan Penerbit Universitas Diponegoro : Semarang.
- [6]. Hadi Noor, 2011, *Corporate Social Responsibility*, Cetakan ke 1, Graha Ilmu, Yogyakarta,
- [7]. Hubeis AVS, 2011. *Pemberdayaan Perempuan dari Masa ke Masa*. Bogor [ID]: IPB Press
- [8]. Pitaloka, Dyah ,2008, *Memperkuat CSR, Memberantas Kemiskinan*, [http:// www.suaramerdeka. com/ harian](http://www.suaramerdeka.com/harian)) diakses 16 Nopember 2013
- [9]. Prastiwi, Debbie Luciani. Dan Sumantri Titik, 2012, *Analisis Gender terhadap Tingkat Keberhasilan Pelaksanaan CSR Bidang Pemberdayaan Ekonomi Lokal PT Holcim Indonesia Tbk* Jurnal Sosiologi Pedesaan | April 2012, hlm. 97-111 diakses 28 Oktober 2013
- [10]. Simorangkir O.P, 2003., *Etika : Bisnis, Jabatan dan Perbankan Rineka Cipta*, , Jakarta
- [11]. Suharto, Edi, 2010, *CSR & COMDEV, Investasi kreatif perusahaan di Era Globalisasi*
- [12]. Undang-undang No. 19 Tahun 2003, tentang BUMN Pasal 2 butir e .
- [13]. Wibisono Yusuf, 2007, *Membedah Konsep dan Aplikasi CSR*, CV.Ashkaf Media Grafika
- [14]. Widayat dan Amirullah, 2002, *Riset Bisnis*, Edisi Pertama, Graha Ilmu, Yogyakarta.

# Morphemes In The Ternate Malay Language: A Morphology-Semantic Studies

Sunaidin Ode Mulae

Lecturer in Culture and Literature Faculty Khairun University  
Email: idin\_suna@gmail.com

**Abstract.** In context historically north maluccas province actually have one local language that be tool communication for all the etnict, namely, Ternate Malay language (TML). This studies entitled “Morphemes In Ternate Malay Language: A Morphology- Semantic Studies”, The purpose of the study to analyze the functional morphemes in Ternate Malay Language (TML) used a descriptive method to know heterogeneous functional morphemes in Ternate Malay language. Funtional or grammatical morphemes in Ternate Malay language have differences form and mean in affixes forms if to see of morphological and syntactical studies. The researcher finds provide interesting hints to be applied in the field of comparative studies. Our data seem to confirm that contextual information, rather than morphological information are relevant in the understanding of derivation affixes and this could be taken as a confirmation on comparative language obvservation. In Ternate Malay language consists of funtional or grammatica morphemes. Ternate Malay language can be categorized as one of the most popular language in north Maluku province. This language is used so many the peoples in north Maluku province for communication everyday. There are functional morphemes in Ternate Malay language, such as: {so}, {mo}, {ba} ,{pe}, {ma}, {akang}, {kong}.

**Key words:** *Functional morphemes, Ternate Malay Language (TML), North Maluku Province*

## 1. Introduction

Province North Moluccas is an archipelago in which consist of some islands, multiethnic and multilocal language, can founded of variety the local language. The local languages consist of 34 language in which of 25 still active, and 15 is not active again. In context historically north maluccas province actually have one local language that be tool communication for all the etnict, namely, Ternate Malay language (TML). Ternate Malay is a variety of Malay spoken on the island of Ternate, a small island in the eastern part of the Indonesian archipelago. It is one of the main language on the island. The majority of speakers live in Ternate town, where it is used as a mother tongue as well as the language of communication between people of various ethnic and linguistic background. Since, the sultanate of Ternate era, the Ternate local language (TL) to be tool comunication in which very familiar by called “kolano language or the sultanate language” for all the society in north maluccas province, likely, since 1950s years, when Indonesia freedom, Ternate local language (TL) exchanged to Ternate Malay Ternate (TML) until now, all the society more like is using Ternate Malay language (TML) for to be communication tool between all of ethnics. Ternate Malay language is one of language which to be as *lingua franca* in north maluccas province. This language gets the code-switching from Ternate local language (TL), also the local languages another, which there are in nort maluccas, and also Indonesia language.

From observation the researcher founded still little only from linguists, which want to interesting for the research its, more again about the word forms such as funtion(al) or grammatical morphemes. Consequently, the researcher will explore more so far about the Ternate Malay language (TML), and founded funtion(al) or grammatical morphemes, such as; {ba} + {lempar} to be *balempar*, {bi} + {kiapa} to be *bikiapa*, {so}+ {tarada} to be *sotarada* mean ‘to leave out’, {pe} + {tamang} to be *petamang* mean ‘have friend’, {mo} + {tidor} *motidor* mean ‘want to sleep’, {ma} + {nahang} *manahang* mean ‘hold back’, {ta} + {tahang} to be *tatahang* mean ‘endured’, {ta} + {pusing} to be

*tapusing* mean 'make dizzy', {Ambe} + {akang} *ambe akang* 'to take will' {Siapa} + {e} *siapa e* 'who is that', {Bagitu} + {e} *ba gitu e* mean 'so it is'.

However, a word is important in communicative competences the primarily is used by speaker or writer, it is used the words for recode meaning appropriate on the context. It can be occurs when a reader is reading a text, where he will use his ability to guess the meaning of a word. Particularly, the ability to guess the meaning of a word in which the human being has ability to interpret a sentence or an utterance. In this case, F.R Palmer (1974: 9) says "the word is an obvious element in the written language; we can without much hesitation accept it as an element of speech too". Traugott (1980: 8) uses the term the "creativity" of human language for his ability. He claims that "anyone who knows a language is able, without specific instruction, introduction, to produce and understand utterances which have been heard before but which are possible within system".

Recognize, the role of word is important in a sentence because a word can the explanatory sentence meaning primarily in using the word forms, in understanding the word formation processes, we have to know the structure of the words and meaning in which arranged in morphology structure. One of the important elements of a word is functional or grammatical morphemes. It plays very important role in sharing the complete meaning to the words. Some language in the world have grammatical form that difference between one than another or they are not the forms same in word. The different of the word forms can to be change the lexical mean in a language primarily understanding about functional morphemes. Therefore, the formulation of the Study namely (1) What is the functional morphemes in Ternate Malay language (TML)? (2) How do functional morphemes structure in Ternate Malay language? (3) How do grammatical morphemes processes in Ternate Malay Ternate?

### **1.1. The Objective of the Study**

1. To describe and analyze functional morphemes in Ternate Malay language.
2. To describe and to analyze grammatical morphemes formation process in Ternate Malay language.

### **1.2. Theoretical Outlines**

Theories are important parts in conducting a research in order to give guidance and comprehension on the subject analyzed. To analyzed the theoretical data, the writer conducts a theoretical documentation to formulate and conceptualize the existing theoretical overviews in accordance with the related issues of the research. Therefore, the theoretical discussion in this study includes some works written by linguists. For to morphemes process analyses is used theoretical Matthews (1979), Ramlan (1985), Kridaklasana (1994), Parera (1994), and Samsuri (1994); For to analysis the kinds of verbs is used theoretical Robins (1979), Givon (1984), and Alwi et al. (1998); For to analysis functional morpheme and word-formation processes is used theoretical Zapata, A.Argenis,

## **2. Method**

This study uses the descriptive method, in which is a method which uses the empirical facts in order to get factual result. According to Ranjit (1999 : 9), the descriptive research attempts to describe systematically a situation, problem, phenomenon, service program, and provide toward an issue. In this case, Sudaryanto (1993 : 62) added that " *metode deskriptif yaitu metode yang dilakukan berdasarkan fakta yang ada atau fenomena empiris sehingga hasil yang diharapkan berupa paparan yang apa adanya*" in which means that descriptive method is conducted based on the facts or empirical phenomenon in order to get factual result. Therefore, very relevance with the language, the descriptive research is intended to describe systematically, factually, and accurately about the fact of the language phenomenon. They are several steps of collecting data in which are conducted for this study. For detailed elaboration we can see such as:

- (1) The first step the writer will doing the way face to face or observation as step the effort for collected the source Ternate Malay language from native speaker.
- (2) The second step is clasification base morphemes in Ternate Malay language.
- (3) The last step is analyzing data base morphemes presupposed by morphologically.

The method is used descriptive with substitution technique. According to Djajasudarma (1993:62) there are seven technique of analysis the distributional technique. They are deletion, substitution, intrusion, expansion, permutation, repetition and paraphrase. The substitution technique is most appropriate for the topic in the ways to look for the meaning of the affix derivation in English

and Ternate Malay language (TML) and if the substitution can not be done, Mathews' theory is applied. Mathews (1979: 124-125) says that in word formation, there is a term in which familiar, namely, morphonemis process.

### **2.1. Technique and Data Collecting**

Technique collecting of data sources has been performance the data Ternate Malay language is taken from sources native speaker (orginally informan), local songs, newspaper Malut Post, and researcher alone. Futhermore, in collecting the data in the field, the researcher take care the clasification of data based on object research, the data hoped the collected by good and more validity. This studies makes the Ternate Malay language as its data source. Primarily, native speaker as source orginally informan, songs of local and is used in collecting the data in the field divide; participants 22 of peoples, 22 of local songs, and researcher alone as uses.

### **2.2. Theoretical Background**

Morphology is the study of word formation, of the structure of words, some observations about words and their structure, some words can be divided into parts which still have meaning, many words have meaning by themselves, but some words have meaning only when used with other words. Some of the parts into which words can be divided can stand alone as words. But other can not. These word parts that can occur only in combination must be combined in the correct way.

### **2.3. Word**

A word as defined by O'Grady (1996:132) is the smallest free form found in language. Biber et al. (1999: 51) note that the words are basic element of language. based on form those two definition, it can be concluded that the word is the smallest of meaning unit in which can be arranged into a phrase, clause or sentence to convey meaning. So, the word is an obvious element in the written language, without much hesitation accept it as an element of speech too. Some linguists have been concerned with the precise definition of the word and have even doubted whether it is an essential unit of grammar. (Palmer, 1974: 9). Futhermore, we can say is a word have affixes process in unit of grammaticaly of sentence, in which meaningful as an essential unit of grammar. The word is perhaps the linguistic unit most familiar to us, for to know about word needed knowledge to morphology.

### **2.4. Morphology**

Morphology is part of from the language science in which talking or studying the base structure word where the change influence word structure toward parts and meaning word ( Ramlan, 1980 : 2). Verhaar (1982:52) says that linguistic of branch that studied the arrange grammatical of word. Based on the two define above that morphology is talking about word form, the change word formation that the influenced by the smallest of unit grammatical meaning in the word. Badudu (1996: 4) give define more simply but yet more clearly to relate between morphem and word. His according to that morphology is the science that talking morphem then how the morphem formed to be word. This definiton the same also according to Nida (1963: 1) that morphology is the study of morphemes and their arrangements in forming words. So, Morphology is the study of how words are structured and how they are put together form smaller parts.

### **2.5. Morpheme**

A morpheme can be defined as a minimal unit having more or less constant meaning and more of less constant form. Necessary to explained which the main morpheme and its kinds, namely, The word is the smallest meaningful unit, the smallest unit with meaning is actually the morpheme. A word may be up of several morphemes. Words are not only analyzable but they also have internal structure according to which their components are related to each other. From definition of morphology that said by Verhar, Badudu, Ramlan can knowing with very clearly that morpheme is the minimal linguistic unit which has a meaning or grammatical function. According to Bloomfield (1933:161) that morpheme is a linguistic form which bears no partial phonetic semantic resemblance to any other form. So, according to Bloomfield word form above form it is such as; *bird, play, dence, -y, -ing* are morpheme. The same homonimy, like; *pear, pair, pare*. the same only in sound, it is not in the meaning. (Sutiono, 2004).

So, Morpheme is the minimal linguistic unit which has a meaning or grammatical function. In English, for example, the word; *ripens* consists of three morphemes, *ripe + en*. *En* is a morpheme which changes adjective into verb; *ripe* is an adjective. But *ripen* is a verb. *Ripens* is still a verb; the morpheme *-s* indicate that the subject of the verb is third person singular and that the action is neither past nor future. According to Nida, Elson and Pickett that is said by Hockett more important in talking

morpheme. Hockett says that (Elson and Pickett, 1976: 7), morpheme is the smallest individually meaningful elements in the utterances of a language. The definition that is said by Hockett the same of way by statement Nida (1963: 6) such as: one of the first talks which comfort the linguist in examining a new language with a view to discovering and describing its structure is the identification of the minimal meaningful units of which the language is composed. These minimal units are called “morphemes”,... the example word boyish and maddening that consists of one element; *boy-ish, mad-en* and *-ing*. (Sutiono, 2004).

Based on the two definition above then Badudu (1994 : 66) said that “*morfem ialah bentuk bahasa yang terkecil yang tidak dapat dibagi menjadi bagian-bagian yang lebih kecil*”. This definition emphasizes the morpheme have the little form that it is not divided to be parts the smallest. Furthermore, Samsuri (1993:170) emphasizes that the form composite smallest the same or reduplicate of similarly. The two definition had to explain that morpheme is the smallest of unit in the words that the form can be reduplication or composite the same in which have lexical meaning. In Ternate Malay language there is form of words, like; {mo} + {ambe}----→ *mo ambe* /‘want to take’/, {mo} + {lia}--→ *mo lia* ‘want to see’. it can be said that mo is morpheme, in which lexical meaning ‘want’, mo also is called ‘allomorph’. Term morpheme has been defined as ‘ a minimal unit of meaning or grammatical function’ to show in Ternate Malay language, like; {mo}+{tidor}, ---→ *mo tidor* ‘ want to sleep’, {so}+{dapa} ----→ *so dapa* ‘already to take’, {ba}+{pisa} -----→ *so pisa* ‘already to separate’.

Functional or grammatical morpheme in Ternate Malay language, such as; {so},{mo},{ba},{pe},{bi},{ma},{kong},{akang},{e},{tu}. As we know that functional or grammatical morpheme are free morpheme which have little or no meaning on their own, but which show grammatical relationships in and between sentence. For instance, in a language, these morphemes are represented by prepositions, conjunctions, articles, demonstratives, auxiliary verbs, pronouns; e.g., in English, *with, but, the, this, can, who, me*. (Zapata, 2007). Based on functional or the kinds of morpheme it can notice that there are called grammatical morphemes or free morpheme where the both morphemes are called functional or grammatical morpheme. When they are attached to other morphemes they change the meaning or the grammatical function of the word in some way, as just seen, in which morpheme are called in Ternate Malay language, for example; *so mo biking akang to*, in which has grammatical morphemes *so, mo, akang*, and one verb *biking*, has meaning ‘to make’.

Consequently, we know that morpheme difference with words, according to Bloomfield, (1993:178) says that morpheme is “*a minimum free form*”. But according to Elson & Pickett, (1976: 7) that the smallest of element that can be utterance alone. Moreover, Elson & Pickett says that the morpheme is likely a word or part then word, in Ternate Malay language, the words like; *tusa, kadera*, are the singular morpheme can not be change again. Yet, word *tusa tu* consists of two morpheme, namely base morpheme *tusa* and morpheme *tu* where it has mean alone.

## 2.6. Functional morphemes in Ternate Malay Language

Functional or grammatical morphemes are free morphemes which have little or no meaning on their own, but which show grammatical relationships in and between sentence. For instance, in a language, these morphemes are represented by preposition, conjunction, article, demonstratives, auxiliary verbs, pronouns; e.g., *with, but, the, can, who, me*. It should be said that functional words are almost always used in their unstressed form. (Zapata : 2007) ).

In Ternate Malay language, functional or grammatical morpheme very important and have lexical meaning words, like; *so makan* is differ mean with; *mo makan*, very differ mean again with, *makan to*. According to, Ramlan (1985:50) that said morpheme is “*suatu satuan gramatik terikat yang di dalam suatu unsur yang bukan kata dan bukan pokok kata, yang memiliki kesanggupan melekat pada satuan-satuan lain untuk membentuk kata atau pokok kata baru*”. Forms in Ternate Malay language such as; *akang, kong*, in word such as; *ambe akang, Kanapa kong*, all each other is said functional or grammatical morpheme because its forms is direct element that have mean to attached to the word.

Consequently, in Ternate Malay language also have similarly that important facts about the ways in which functional morpheme join with their expression in word. For example, *akang* and *kong* followed by verbs, for example, to adjective or nouns, we can add base verb of *ambe, baca, cari, lia, nae*, with the followed by grammatical morphemes *akang* and *kong*, such as; *ambe akang, baca akang, cari akang, lia kong, nae kong*, are all adjective words, and also, in Ternate Malay language



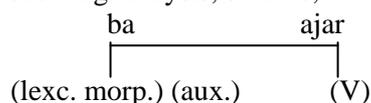
In sentence above the form verb clearly differ between verb in English or another language. They can function as main verb in verb phrase. The sentence above analysis finding functional lexical mean of morphemes the same with auxiliary word that can be free or independent morphemes. Functional or grammatical morpheme in Ternate Malay Language above has characteristics difference towards morphological characteristics findings lexical verbs varied form tense, aspect and voice. Then, semantic characteristics; lexical verbs occur as the head main verb of verb phrase in semantic characteristics and also lexical verbs denote action, processes. Huddleston (1985:124) point out that the most central members of the word-class verb have two kinds of properties as follows: inflection; they are tense, they have one or other inflectional properties past tense and present tense and functional potential, they function as the ultimate head of the clause. In sentence Ternate Malay Language above seem that functional or grammatical morphemes differ with English or another that form in words.

Consequently, Robins (1979:259-261) says that “*penggolongan kata harus didasarkan pada ciri morfologis dan perilaku sintaksis*”. Moreover, Givon (1984:64-73) says that “*untuk menentukan sebuah kata berkategori verba atau bukan dapat dilihat dari ciri semantis, morfologis dan sintaksis*”. From this definition the verb can be seen from the semantic characteristics, morphology characteristics, and syntactic characteristics. According to the semantic verb features is seen for experience codes, events and acts; and morphology view can be seen by signs with affix added; and syntactic verb features is seen a fundamental fact about words in all human languages is that they can be grouped together into a relatively small number of classes is called syntactic categories (O’Grady,1993:182).

Moreover, point out general classification of words, the classes are divide into two groups content words and function words. content words are those which can contribute substantially to the meaning of the sentence, including noun, verb, adjective, and adverb. While, function words include determiner, preposition, conjunction and auxiliary. Those words influence the structure and meanings of the sentence though are the smaller. This statement agree with according to Alwi, *et al* (1998:87) says that “*ciri-ciri verb dapat diketahui dengan mengamati (1) perilaku semantis, (2) bentuk morfologis, (3) perilaku sintaksis*”. Yet, in a manner verb can be identification and added from word-class others primarily with adjective, because this characteristic as bellow: (1) the function of verb as predicate or core predicate in sentence, for example in Ternate Malay language:

(2) Dorang balajar skarang.  
(grammatical morpheme)+ V

or can showing analysis, such as;



Morphological : ba = [ lexical morpheme].

Semantic : ajar [ verb word, student + teacher ].

In sentence above where verb have free morphemes such as; {ba} in word form *lari*, and *ajar*. Forms verb *balajar* and *ba lari* above have function as predicate core, the verb have mean inherent action, processes, situation. In conclusion to classify a word into syntactic categories we can analyze it based on its function, its morphology, and its meaning, the word class can be determined. Still the sentences will analysis is used lexical morphemes seem form such as:

(3) Kita solari akang ngana trus moambe ngana ulang.

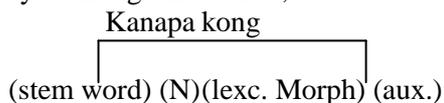
[ so ]	[lari]
( lexc.morph)(aux.)	(V)

and,

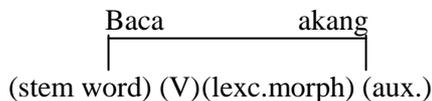
[mo]	[ambe]
(lexc.morph) (aux.)	(V)



can showing analysis in digram such as;



and,



In sentence above each stem word contains only one direct which follows the auxiliary for fill position of direct object (Od) which put the stem word in the sentence. In sentence above noun *kanapa* contains only one direct in which follows the auxiliary the fill position of direct object (Od) in which put in the sentence into mono transitive group. From the sentences *baca* above shows that complex transitive verbs, put and followed by adverbials upstairs *akang*.

For clearly about funtional or grammatical morphemes the researcher give explaining processes about [so], [pe], [mo],[ba],[kong],[akang] based on tables form. The grammatical morphemes Ternate Malay language [so] can only occur the words consonant [t], [l], [b], [k], [p], [j], [s],[h] and [c].

Tabel 3. Grammatical morpheme [so] Ternate Malay.

Grammatical morpheme	So + V	Mean	So + N	Mean
So	So ambe	Have taken	So sone	Had died
	So tarada	No again	So hidop	Had live
	So lia	Have seen		
	So buat	Have made		
	So kaweng	Have married		
	So bagi	Have divided		
	So jual	Have bought		
	So jawab	Have answered		
	So cari	Have looking for		
	So curi	Have steal		
	So hampir	Have almost		

The grammatical morphemes Ternate Malay language [mo] can only occur in the words such as;

Tabel 4. Grammatical morpheme [mo] Ternate Malay.

Grammatical morpheme	mo + V	Mean	mo + N	Mean
mo	mo ambe	Want to take	mo sone	want died
	mo jalang	Want to go	mo hidop	want live
	mo lia	Want to see		
	mo buat	want to make		
	mo kaweng	Want married		
	mo bagi	want divide		
	mo jual	Want to buy		
	mo jawab	want answee		
	mo cari	want looking for		
	mo curi	want steal		

mo hampir	Want to almost
mo bale	Want back
mo tidor	Want sleep
mo angka	Want up
mo pukul	Want strike
mo inja	Want running board
mo hantam	Boxing
mo makan	Want to eat
mo saring	Want to filter
mo bilang	Want to say

**Tabel 5.** Grammatical morpheme [ba] Ternate Malay.

Grammatical morpheme	ba + V	Mean	ba + N	Mean
ba	ba ambe	to take		
	ba jalang	to go		
	ba lia	to see		
	ba lempar	to throw		
	ba kaweng	to married		
	ba bagi	to divide		
	ba jual	to sale		
	ba jawab	to answer		
	ba cari	looking for		
	ba curi	to steal		
	ba bale	to back		
ba masa	To cook			

**Tabel 6.** Grammatical morpheme Ternate Malay [pe].

Grammatical morpheme	pe + V	Mean	pe + N	Mean
pe			pe nama	Have name
			pe tamang	Have friend
			pe aba	Have father
			pe mama	Has mother
			pe ana	Have son
			pe ade	Have younger brother
			pe kaka	Have brother
			pe kabar	Have news
			pe rumah	Have home
			pe kampung	Have village
			pe buku	Have book
			pe parau	Have boat

**Tabel 7.** Grammatical morpheme Ternate Malay [akang]

Grammatical morpheme	akang + V	Mean	akang + N	Mean
akang	ambe akang	Will taking		
	baca akang	Will reading		
	cari akang	Will looking for		
	dengar akang	Will listening		
	gali akang	Will bogging		
	lia akang	Will see		
	hidop akang	Will turn on the lamp		
	lampu			
	mati akang	Will turn off the lamp		
	tindis akang	Will press		
	angka akang	Will up		
	jumla akang	Will sum		
	tamba akang	Will add		

### 3. Conclusion

In conclusion, our data showed that functional or grammatical morphemes in Ternate Malay Language (TML) have the differences form with English or another language. Ternate Malay language is one of language which to be tool of communicate between all ethnic or as *lingua franca* in north maluccas province. This language is code-swicthing from Ternate and indonesia language.

Funtional or grammatical morphemes in Ternate Malay language have differences form and mean in affixes forms if to see of morphological and syntactical. We are finding provide interesting hints to be applied in the field of comparative studies. Our data seem to confirm that contextual information, rather than morphological information are relevant in the understanding of derivation affixes and this could be taken as a confirmation on comparative language obvservation. In Ternate Malay language consists of funtional or grammatica morphemes, such as; {so}, {pe}, {mo}, {ba},{kong}, {akang}.

### Bibiliography

- [1]. Aarts, Flor and Jan Aarts. 1988. *English Syntactic Structure, Fuction and Categories in Sentence Analysis*. London: Prentice Hall and Martinus Nijhoff.
- [2]. Biber, Douglas et. Al.1999. *Longman Grammar of Spoken and Written English*. England: Pearson Education Limited.
- [3]. Baker, L.C.1978. *Introduction to generative Transformational Syntax*. New Jersey: Printice-Hall, Inc.
- [4]. Celce, Murcia.1999. *The Grammar Book. United States of America*: International Thomson Publishing, Inc.
- [5]. Chaer, Abdul.2008. *Morfologi Bahasa Indonesia (Pendekatan Proses)*. Jakarta: Penerbit Rineka Cipta.
- [6]. Chaer, Abdul.2007. *Leksikologi & Leksikografi Indonesia*. Jakarta: Penerbit Rineka.
- [7]. Chaer, Abdul. 2007. *Kajian Bahasa*. Jakarta: Penerbit Rineka Cipta.
- [8]. Chaer, Abdul. 2009. *Sintaksis Bahasa Indonesia*. Jakarta: Penerbit Rineka Cipta.
- [9]. Deterding, David H & Poedjosoedarmo, Gloria R. 2001. *Grammar of English*. Singapore: Prentica Hall.
- [10]. Djajasudarma, F.T. 2009. *Semantik. 1*. Bandung: Retika Aditama.
- [11]. Djajasudarman,F.T. 2009. *Semantik 2 Pemahaman Ilmu Makna*. Bandung Retika Aditama.

- [12]. Faizah, Hasnah. 1999. *Afiks Verba Aktif Bahasa Limo Koto Bangkinang (Kajian Morfosintaksis)*: Bandung: Program Pasca Sarjana Universitas Padjadjaran.
- [13]. Homby, A.S.2003. *Oxford Advanced Learners' Dictionary*. London: Oxford University Press.
- [14]. Kridalaksana,H.2001. *Kamus Linguistik*. Jakarta: PT. Gramedia Pustaka Utama.
- [15]. McManis et al.1987. *Language Files*. Ohio: The Ohio State University Departement of Linguistics.
- [16]. Muhammad.2011. *Metode Penelitian Bahasa*. Jogjakarta: Ar-ruzz .Media
- [17]. Mahsun. 2011. *Metode Penelitian Bahasa*. Edisi Revisi. Jakarta: PT RajaGrafindo Persada.
- [18]. O'Grady, William et al.1993. *Contemporary Linguistics: An Introduction*. Canada: Corp. Clark Pitman, Ltd.
- [19]. Palmer,F.R.1965. *The English Verba*. London: Longman Group Limited.
- [20]. Putra, B.I.2010. *Analisis Kalimat*. Fungsi, Kategori, dan Peran. Bandung: Retika Aditama.
- [21]. Pateda, M.1988. *Linguistik (Sebuah Pengantar)*. Bandung: Angkasa.
- [22]. Ramlan.2005. *Sintaksis*. Yogyakarta: CV Karyono.
- [23]. Richards, Jack.1985. *Longman Dictionary of Applied Linguistics*. Essex: Longman Group Limited.
- [24]. Sutiono,M.2004. *Afiks Inflektif Pada Verba Bahasa Indonesia dan Bahasa Inggris (Sutau Kajian Komparatif)*: Bandung. Uvula Press.
- [25]. Sutiono, M.2001. *Bahasa Besemah*. Bandung:. Uvula Press.
- [26]. Sugiono.2011. *Metode Penelitian Kuantitatif kualitatif dan R & D*. Bandung: CV Alfabeta.
- [27]. Todd, L.1987. *An Introduction to Linguistics*. England: Longman York Press.
- [28]. Thomas, Linda. 1988. *Beginning Syntax*. USA: Cambridge, Massachusetts.
- [29]. Takaria, D.2010. *Kamus Melayu Ambon-Indonesia*. Jakarta: PT. Dian Rakyat.
- [30]. Tarigan, G.H.1984. *Pengajaran Morfologi*. Bandung: Penerbit Angkasa Bandung.

#### LIST OF TABLES

Tabel 1. Ternate malay language Functional morphemes process.....	
Tabel 1. Grammatical morpheme [ so ] Ternate malay.....	
Tabel 2. Ternate Malay Language Gramatical morpheme process.....	
Tabel 2. Grammatical morpheme [ mo ] Ternate Malay.....	
Tabel 3. Grammatical morpheme [ ba ] Ternate Malay.....	
Tabel 4. Grammatical morpheme [ pe ] Ternate Malay.....	
Tabel 5. Grammatical morpheme [akang] Ternate Malay.....	

#### LIST OF ABBREVIATIONS

Aux	: Auxiliary verb
Lex.Morph	: Grammatical morpheme
Lexc.Morph	: lexical morpheme.
TML	: Ternate Malay Language
TL	: Ternate local language
V	: Verb (stem word)

# The Influence of Internal Control Effectiveness, Reasonable Compensation, Asymmetric Information, Integrity and Individual Morality on Accounting Fraud Tendency (A Study conducted at the South Halmahera Regency's Regional Working Units (SKPD))

Suriana AR Mahdi<sup>1</sup>, Remiyati Ansar<sup>1</sup>, Nurmala Lanuhu<sup>1</sup>

<sup>1</sup>Khairun University

Email : Suriana.armahdi@gmail.com, anto.tox78@gmail.com, nurmаланuhu@gmail.com

**Abstract.** This research aims at examining the Effectiveness Influence of Internal Control, Compensation Compliance, Asymmetric Information, Integrity and Individual Morality on accounting fraud tendency. The research population covers all heads of Regional Working Unit (in Indonesia known as Satuan Kerja Perangkat Daerah/SKPD), secretaries, financial administration employees, revenue-receiving treasurers and budgeted fund-expending treasurers serving at 24 SKPD in South Halmahera Regency. The samples are collected using Proportionate Random Sampling with the sample number of 52 respondents as the primary data. The research data are then analyzed using a multiple linear regression. The result shows that internal control effectiveness does not influence fraud accounting tendency; reasonable compensation does not influence accounting fraud tendency; asymmetric information does not influence accounting fraud tendency; integrity negatively influences accounting fraud tendency; and individual morality does not influence accounting fraud tendency

**Keywords :** *accounting fraud tendency, internal control effectiveness, reasonable compensation, asymmetric information, integrity, and individual morality*

## I. Introduction

### 1.1 Background

To support the realization of good governance on the implementation of local government services, it is necessary to professionally, transparently, and accountably organize the financial management to be properly presented without containing fraud (Najahningrum, 2013) that the financial statement is trusted and used as the basis for decision making. In fact, there are many arising fraud cases related to the financial statements in the government entities.

The result of a study conducted by Indonesian Corruption Watch (ICW) has proven that in 2014 there were 629 various types of corruption cases, such as bribery, authority and financial abuse as well as data forgery (Dewi and Ratnadi, 2017). Meanwhile, In North Maluku Province, the corruption cases dealing with the project budget for Fida transportation roads in East Gane District of South Halmahera Regency which has involved the former Head of Manpower and Transmigration Service (in Indonesia known as *Nakertrans*), the former Head and Secretary of South Halmahera Regency's Public Works Office for making a false report related to the 2012 project resulting in the state loss reaching IDR 1,081,375,723 ([www.malutpost.co.id](http://www.malutpost.co.id)).

The aforementioned fraudulent actions are due to the organization's internal control weak level. According to Artini *et al.* (2014), if an institution's internal control is weak, it may provide opportunities for the fraud perpetrators to perform the fraudulent actions. Thus, in order to prevent from the fraudulent actions, an institution should be able to improve its internal control effectiveness that the possible accounting fraud may be minimized. The research conducted by Rahmawati (2012) shows that the internal control effectiveness influences the accounting fraud tendency. In addition to the internal control effectiveness, the reasonable compensation may also influence the accounting fraud tendency.

Lailiyah (2016) explains that reasonable compensation greatly influences the employees' conduct and performance. Herzberg's theory strongly states that reasonable compensation is considered as a supporting factor to achieve the employees' higher performance, not the extrinsic factors, such as compensation received by the employees from the organizations where they are working. In fact, the supporting factor for the employee's higher or better performance is the intrinsic factors coming from the employees' self awareness. The result of research conducted by Zilmy (2013) states that the reasonable compensation influences the accounting fraud tendency.

In addition to internal control effectiveness and reasonable compensation, the accounting fraud tendency may also be influenced by asymmetric information. Within the government scope, the asymmetric information occurs between the legislative party (Indonesian Regional House of Representative or known as *DPRD*) and the executive party (Local Government), in which the main principle in this case is that the legislative party does not have sufficient information regarding to the agent's performance, in this case is executive party. Legislative party has never been sure how the executive party's efforts may provide contributions to the actual results of a government organization (Zilmy, 2013). The result of research conducted by Amalia (2015) states that asymmetric information influences the accounting fraud tendency.

Schlenker's (2008) argues that integrity is one factor influencing the accounting fraud tendency. Integrity is a strong personal commitment to the ethical ideological principles and become a self-concept part shown through behaviors (Dewi & Ratnadi, 2017). Thus, if a person is able to maintain his integrity, then he will not take any action violating the ethical codes, such as accounting fraud. Based on the Kohlberg's moral development theory (1971), it can be concluded that the higher the morality of an individual, then the individual will tend to avoid the unethical conducts, such as fraud. The result of research conducted by Zilmy (2013) states that morality influences the accounting fraud tendency.

Many researches are conducted in the government scope related to the influence of internal control effectiveness, reasonable compensation, asymmetric information, integrity and individual morality to the accounting fraud tendency, for example, the research conducted by Rahmawati (2012), Zilmy (2013), Artini *et al.* (2014), Noviriantini *et al.* (2015), Amelia (2015), Indriastuti *et al.* (2016), Junia (2016), Lailiyah (2016), Rahmaidha (2016), Bartenputra (2016), Downida & Riharjo (2017), Dewi, et al (2017), Dewi & Ratnadi (2017), and Dewi (2017). Due to the different research results, this research is developed from that conducted by Zilmy (2013) who examines the influence of reasonable compensation, asymmetric information, and morality to the accounting fraud tendency. This research is considered different from the previous researches based on: **First**, this research adds two more variables from the previous ones: internal control effectiveness and integrity. **Second**, the research object conducted by Zilmy (2013) is at the Regional working units (*SKPD*) of Padang, while this research is conducted at the Regional working units (*SKPD*) South Halmahera Regency. **Third**, the research conducted by Zilmy (2013) employs a total sampling technique, while this research uses a proportionate random sampling. The explanations above show that there are various research phenomena, inconsistencies and differences from the previous researches that the researchers are interested in conducting a research entitled "The Influence of Internal Control Effectiveness, Compensation Compliance, Asymmetric Information, Integrity and Individual Morality on Accounting Fraud Tendency (the Regional working units (*SKPD*) of South Halmahera Regency "

## 1.2 Research Problem and Objective

Based on the aforementioned background, the research problem is formulated whether internal control effectiveness, reasonable compensation, asymmetric information, integrity, and individual morality influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Based on the formulated research problem, this research aims at examining the influence of internal control effectiveness, reasonable compensation, asymmetric information, integrity, individual morality on the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency.

## 1.3 Research Significance

The research result may provide various benefits to the regional working units (*SKPD*) of South Halmahera Regency as the information materials due to the causes of the performed accounting

fraud activities that the regional working units (SKPD) of South Halmahera Regency may take preventive actions related to the accounting fraud activities. This research may also become a reference for the future researchers interested in examining the accounting fraud activities.

## 2. Research Method

### 2.1. Research Approach

This quantitative research employs questionnaire as its instrument of questions distributed to respondents to determine the accounting fraud level at the regional working units (SKPD) of South Halmahera Regency District.

### 2.2. Population and Sample

The research population covers all parties receiving the delegation of authority and responsibility to involve in expending the budgeted funds and the persons in charge related to the financial report preparation in 24 regional working units (SKPD) of South Halmahera Regency with a total of 107 respondents. The research samples are collected using a Proportionate Random Sampling that the obtained samples are 52 respondents.

### 2.3. Type, Technique and Data Collection Source

The research data type is primary data with the data collection technique of questionnaires distributed to the respondents to fill out or answer. The research data source covers opinions or perceptions of the heads of regional working units (SKPD), secretaries, financial administration employees, revenue-receiving treasurers and budgeted fund-expending treasurers working at the regional working units (SKPD) of South Halmahera Regency on the accounting fraud through questionnaire distribution

### 2.4. Data analysis technique

The data are analyzed using a multiple linear regression technique with the following equation model:

$$Y = \alpha_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

Where:

Y = accounting fraud

X1 = Internal Control Effectiveness

X2 = Compensation Compliance

X3 = Asymmetric Information

X4 = Integrity

X5 = Individual Morality

$\alpha_0$  = Constanta

e = Standard Error

$b_1, b_2, b_3, b_4, b_5$  = Independent Variable Regression Coefficient

## 3. Result and Discussion

### 3.1. Descriptive statistics

The data shown in table 1 above show that those six research variables have the standard deviation values lower than their average values indicating that the data are well distributed.

### 3.2. Hypothetical Testing Result

The table 2 above shows the interpretation result of the regression analysis equation as follows:

The constanta value of 45.878 indicates that if the independent variables of internal control effectiveness, reasonable compensation, asymmetric information, integrity and individual morality are equal to zero, then the value of accounting fraud tendency is the same with the constanta value, that is, 45.878.

The internal control effectiveness variable (X1) has the regression coefficient of -0.064. This indicates that each decreasing internal control effectiveness unit may also increase the accounting fraud tendency by 0.064 assuming that reasonable compensation, asymmetric information, integrity and individual morality are equal to zero.

The reasonable compensation variable (X2) has the regression coefficient of -0.308. It indicates each decreasing reasonable compensation unit may increase the accounting fraud tendency

by 0.308 assuming that internal control effectiveness, asymmetric information, integrity and individual morality are equal to zero.

Asymmetric information variable (X3) has the regression coefficient value of 0.054. It indicates that each decreasing internal control effectiveness unit may increase the accounting fraud tendency by 0.054 assuming the internal control effectiveness, reasonable compensation, integrity and individual morality are equal to zero.

The integrity variable (X4) has the regression coefficient of -0.609. It indicates that each decreasing integrity unit may increase the accounting fraud tendency by 0.609 assuming that internal control effectiveness, reasonable compensation, asymmetric information, and individual morality are equal to zero.

Individual morality variable (X5) has the regression coefficient value of -0.100. It indicates that each decreasing individual morality unit may increase the accounting fraud tendency by 0.100, assuming that internal control effectiveness, reasonable compensation, asymmetric information, and integrity are equal to zero.

Based on table 2 above, the Adjusted R Square value is 0.140. Thus, it can be said that the influence of internal control effectiveness, reasonable compensation, asymmetric information, integrity and individual morality on accounting fraud tendency is 14.0%, while the rest (86%) is influenced by the other variables not included in this research. Based on table 4.19, it shows that the R value is equal to 0.473, meaning that the relationship between the variables under study are classified into medium category since its R value correlation ranging from 0.40-0.599 (Sugiyono, 2007: 257).

Based on table 2 above, it shows that  $F_{\text{count}} > F_{\text{table}}$  ( $2.655 > 2.42$ ) and the significance  $\alpha$  value is  $< 0.05$  ( $0.034 < 0.05$ ), meaning that the variables of internal control effectiveness, reasonable compensation, asymmetric information, integrity and morality individual simultaneously influence the accounting fraud tendency.

Based on Table 2 above, it shows that the internal control effectiveness variable has the p-value (significance) greater than 0.05 ( $0.649 > 0.05$ ). It means that the internal control effectiveness variable does not influence the accounting fraud tendency. Thus, the first hypothesis of this research is rejected. The reasonable compensation variable has the p-value (significance) greater than 0.05 ( $0.112 > 0.05$ ). It means that the reasonable compensation variable does not influence the accounting fraud. Thus, the second hypothesis of this research is rejected. The asymmetric information variable has the p-value (significance) greater than 0.05 ( $0.694 > 0.05$ ). It means that the asymmetric information variable does not influence the accounting fraud tendency. Thus, the third hypothesis in this study is rejected. The integrity variable has the p-value (significance) smaller than 0.05 ( $0.019 < 0.05$ ) with a negative direction. It means that the integrity variables negatively influence the accounting fraud tendency. Thus, the fourth hypothesis of this study is accepted. The individual morality variable has the p-value (significance) greater than 0.05 ( $0.659 > 0.05$ ). It means that individual morality variable does not influence the accounting fraud tendency. Thus, the fifth hypothesis in this study is rejected.

### **3.3. Discussion**

#### **3.3.1. Internal Control Effectiveness of and Fraud Accounting Tendency**

Based on the hypothetical testing result, it shows that internal control does not influence accounting fraud tendency. This research result is not inline with that conducted by Rahmawati (2012), Artini *et al.* (2014), Amalia (2015), Indriastuti *et al.* (2016), Rahmaidha (2016), Downida & Riharjo (2017), Dewi & Ranadi (2017), Dewi & Riharjo (2017) 2017), and Dewi (2017). However, this research result is in line with that conducted by Lailiyah (2016) stating that internal control effectiveness does not influence accounting fraud tendency. However, the accounting fraud tendency level at the regional working units (SKPD) of South Halmahera Regency is still low. It is proven with no respondents' answers which strongly agree or agree related to the accounting fraud tendency.

The low accounting tendency at the regional working units of South Halmahera Regency is because the regional working unit employees of South Halmahera Regency, especially those are directly involved in the preparation of financial reports have sufficient ability in good financial management that the accounting fraud tendency level may be suppressed. The employees' sufficient ability is obtained after joining the financial management training routinely conducted by the regional working units (SKPD) themselves of South Halmahera Regency. The trainings are provided for the

employees not only related to the financial management but also related to their understanding on the importance of ethics in financial management (Inggratubun *et al.*, 2017). Thus, it is in accordance with the behavior theory developed by Gage and Berliner who state that what someone has learned may influence his/her behaviors or, in other words, someone's behavior reflects what he/she has learned. Although the internal control at the regional working units (*SKPD*) is not yet effective or the employees directly involved in the preparation of financial reports are not frequently supervised while working, they do not misuse those conditions to make accounting fraud activities. They still maintain their ethical behaviors while working without doing any unethical or unlawful conduct, such as accounting fraud activities.

### **3.3.2. Compensation Compliance and Accounting Fraud Tendency**

Based on the hypothetical testing result, it shows that reasonable compensation does not influence the accounting fraud tendency. The research result is not in line with that conducted by Zilmy (2013), Amalia (2015), Indriastuti *et al.* (2016), Junia (2016), Dewi *et al.* (2017), and Dewi (2017) stating that reasonable compensation influences the accounting fraud tendency. However, the research result is in line with that conducted by Rahmawati (2012), Lailiyah (2016), and Bartenputra (2016) stating that reasonable compensation does not influence the accounting fraud tendency.

The reasonable compensation which does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency as the respondents still doubt the reasonable compensation provided by the regional working unit of South Halmahera Regency. This is because the salary received by employees has been adjusted to their position, rank or category that no compensation is given when gaining any achievement or the workload is greater than their main duties and functions. However, the accounting fraud tendency level at the regional working units (*SKPD*) of South Halmahera Regency is still low. Thus, this research result is in accordance with the Herzberg's motivation theory stating that what motivates or encourages the employees' performance lies on their extrinsic factors or what is given by the organization where the employees are working as well as their own intrinsic motivation factor to further improve their performance.

### **3.3.3. Asymmetric Information and Accounting Fraud Tendency**

Based on the hypothetical testing result, it shows that asymmetric information does not influence the accounting fraud tendency. This research result is not in line with that conducted by Zilmy (2013), Amalia (2015), Indriastuti *et al.* (2016), Bartenputra (2016), and Downida & Riharjo (2017) stating that asymmetric information influences the accounting fraud tendency. However, this research result is in line with that conducted by Rahmawati (2012) stating that asymmetric information does not influence the accounting fraud tendency.

Due to the asymmetric information, the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency is considered low. In fact, the employees at the regional working units (*SKPD*) of South Halmahera Regency are frequently given various trainings on financial management that in disclosing the local government financial report and implementing the budgeted fund is always based on the applicable rules without making any unethical activity, such as making accounting fraud activities. This is in accordance with the behavior theory developed by Gage and Berliner, stating that what someone has learned may influence his/her behaviors, or in other words that someone's behaviors reflect what he/she has learned. Thus, although there is asymmetric information in the related institutions, the employees still obey the rules based on the accounting standards in preparing the financial reports and do not take any advantage due to the conditions to make any accounting fraud activity.

### **3.3.4. Integrity and Accounting Fraud Tendency**

Based on the hypothetical testing result, it shows that integrity influences the accounting fraud tendency. This research result is consistent with the contingency theory, stating that integrity may influence the accounting fraud tendency. This research result is also in line with that conducted by Dewi and Ratnadi (2017), stating that integrity influences the accounting fraud tendency.

By frequently attending various trainings on financial management and its ethics, the employees, especially those are directly involved in the preparation of financial reports at the regional working units (*SKPD*) of South Halmahera Regency, may better understand the importance to obey any regulation, especially related to the financial management that the employees may always disclose the financial information in accordance with actually-made transactions.

### 3.3.5. Individual Morality and Accounting Fraud Tendency

Based on the hypothetical testing result, it shows that morality does not influence the accounting fraud tendency. This research result is not in accordance with the Kohlberg's moral development model (1971), stating that the higher the moral reasoning of an individual, the possibility of someone to make any accounting fraud activity will be smaller. This research result is also not in line with that conducted by Zilmy (2013), Noviriantini *et al.* (2015), Amalia (2015), Indriastuti *et al.* (2016), Junia (2016), and Dewi *et al.* (2017), stating that individual morality influences the accounting fraud tendency. However, this research result is in line with that conducted by Rahmawati (2012), stating that morality does not influence the accounting fraud tendency.

Due to the fact, the employees working the regional working units (*SKPD*) of South Halmahera Regency do not have high moral reasoning, while the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency are still relatively low. Thus, it can be concluded that the individual morality does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Although based on the respondents' answers on the ethical dilemma cases, it indicates that the employees do not have high moral reasoning, when working at the regional working units (*SKPD*) of South Halmahera Regency, they realize that making an accounting fraud is wrong that the employees do not make such activities since our moral thinking may not always predict our moral behavior. This research result is consistent with that conducted by Hook (1999) who has criticized Kohlberg's moral development model (1971). He argues that Kohlberg's theory puts too much emphasis on moral thinking and gives less attention to moral behavior. According to him, a person's moral reasoning may not always be applied to his/her moral behavior. What is said by someone as moral may possibly not appear in that person's behavior, and vice versa (Nurhayati, 2006).

## 4. Conclusion and recommendation

### 4.1. Conclusion

The internal control effectiveness does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Compensation compliance does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Asymmetric information does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Integrity negatively influences the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Individual morality does not influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency. Thus, simultaneously, the variables of internal control effectiveness, reasonable compensation, asymmetric information, individual integrity and morality influence the accounting fraud tendency at the regional working units (*SKPD*) of South Halmahera Regency.

### 1.1 Limitation and Suggestion

The variables used in this research may explain only 14.0%, while the remaining 86% may be explained by the other variables which are not included in this research. The variables used in this research may not fully explain the influence on the accounting fraud tendency. Thus, the suggestion provided for the future researches is to add the other variables which possibly influence the accounting fraud tendency, such as the accounting rule compliance.

There are only 52 samples in this research and 24 regional working units (*SKPD*) of South Halmahera Regency that future researches may add the population and samples by expanding the research object, for example using the population and samples of all financial management at the regional working units (*SKPD*) of North Maluku Province.

## References

- [1]. Amalia, Reda Dista. 2015. Pengaruh Efektivitas Pengendalian Internal, Kesesuaian Kompensasi, Moralitas Aparat, dan Asimetri Informasi terhadap Kecenderungan Kecurangan Akuntansi pada Pemerintah Daerah Kabupaten Siak Sri Indrapura. *Jom FEKON Vol 2 No 2*.
- [2]. Anti Corruption Clearing House. 2017. *Menyelisik Makna Integritas dan Pertentangannya dengan Korupsi*. <http://acch.kpk.go.id> (diakses 10 oktober 2017)

- [3]. Artini, Ni Luh Eka Ari. Adiputra, Made Pradana & Nyoman Trisna Herawati. 2014. Pengaruh Budaya Etis Organisasi dan Efektivitas Pengendalian Internal terhadap Kecenderungan Kecurangan Akuntansi pada SKPD Kabupaten Jembrana. *Journal Of Accounting* Vol 2 No 1.
- [4]. Bartenputra, Adrian. 2016. Pengaruh Kesesuaian Kompensasi, Ketaatan Akuntansi, dan Asimetri Informasi terhadap Kecenderungan Kecurangan Akuntansi pada SKPD Kota Bukittinggi. *Skripsi*. Program Sarjana Universitas Negeri. Padang (tidak dipublikasi).
- [5]. Buletin Mingguan Anti Korupsi. 2016. *Tren Korupsi 2015*. <http://www.antikorupsi.org> (diakses 13 april 2017).
- [6]. Damayanti, Dionisisa Nadya Sri. 2016. Pengaruh Pengendalian Internal dan Moralitas Individu terhadap Kecurangan Akuntansi pada Pegawai Bagian Keuangan dan Akuntansi Universitas Negeri Yogyakarta. *Skripsi*. Program Sarjana Universitas Negeri. Yogyakarta (tidak dipublikasi).
- [7]. Dewi, Chindy Kurnia Rahma. 2017. Pengaruh Pengendalian Internal, kesesuaian Kompensasi, Ketaatan Aturan Akuntansi dan Perilaku Tidak etis terhadap Kecenderungan Kecurangan Akuntansi pada SKPD Kabupaten bengkalis. *Jom FEKON Vol 4 No 1*.
- [8]. Dewi, Kadek Yuli Kurnia & Ni Made Dwi Ratnadi. 2017. Pengaruh Pengendalian Internal dan Integritas pada Kecenderungan Kecurangan Akuntansi Satuan Kerja Perangkat Daerah Kota Denpasar. *Journal Of Accounting Vol 18 (2):917-941*.
- [9]. Dewi, Komang Tri Kartika. Made Arie Wahyuni & Nyoman Trisna Herawati. 2017. Pengaruh Sistem Pengendalian Kas, Implementasi Good Governance, Moralitas Aparatur Pemerintah Daerah, dan Persepsi Kesesuaian Kompensasi Terhadap Financial Fraud pada SKPD Kabupaten Buleleng. *Journal Of Accounting Vol 7 No 1*.
- [10]. Downida, Antok Noven & Iksan Budi Riharjo. 2017. Analisis Faktor – Faktor yang Mempengaruhi Kecenderungan Kecurangan Akuntansi pada SKPD Kota Kediri. *Jurnal Ilmu dan riset Akuntansi Vol 6 Nomor 5*.
- [11]. Ikatan Akuntan Indonesia (IAI). 2001. Standar Profesional Akuntan Publik “Pertimbangan Atas Kecurangan dalam Audit Laporan Keuangan”. Standar Audit Seksi 316 (PSA No. 70).
- [12]. Indriastuti, Devy Ervina. Agusdin & Animah. 2016. Analisis Pengaruh Asimetri Informasi, Pengendalian Internal, Perspsi Kesesuaian Kompensasi, Moralitas Individu, dan Ketaatan Aturan Akuntansi terhadap Kecurangan Akuntansi. *Jurnal Infestasi Vol 12 No 2:115-130*.
- [13]. Inggatubun, Soadri. Puka-Puka, Marthen. Aisyah & Sahdan Mandar. 2017. Pernyataan Responden Mengenai Pelatihan Pengelolaan Keuangan di SKPD Kabupaten Halmahera Selatan.
- [14]. Junia, Nurmaharani. 2016. Pengaruh Moralitas Aparat, Kesesuaian Kompensasi, dan Ketaatan Aturaan Akuntansi terhadap Kecenderungan Kecurangan Akuntansi pada SKPD Kabupaten Kampar. *Jom FEKON Vol 3 No 1*.
- [15]. Lailiyah, Afidatul. 2016. Variabel – Variabel yang Berpengaruh terhadap Kecurangan di Sektor Pemerintahan. *Skripsi*. Universitas Jember (tidak dibuplikasi).
- [16]. Malutpost. 2015. *Mantan Kadis Nakertrans Halsel Resmi Ditahan*. <http://portal.malutpost.co.id> (diakses 13 April 2017).
- [17]. Malutpost. 2016. *Sekkab Halbar dan Kadis PU Halsel Ditahan*. <http://portal.malutpost.co.id> (diakses 13 April 2017).
- [18]. Najahningrum, Anik Fatun. 2013. Faktor-Faktor yang Mempengaruhi Kecenderungan Kecurangan (*Fraud*) Persepsi Pegawai Dinas Provinsi DIY. *Skripsi*. Program Sarjana Universitas Negeri. Semarang (tidak dipublikasi).
- [19]. Noviriantini, Komang. Darmawan, Nyoman Ari Surya & Desak Nyoman Sri Werastuti. 2015. Pengaruh Budaya Etis Organisasi dan Moralitas Aparat terhadap Kecenderungan Kecurangan (*Fraud*) Akuntansi pada SKPD Kabupaten Jembrana. *Journal Of Accounting Vol 3 No 1*.
- [20]. Nurhayati, Siti Rohmah. 2006. Telaah Kritis Terhadap Teori Perkembangan Moral Lawrence Kholberg. ISSN 1907-297X.
- [21]. Peraturan Pemerintah Republik Indoesia No. 60 Tahun 2008 Tentang Sistem Pengendalian Internal Pemerintah.
- [22]. Rahmaidha, Rizky. 2016. Pengaruh Keefektifan Pengendalian Internal, Ketaatan Aturan Akuntansi, dan Kepuasan Kerja terhadap Kecurangan Akuntansi pada SKPD kota Magelang. *Skripsi*. Program Sarjana. Unversitas Negeri. Yoyakarta (tidak dipublikasi).

- [23]. Rahmawati, Ardiana Peni. 2012. Analisis Pengaruh Faktor Internal dan Moralitas Manajemen terhadap Kecenderungan Kecurangan Akuntansi pada Dinas Pengelola Keuangan dan Aset Daerah Kota Semarang. *Skripsi*. Program Sarjana Universitas Diponegoro. Semarang (tidak dipublikasi).
- [24]. Suartana, I Wayan. 2010. *Akuntansi Keprilakuan: Teori dan Implementasi*. Edisi Pertama. Andi Yogyakarta.
- [25]. Sugiyono. 2007. *Statistika Untuk Penelitian*. Bandung : CV Alfabeta.
- [26]. Tuanakotta, Theodorus. 2016. *Akuntansi Forensik dan Audit Investigatif*. Edisi Kedua. Cetakan Keempat. Salemba Empat. Jakarta.
- [27]. Wilopo. 2006. Analisis Faktor – Faktor yang Berpengaruh Terhadap Kecenderungan Kecurangan Akuntansi pada Perusahaan Publik dan Badan Usaha Milik Negara di Indonesia. *Simposium Nasional Akuntansi IX: Padang*.
- [28]. Yenny. 2012. Pengaruh Pengalaman Kerja, Independensi, Objektivitas, Integritas, dan Kompetensi Auditor terhadap Kualitas Audit yang Dihasilkan Auditor Kap
- [29]. Zilmy, Rian Putra. 2013. Pengaruh Kesesuaian Kompensasi, Asimetri Informasi, dan Moralitas terhadap Kecenderungan Kecurangan Akuntansi pada SKPD Kota Padang. *Skripsi*. Program Sarjana Universitas Negeri. Padang (tidak dipublikasi).

# Determinant Plan for Married Adolescent in Maluku Utara 2015

Tati Sumiati<sup>1</sup>

<sup>1</sup>Faculty of Sciency Health, Public Health, Universitas Muhammadiyah Maluku Utara, KH Ahmad Dahlan Rd, No.100. Ternate, Provinsi Maluku Utara, 97713, Indonesia  
Email : tati.sumiati@gmail.com

**Abstact.** Marry a young age also accour becuase the young age also was pregnant and had to be mated. Ealy marriage having been pregnant showed high risky sexual behavior among adolescent. The purpose of thus study provide an overview and determinants that affect the plan to get married and how the possibility of success of the plan to marry in avoiding early marriage. Respondents aged 15-24 years who have not been married in the province of North Maluku. The data in this study using secondary data RPJMN KkbPK Survey 2015. the result showed that 62,7% of adolescent have plans to marry suite that women age  $\geq 21$  years and men aged  $\geq 25$  years. 196 (21.2%) of respondents who claimed to have had sexual intercourse that have (59.2%) plans to marry at the appropriate age. Related attitude of 252 (27.2%) of respondents who agreed that women have sexual intercourse before marriage that 63.9% had married a good plan to get married. Similarly, 33% agreed male sexual intercourse before marriage that 63,9% had married a good plan. Married plan is assosiated with sex (0.002), knowledge (0.0001), the need for education (0.0001), the need for counseling (0.022). From the results of the analysis showed that the increase of knowledge, providing health education and counseling becomes very important in the maturation age of marriage. Need appropriate methods in health education and counseling in improving attitudes regard premarital sexual behavior among adolescents to early marriage due to pregnancy outside of marriage is inevitable

**Keywords :** *Plan married, Age marriage, Adolescents, North Maluku*

## 1. Background

Child marriage may increase their physical, mental, social and economic health risks. The impact of physical health such as reproductive health due to pregnancy and childbirth at <20 years of age, mental impacts such as high levels of stress, low trust on self-ability. Social impacts such as the violence of spouses and families, the difficulty of doing daily activities. While the economic impact is the low level of economic income of married families of children and because of the high divorce rate in young couples, they are forced to return to poor parents and their children, increasing the burden on their parents. In addition to impact on young couples but also have an impact on their children such as stunting and even death of children.(1)(2)(3).

Culturally influenced that embarrassed an old maid. A young widow so better than an old maid. Cultural and family value protect young girls from defilement and stigma. (4)

Marriage age maturation program (PUP) in an effort to increase the age at first marriage, to reach the minimum age at the time marriage is 20 years for women and 25 years for men. It amins to provide an understanding and awareness to adolescents in order therein planning a family, they can consider various aspects related to family life, physical readiness, mental, emotional, educational, social, economic as well as determine the number and spacing of births. (5)

The purpose of study provide an overview and determinants that affect the plan to get married and how the possibility of success of the plan to marry in avoiding early marriage. This analysis is expected an idea to create the right strategy for adolescents may avoid premarital sex, pervent early marriage and married with a full cycle of planning appropriate reproductive health.

## 2. Methods

The data used are secondary data from the research “ National Indicators of Medium Term Development Plan 2015” conducted by National Population Family Planning Agency (BKKBN) of The Republic Indonesia. This survey was conducted in all province in Indonesia but this analysis only North Maluku Provinsi was used.

The population in this analysis are adolescents age 15-24 years and unmarried in North Maluku Province. The sample size selection of adolescent is 25 teenagers per census block. The selection of adolescent samples through two stage stratification sampling,

1. Selecting a number of probability proportional to size of the number of households from the census block sample frame
2. Selecting a teenager aged 15-24 years (k=25) by systematic random sampling of each selected census block

In Processing the data though the following stages :

1. Cleaning data is checking useful to determine data complete or not complete (missing data), If there is not complete then the respondent is not continued to the next analysis stage. Of the total census block North Maluku Province, there were 972 respondents but there was a missing value of 46 respondents (4.7%) then 926 respondents in the next stage of analysis.

2. Scoring is used to give weight to each question making it easier in data processing. Each independent and dependen variable is assigned a value consisting of :

a. Variable plan married

The instrument used to find out the marriage plan in this analysis are question number 11 for gender and 204 for age planning for marriage. The limits of the marriage plan in this analysis are

- 1) Good if female respondents have plans to get married at  $\geq 21$  years while for male respondent have marriage plans on  $\geq 25$  years
- 2) Less if not in accordance with above criteria

b. Variable need education, counseling and provision

The instrument used to measure extension needs based on question 303 with the question “in your opinion, what birth control and reproductive health services should be available to unmarried teenagers?”

303a : Education (activities that explain reproductive health and birth control methods)

303b : Counseling (Consultation about reproductive Health and Family planning)

303c: Provision (Provision and service of family planning tools/methods?)

The criteria 3 variable are yes or not

c. Variable Knowledge

Instrument in the analysis used based on question number 213, 214, 215, 216, 217.

Explanation for each question, choice of answer and scoring can be seen below :

No	Pertanyaan	Pilihan jawaban	Skoring
213	What age do you think a woman should marry?	..... Year Do not know	1 If the respondent answered $\geq 21$ years 0 if the respondent answered $< 21$ years and do not know
214	What age do you think a man should marry?	..... Year Do not know	1 If the respondent answered $\geq 21$ years 0 if the respondent answered $< 21$ years and do not know
215	What age do you think a woman should delivery for the first?	..... Year Do not know	1 if respondent answered the age of 21 to 35 years 0 if the respondent answers less than 21 years, over 35 years and do not know
216	According to you, what is the lowest or youngest safe age for a woman to give birth?	..... year Do not know	1 If the respondent answered $\geq 21$ years 0 if the respondent answered $< 21$ years and do not know
217	What is the highest	..... Year	1

---

or oldest safe age Do not know  
for a woman to  
give birth?

---

d. Premarital sexual behavior

Intrument used to know sexual behavior before marriage based on question number 605 is “have you ever had sexual intercourse?”

The criteria in this analysis is yes, no and do not know according to the questionnaire so no scoring is done again

e. Attitude

1) Question number 607 is used to measure the attitudes of respondents whether agree if a woman has sex before marriage

2) Question number 608 is used to measure the attitude of respondents whether agree if a man has sex before marriage

The criteria in this analysis are agree, disagree and depend on the questionnaire so as not to be scored again

### 3. Results

**Table 1.** The correlation between gender and married plans for adolescents in North Maluku Province 2015

Sex	Plan married				Total		P value
	<i>n</i>	%	<i>N</i>	%	<i>N</i>	%	
<b>Man</b>	307	58.4	219	41.6	526	56.8	0.002
<b>Women</b>	274	68.5	126	31.5	400	43.2	
<b>Total</b>	581	62.7	345	37.3	926	100	

From the table shows that women (68.5%) more than men (58.4%) already have plans to marry the appropriate age. The results of the test analysis showed that there is a significant correlation between the sex with plan to marry (p value 0.002)

**Table 2.** The correlation between the need for information and married plans for adolescents in North Maluku Province 2015

Need of education	Plan married				Total		P value
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
<b>Yes</b>	505	65.0	272	35.0	777	83.9	0.001
<b>No</b>	76	51.0	73	49.0	149	16.1	
<b>Total</b>	581	62.7	345	37.3	926	100	

From the table shows that most respondents (83.9%) states require information. 65% of those who need information about reproductive health already have plans to marry the appropriate age. The result of the test analysis shows that there is a significant correlation between the needs of information with the plan to marry (P value 0.001).

**Table 3.** The Correlation between counseling needs and married plans for adolescents in North Maluku Province 2015

The Need for counseling	Plan married				Total		P value
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
<b>Yes</b>	430	65.1	231	34.9	661	71.4	0.022
<b>No</b>	151	57.0	114	43.0	265	28.5	
<b>Total</b>	581	62.7	345	28.6	926	100	

From table shows that most (71.4%) of respondents express require counseling and 65.1% who state need counseling have plans to marry the appropriate age. Chi square test results showed that there is a significant correlation between the need of conseling with plans to marry ( P value 0.022)

**Table 4.** The correlation between knowledge and marriage plans for adolesents in North Maluku 2015

Knowledge	Plan married				Total		P value
	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%	
<b>Good</b>	459	70.6	195	29.4	664	71.7	0.0001
<b>Lack of knowledge</b>	112	42.7	150	57.3	262	26.3	
<b>Total</b>	581	62.7	345	28.6	926	100	

From the table shows that as large (71.7%) respondents have a good knowledge about the age of marriage and birth distance. 70.6% of respondents who have good knowledge have plans to marry the appropriate age. Chi Square analysis resultsh show that there is a significant correlation between knowledge with plans to marry (P value 0.0001)

**Table 5.** The correlation between premarital sexual intercourse with marriage plans for adolescents in North Maluku Province 2015

Sexual intercourse	Plan married				Total		P value
	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%	
<b>Yes</b>	116	59.2	80	40.8	196	21.2	0.509
<b>No</b>	453	63.7	258	36.3	711	76.8	
<b>Depended</b>	12	63.7	7	36.8	19	2.1	
<b>Total</b>	581	62.7	345	37.3	926	100	

From the table shows that 21.2% of respondents claimed to have premarital sexual intercourse and 2.1% they don't know have premarital sexual intercourse. 63.7% of respondents who had never sexual intercourse had plans to marry the appropriate age but who had sexual intercourse had plans to marry the appropriate age as well. Chi square test results showed that there is no significant relationship between sexual behavior with the plan to get married (P value 0.509)

**Table 6.** The correlation between attitudes towards women premarital sexual intercourse with married plans for adolescents in North Maluku 2015

Attitude premarital sex for women	Plan married				Total		P value
	<i>N</i>	%	<i>N</i>	%	<i>n</i>	%	
<b>No</b>	424	62.9	250	37.1	674	72.8	0.729
<b>Yes</b>	60	59.4	41	40.6	101	10.9	
<b>Depended</b>	97	64.2	54	35.8	151	16.3	
<b>Total</b>	581	62.7	345	37.3	926	100	

From the table shows that 72.8% of respondents did not agree that a woman had sex before marriage. 62.9% of the respondents who did not agree women had sex before marriage had plans to marry the appropriate age. Chi Square analysis result showed that there was no significant correlation between attitudes toward women having sexual intercourse before marriage with marriage plans (P value 0.729)

**Table 7.** The Correlation between attitudes toward men had premarital sexual intercourse with marriage plans for adolescents in North Maluku 2015

Attitude premarital sex for man	Plan married				Total		P value
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
No	381	62.2	232	37.8	613	66.2	0.193
Yes	77	13.3	55	15.9	132	14.3	
	123	68.0	58	32.0	181	19.5	
<b>Total</b>	<b>581</b>	<b>62.7</b>	<b>345</b>	<b>37.3</b>	<b>926</b>	<b>100</b>	

From the table shows that 66.2% of respondents don't agree that a man had sex before marriage. 62.2% of respondent disagree men having sex before marriage who plan to marry the appropriate age. The result of Chi Squire analysis showed that there was no significant correlation between attitude with marriage plan ( p value 0.193).

#### 4. Conclusion

From the results of the analysis showed that the increase of knowledge, providing health education and counseling becomes very important in the maturation age of marriage. Need appropriate methods in health education and counseling in improving attitudes regard premarital sexual behavior among adolescents to early marriage due to pregnancy outside of marriage is inevitable

#### Refences

- [1]. Groot R De, Kuunyem MY, Palermo T. Child marriage and associated outcomes in northern Ghana : a cross-sectional study. 2018. p. 1–12.
- [2]. Rumble L, Peterman A, Irdiana N, Triyana M, Minnick E. An empirical exploration of female child marriage determinants in Indonesia. Vol. 18, BMC Public Health. 2018.
- [3]. Stark L. Poverty, Consent, and Choice in Early Marriage: Ethnographic Perspectives from Urban Tanzania. Marriage Fam Rev [Internet]. Taylor & Francis; 2018;54(6):1–17. Available from: <https://doi.org/10.1080/01494929.2017.1403998>
- [4]. Badan Pusat Statistik. Kemajuan yang Tertunda : Analisis Data Perkawinan Usia Anak di Indonesia. Unicef Indones. 2016;(Analisis Data Perkawinan):1–100.
- [5]. Kependudukan B, Keluarga DAN, Nasional B, Bina D, Remaja K. PENGELOLAAN BINA KELUARGA REMAJA.

# The Role of Government in Preserving the Dayak Maanyan Traditional Ceremony in East Barito Regency, Central Kalimantan Province

Tresia Kristiana<sup>1</sup>, Effrata<sup>1</sup>

Universitas Kristen Palangka Raya, Jl. RTA Milono, KM 8,5 Palangka Raya, Indonesia. E-mail: unkrip.ac.id  
Email: tresiakristiana@yahoo.co.id., Effrata@gmail.com

**Abstract.** Indigenous wedding ceremony in Central Kalimantan, especially Dayak Maanyan, performed before the wedding ceremony religiously. In a traditional ceremony of marriage performed special rituals, such as: drinking tuak together, dance wadian dadas, natas banyang, ngampewan lalan, netek banyang, iwurung juwe. Every ritual in Dayak Maanyan traditional ceremony is always led by a Mantir, Mantir or adat leader in the village governance structure, duty to lead the ceremony by first meet the terms and conditions agreed by the families of both parties. In this research which became the subject matter How do the efforts of the Village Government to maintain the ritual ceremony of Dayak Maanyan traditional wedding? How does the Village Government preserve the Dayak Maanyan customary ritual ceremonies?. The method used in this research is qualitative method. Qualitative approach to know and describe clearly and detail the values of traditional wedding rituals Dayak Maanyan in Central Kalimantan. For that researchers conducted a series of field activities began to form research sites, transportation studies. To achieve the goal as predetermined, the researchers made observations on traditional wedding ritual activities Dayak Maanyan. In addition, researchers also asked questions (interviews) related to this activity. This is done to complete the data obtained through observation and interview the next researcher conducted a documentation study. The process of collecting data as described above is done by the researcher himself as the main instrument, and carried out in a natural environment. The researcher himself observes, goes to the subject or informant to conduct interviews, following the traditional Dayak Maanyan marriage ritual activities and collects the necessary documents. The result show that village government still preserve the traditional wedding ritual Dayak Maanyan until today. In the ritual ceremony of Dayak Maanyan marriage performed the stages in the form of, Drinking Tuak simultaneously, Dadas Dance, Natas Banyang, Ngampawen Lala, Iwurung Juwe, Village Government make policy in the form of provisions of customary law of marriage law kebenaran 12 rial, Panipahan Law, equipped with silver mountain.

**Keywords:** *The Traditional Wedding Ritual*

## 1. Introduction

Each tribe in Indonesia has marriage customs, as well as the Dayak Maanyan tribe in East Barito regency, Central Kalimantan Province. Customary Marriage Dayak Maanyan tribe is always done with special ritual, which has been done since hereditary. Initially Ceremony Customary Marriage conducted by indigenous people who embrace the flow of trust Kaharingan. This marriage ceremony is still maintained by Maanyan Dayak community until now, although some people have embraced religion, especially Christian ones. Dayak Maanyan Dayak Customary Ceremony, currently conducted in the community is called the fulfillment of customary law of marriage. This is usually done before the wedding ceremony in the church, or after the wedding ceremony is done in the church. Community obedience and the desire to preserve and preserve this cultural custom must be supported by the Government, because of the many meanings and philosophies of life taught in every traditional ceremony. In this study wanted to describe and analyze the Role of Government in supporting the preservation of indigenous Dayak Maanyan marriage culture.

## 2. Methodology

This research is a qualitative descriptive research, the researcher tried to solve the problem that happened in connection with the policy that has been made by the Government to preserve the culture of custom and maintain to local aripan, in this research the focus is the fulfillment of Customary Marriage Dayak Maanyan, Lokus its North Barito Regency. Research done by observation, depth interview, interaction, and try to understand, to subject and object of research so that can be comprehended implementation of government policy toward cultural preservation. The informants in this study are policy makers, ie policy makers consisting of Head of North Barito Regency, Indigenous Dayak Maanyan, Mantir and Dayak Maanyan People.

## 3. Research Result

The Maanyan Dayak community living in the Barito River Basin, belong to the East Barito regency administration. The total area of East Barito regency is 3,834 km<sup>2</sup> covering ten (10) districts. East Dusun sub-district and Paju Epat sub-district are the widest sub-districts, 867,70 km<sup>2</sup> and 664,30 km<sup>2</sup> respectively or 40.15% of the total area of East Barito Regency. East Barito District oversees 10 districts consisting of 103 villages / sub-districts including Transmigari Settlement Unit (UPT). The ten sub-districts are as follows:

No.	Kecamatan	Luas Wialayah Prosentase Terhadap (Km)	Luas Kabupaten
1.	Benua Lima	258	6.67
2.	Dusun Timur	867.70	22.75
3.	Awang	203	5.32
4.	Patangkep Tutui	255	6.68
5.	Dusun Tengah	371	9.68
6.	Pematang Karau	579	15.17
7.	Paju Epat	664.30	17.40
8.	Raren Batuah	186	4.40
9.	Paku	272	7.13
10.	Karusen Janang	178	4.64
<b>Luas Kab. Barito Timur</b>		<b>3834</b>	<b>100 %</b>

Sumber : Barito Timur Dalam Angka 2009

Dayak Maanyan tribe has a unique ceremonial ritual wedding ceremony, the wedding ceremony is performed with a series of other ceremonies performed in a row. The ceremonial ritual consists of:

### 3.1. Drink Tuak

Drink Tuak together which is led by Panggayungan children (mantir or person chosen for knowing the procedure of marriage). Mantirs are customary stakeholders elected by indigenous Peoples in the village. The tuak drinking ceremony begins with the children's grill tasting the taste of palm wine In the glass, starting with a spell that read "samang baram liura tuak tapai gilai hiang raru sintan manggapan arau sabe jawa tatau raro pinang bangking arau rimoi suing panrau mahamui teka rakun dungku mature alang uda tinai. As for the meaning of this drink is made from sticky rice into a tapai mixed with young betel nut so usual to cause a great feeling of drunk whoever drank it. After the incantation was read Pangguyungan children tasted the taste of palm wine and conveyed to the invitation what the taste of palm wine. If sweet berqarti tuaqk not toxic, and the invited guests are welcome to taste the taste of palm wine.

### 3.2. Dance Dadas

At Dayak Maanyan wedding ceremony wadian dadas dance performed with Tumet Leut (Kidung Puji) as wujut ushered the bride and groom to meet the bride's family, at the dance show the dancers wadian dadas handed over the welcoming ceremony of the family and the bridegroom to the family of the bride. At the time of surrender In this case welcomed by Mantir Tueh (old mantir) to ask whether or not the intent of the coming of the bridegroom-men and their families, this procession is called Natas Banyang which begins with Ngawawuh

### 3.3. *Natas Banyang.*

Mantir performing Tumet Lewut (singing or singing hymn) sair in Pangun Raun (Indigenous language of Dayak Maanyan tribe In the language of Satra Maanyan), which is sung in between women and men bersahutan.

### 3.4. *Ngampawen Lalan*

Ngampawen lalan is a barrier made of sugar cane, installed as a barrier before the groom's next family or bride, this obstacle is usually installed at the home of the bride's home. Ngampawen lalan done with first ineh lull.

#### a) *Inur Idurists*

Ineh Iduris is a very sacred incantation, can only be read if it has fulfilled its requirements. This magical mantra may only be read by a certain person such as a mantir or a person who can be trusted to represent a woman or a male party. The mantra reading can only be done by first fulfilling the customary requirements, if not fulfilled the requirements as determined, then the life of the stakes.

#### b) *Ipinai*

Ipinai as well as Idehis Ineh, is a very sacred incantation, can only be read if it has fulfilled its requirements. This magical mantra may only be read by a certain person such as a mantir or a person who can be trusted to represent a woman or a male party. The mantra reading can only be done by first fulfilling the customary requirements, if not fulfilled the requirements as determined, then the life of the stakes.

#### c) *Nupu Jatang*

Nupu Jatang is the process of making Mandau to be a Bunker or Bunker barrier tool made from sugarcane. Prior to the cutting of the women and men mentioned the fruits that are hanging on the basket or inscribed on the sugarcane that made the barrier.

#### 5). *Banyang Cutting Process.*

When the process of Banyang shooting that uses Mandau performed by the bride and bridegroom laqki-men called Ngupu Tatang. Ngupu tatang is done by first reciting the mantra and performing the calculations up to three times in a row with the following count:

- a. Isa (one), rue (two), telu (three), four (four), dime (five), enem (six), pitu (tuju) stop or stop
- b. Isa (one), rue (two), telu (three), four (four), dime (five), enem (six), walu (eight) stop or stop
- c. Isa (one), rue (two), telu (three), four (four), dime (five), enem (six), walu (eight), suei (Sembilan) ten (stop)

After that Mandau lifted directly ditebas or cut sugar cane with one swing.

#### 6) *Netek Banyang*

Netek banyang is a cutting haling process made of sugarcane, carried out by the bridegroom made by first Ipuris ambah.

- a) Ipuris Ambah is reciting or telling the story of a father's ancestry with a detailed background.
- b) Ippinai is the narrative of the ancestors of the Dayak people and the masters are delivered In the form of speech by a certain person in the utterance or sentence that conveyed contains supernatural purity and aims to destroy anything that obstacles or obstacles so that in the procession event Natang Banyang, Ipinai must be done to cut the rudder so that the prospective bride-man and his family can go to house the prospective bride.
- c) Nupu Jatang is a story about the origin of iron and its history of making by the ancestor of the Dayak maanyan, which is also filled with incantations that can only be pronounced by certain people so as to be the ultimate weapon for a particular purpose or mlain intent such as at the time of the war, and become a special weapon Dayak people are often referred to as Mandau.

#### 7). *Iwurung Juwe.*

Dance procession wadian dadas diamana dancers looking for the bride who was hiding, in this dance a woman was escorted to the aisle to show to the bridegroom. At the time indicated if the bridegroom Seeing the woman who introduced the dancer was not a candidate his wife, then the dancers will seek back women who hide, this is usually done repeatedly until the bridegroom affirmed that women brought before him is his future wife. This procession is performed with wadian dadas dances accompanied by special music.

The invitees usually watch this dance especially because when the bride has actually been found and affirmed by the bridegroom then the woman will be escorted by melamine, then will be procession of payment of fulfillment of adat law of Maanyan Dayak marriage tribe.

Fulfillment Customary Law of marriage is now adjusted to the current calculation requirements. The procedure of payment of customary law fulfillment as which is set in the Session Mantir Adat Kademangan Paju X then Watuan law retains the Real as the standard value. If the former one real valued Rp.6.000, - then raised its value to Rp.25.000, - one realnya. The following are some of the things that constitute new provisions in the fulfillment of customary law in paju X.

According to the Dayak Maanyan Trust is a must if the age has met the requirements to foster a household. There are several types of ceremonies In Maanyan Dayak customary marriage which consists of:

1. *Adu Pamupuh or engagement*

What is meant by adupamupuh is a marriage performed by the parents of both brides who bless the two couples witnessed by the mantir and penghulu, but they should not be gathered as husband and wife. This is the so-called engagement, while the actual marriage ceremony still has a grace period agreed by both parties.

2. *Adu ijari / Mintun / Kawin Lari*

It is a marriage done by two lovebirds who flee and ask to be married by a wali (usbah / asbah) from one of the prospective brides, and not to their own parents. Usually the ijari couple surrender themselves in the form of rings, necklaces and so on as evidence they want to marry.

3. *Adu Pangu'i*

A marriage conducted by both parties witnessed by the exact mantir and pangulu isa and guardian usbah / asbah from both sides but performed at night / evening.

4. *Adu Gapit Mate Manu*

Is a customary marriage ceremony performed simply by cutting two chickens. During the ceremony, the bride and groom sit on 9 gongs (agung), which are flanked by four (4) women and three (3) men who braid are the closest brothers of the bride is usually a one-time cousin. The marriage was legalized by sprinkling chicken blood with Bayam Istanbul and Daun Rirung Kammat leaves to both bride's clothes.

5. *Adap Gapit Mate Iwek*

This marriage customary ceremony is almost identical to Adu Gapit Mate Manu, only in this marriage which is sacrificed is iwek (pig) as a form of offering, the pig after cut is made as a joint meal, after being processed into food.

6. *Adu Gapit Manru Mate Iwek*

During the ceremony, the bride and groom sit on 9 gongs (agung), which is flanked by four (4) women and three (3) men who clamped is the closest bride of the bride is usually one cousin plus wadian bawo or bawu. This marriage has the highest value In the jurisdiction of the customary law of nansarunai marriage.

#### 4. Conclusions

The Unitary State of the Republic of Indonesia, which consists of tribes, has a wide variety of customs with a number of very extraordinary, one of which is marriage customs. In Dayak Maanyan tribe in East Barito reGENCY of Central Kalimantan Province, marriage custom is still maintained by Indigenous Dayak Maanyan people even though they have embraced religion, especially Christian ones. The role of the Government is required to establish a policy on legislation, to preserve the customary marriage, especially the fulfillment of customary law of marriage. All indigenous Dayak Maanyan people should participate in the preservation of local cultural customs.

#### References

- [1]. Atkinson, Paul dan Martyn Hammersley 1994 "Ethnography and Participant Observation". Dalam Norman K. Denzin dan Yvonna S. Lincoln, eds. Handbook of Qualitative Research. London: Sage Publications, hal. 248-261.
- [2]. Atmaja, Aat. (Pembina Sanggar Namuei) UPT Anjungan Kalimantan Tengah. 2014.
- [3]. <http://warisanbudavaindonesia.info/detail/warisan12688IWadianDadas>. Diposkan 29th
- [4]. <http://4.bp.blogspot.com/-Admm/Teori+Strukturisasi+Anthony+Gidden>
- [5]. <http://bakoelrekeh.blogspot.com>
- [6]. August 2014 oleh icci albarn. Label: Kebudayaan Tradisi.

- [7]. Budhisantoso, S. 1991 “Corak Kebudayaan Indonesia”. *Studi Indonesia*, 01:11-62. Durrenberger,
- [8]. Paul 1996 “Ethnography”. Dalam *Encyclopedia of Cultural Anthropology* (Volume 2). New York: Henry Holt, hal. 416-422.
- [9]. Bobin, A. B. et al (eds), *Monografi Daerah Jawa Tengah Jakarta: Proyek Pengembangan Media Kebudayaan Dept. P & KRI*, n.
- [10]. Dinas Pariwisata Kalimantan Tengah.2015. *Kepariwisata Kalimantan Tengah*. Online
- [11]. *Encyclopedia of Cultural Anthropology*, Volume 1, (Eds. David Levinson and Melvin Ember), New York: Henry Holt and Co., 1996, pp. 309-312.
- [12]. Harris, Marvin, 1999, *Theories of Culture in Postmodern Times*. New York: Altamira Press.
- [13]. Giddens, Anthony, *Teori Strukturasi (Dasar-dasar Pembentukan Struktur Sosial Masyarakat): Jakarta*
- [14]. Koentjaraningrat, 1974, *Pengantar Antropologi*. Jakarta: Aksara Baru.
- [15]. Kunst, J. 1973. *Music in Java: its History, its Theory and its Technique* The Hague: M. Nijhoff (2 vols).
- [16]. Melalatoa, M. Junus 1997 “Kajian Etnografi Pembangunan di Indonesia”. Dalam E.K.M. Parto,Suhardjo. 1990. *On Traditional Dances of Indonesia (Unpublished Paper)* originally submitted to *Performing Arts International*, Gordon and Breach.
- [17]. Raho, Bernard, 2007, *Teori Sosiologi Modern*. Prestasi Pustaka Publisher; Cetakan Pertama: Desember 2007
- [18]. Ratna, Nyoman Kutha, 2005, *Sastra dan Cultural Studies: Representasi Fiksi dan Fakta*. Yogyakarta: Pustaka Pelajar.

# Developing Children Story Book Media in English Based on Central Kalimantan Local Culture

**Tutik Haryani dan Sumiati**

University PGRI Palangka Raya  
Email: tutikharyaniupp@gmail.com

**Abstract.** Relating to the preservation of local culture in the field of education, the role of instructional media not only perform the function of knowledge transfer (transfer of knowledge), but also serves to instill the value (value) as well as build the characteristic of learners (Character Building). Learners are ongoing and continuous in learning through local culture. Sources of this research study focused on the introduction to the cultural heritage contained especially local culture of Central Kalimantan in the medium of story book for elementary school students in Palangka Raya as a manifestation of the Central Kalimantan local culture in the form of tradition, religion, social, technology and art. The purpose of this research is: (1). To examine how the characteristics of the development of child image story media in learning English based on local wisdom Central Kalimantan, (2). To examine how the principles of developing child picture story media in English based on local wisdom of Central Kalimantan, and (3). To find out how the test results of child image story media products in learning English based on local wisdom Kaliamntan Tengah.

This Research Type is Development (Research and Development or R & D). It is used if the researcher intends to produce a particular product, as well as to test the feasibility of the product. In this development research using procedural model that describes the stages that must be followed to produce learning media products in the form of children picture stories in learning English based on local wisdom of Central Kalimantan.

**Keywords:** *Local Culture, Story book*

## 1. Introduction

Language is an important communication tool for humans, because with the language we can know the information that humans need, other than that humans can convey ideas and ideas through language. Therefore, humans must be able to master the language and its elements, such as vocabulary, structure and so forth. Language arises and develops because of the interaction between individuals within a society. In relation to the important role of language as part of communication in human life, Fromkin and Rodman (1998: 5) briefly state the nature of human language as an arbitrary system of symbols of sound used by members of society to communicate and recognize each other.

English learning is not burdensome for children, when it is in well packaged with fun for children and readiness to accept English language skills will be very useful for children in the future that is full of challenges and global competition. The purpose of learning English for children is to foster interest in learning so that they can choose methods and teaching materials that are appropriate to the child. One method that can be used is through the storytelling method with pictorial story media.

Children telling story is a medium of learning the language by listening or receiving messages contained in it. In addition to develop the language, the story can set an example of a positive social life if the teacher can choose a story with the right message (Suyanto, 2007: 19). The story is a speech that unfolds how the occurrence of a thing (event or event); articles that describe the deeds, experiences, or sufferings of people; events and so on. (either real or imaginary).

Related to the effort of preserving local wisdom in the field of education, learning media not only run the transfer of knowledge but also serves to instill the value (value) and build the character (Character Building) learners in a sustainable manner. Sources of learning materials that are characterized as distinct from other areas and need to be raised into learning materials about local wisdom of Central Kalimantan to the younger generation, especially in this research plan is the

elementary school students. Introduce local wisdom of Central Kalimantan to children also need appropriate learning strategy in the form of learning media with child development level.

### **1.1. Formulation of the problem**

Based on the background and identification of problems that have been put forward, then the formulation of the problems to be solved through this research are as follows:

1. How is the characteristic of developing children story book media in English based on local wisdom of Central Kalimantan?
2. How is the principle of developing children story book media in English based on local wisdom of Central Kalimantan?
3. How is the result of testing the media product of children story book in English based on local wisdom of Central Kalimantan?

### **1.2. Research purposes**

In relation to the above-mentioned problem, this study aims to be as follows:

1. To examine how the characteristics of children story book development media in English based on local wisdom of central Kalimantan.
2. To examine how the principle of developing children story book media in English based on local wisdom of Central Kalimantan.
3. To find out how the test results of children story book development media in English based on local wisdom Kalimantan Tengah.

### **1.3. Illustrated Story Media**

The word "medium" is derived from the Latin language which is the plural of the word *medius*, which literally means "mediator or introduction". Thus, the media is a vehicle for channeling learning information or channeling messages. To realize the idea in the form of work required the media. Media plays a role or has a position as a means for someone to express themselves (Djamarah, 2006: 120).

Mitchell in Umi Faizah (2009: 252) says that picture book is a book in which there are pictures and words, in which the images and words are not stand-alone, but interdependent to become a unity of story. According Ardianto (2007) pictorial story is an art form that uses immaculate pictures that are arranged in such a way as to form the fabric of the story. Some characteristics of picture books by Sutherland in Umi Faizah (2009: 252) are: a) picture books are compact and direct; b) pictorial book series of glowing concepts; c) written concepts can be understood by children; d) the writing style is simple; e) there are illustrations that complement the text.

### **1.4. Learning English for Kids**

English subjects actually already exist in learning in elementary school and carried out for approximately 10 years. English Language Learning in Primary School is justified related to RI Medikbud Policies no. 0487/4/1992, Chapter VIII, stating that elementary schools may supplement the curriculum in their curricula, provided that the lesson does not contradict national education objectives. Then, followed by the Decree of the Minister of Education and Culture No. 060 / U / 1993 dated February 25, 1993 on the possibility of the English language program as a local elementary school subject matter, and it can be begun in the 4th grade of elementary school. Furthermore, the National Policy is followed up in areas with diverse, and some even determine the subjects of English as a local content subject as it is an option.

Piaget (Hoskisson & Tompkins, 1987: 11) states that elementary school students are concrete thinkers. They learn well through active engagement. Engagement in active use of language can be made more meaningful when it comes to experience and real things in a child's life. Asri Budiningsih (2005: 39) states that to avoid the limitations of thinking, the child needs to be given a concrete picture so that he is able to examine the problem.

### **1.5. Local Wisdom of Central Kalimantan**

Local wisdom is a local idea that is wise, full of wisdom, good value, embedded and followed by members of the community. Local wisdom is the values they use in the practice of everyday life, related to environmental management, social relations, and magical-religious relations (Sacred); It is also a meaningful system of ideas and values that belong to the local community, a way of life, attitude and behavior in the arrangement of society to always be conducive, become a force in solving community problems in order to stay harmonious, peaceful and prosperous. Local wisdom becomes

important and useful only when local people who inherit the knowledge system accept and claim it as part of their lives.

Scope of Local Wisdom of Central Kalimantan include:

1. Local Knowledge, Local knowledge concerns its environment related to cyclical and climate change, species of flora and fauna, geographical, demographic and sociographic conditions.
2. Local Culture/Customs
3. Culture Handep, hapakat, haruyung, my heart, hakangkalu, hatalinjam, harubuh, and still uphold the value of togetherness, mutual cooperation.
4. The number of traditional ceremonies that are still sustainable and carried on from generation to generation; Sahur food, mamapas lewu, manyanggar, dll
5. Philosophy of Huma Betang, Mangun Longang Huma Hai'i Parintaran Lumbah.
6. Isen Mulang, Ela Buli Manggetu Hinting Bunu Panjang, Isen Mulang Manetes Kamara Ambu Chain etc.
7. Local Resourcec ; Through local wisdom, the community manages local natural resources as needed and does not over-exploit the efforts of natural resource use always based on environmental sustainability. As long as the Dayak human relationship with nature, so nature is also seen as a mother who must be respected, honored, and cared for with love.
8. Local Skills ; Local skills in the community are also life skill and depend on the geographical conditions of the community.
9. Local Communities ; The community of Dayak community has been formed naturally since the first. The vast community of Dayak tribes is abundant, their cultures diverse but unique in their peaceful way, although in one house the difference of language and even religion is not a problem.
10. Solidarity ; In the life of Dayak people of Central Kalimantan has been ddiajarkan since antiquity. The sacred messages of the ancestors, is the description of how strong the solidarity of Indigenous Dayak life.

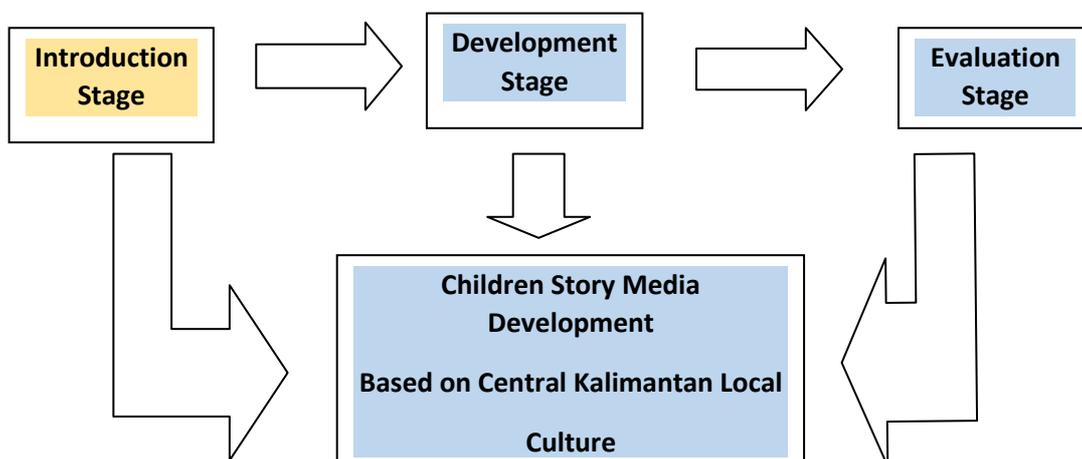
Through children's picture story media, innovative and creative learning activities to revive or re-enrich the local wisdom of Central Kalimanatan can be more revitalized through international language learning in response to the era of globalization.

## 2. Method

### 2.1. Type of Research

The type of research method used is the Research and Development (R & D) method. According Samsudi (2006: 74) describes the research and development seeks to produce a component in the education system, through the steps of development and validation. Research Development (R & D) is used when researchers intend to produce a particular product, as well as test the feasibility of the product. In this development research using procedural model that describes the stages that must be followed to produce learning media products in the form of children picture story. In broad outline, the whole flowchart of the design stage of research and development can be seen in as follows:

Chart 1. Stages of Media Development Activities for Children's Stories in English Learning based on local wisdom of Central Kalimantan



## **2.2. Research subject**

This research applied to children learning that is some elementary school students in Kecamatan Jekan Raya city of Palangka Raya Central Kalimantan which is expected to apply English learning planning to child. This research through representation of 3 (three) Elementary School in UPT Education of Jekan Sub-district which use English as intrakurikuler learning.

## **2.3. Research time**

This research was conducted on teaching and learning activities of academic year 2018/2019

## **2.4. Data Analysis Technique**

This study uses data analysis techniques, namely descriptive qualitative analysis techniques and descriptive statistical analysis.

## **2.5. Qualitative descriptive analysis**

This technique is used to process the data review of experts, students, and teachers. Data analysis techniques are grouped information from qualitative data in the form of inputs, responses, suggestions, criticisms and improvements that have been provided. The results are used to revise the product "Development of child image story media in learning English based on local wisdom of Central Kalimantan".

## **2.6. Descriptive Statistical Analysis**

Inferred media feasibility is identified by the percentage score. The higher the percentage score in the data analysis, the higher the media feasibility level. The evaluation criteria for the limited trial is 80% -100% is good / valid / decent; 60% -79% is quite good / quite valid / quite feasible; 50% -59% is considered less good / less valid / less feasible; <50% is not good (replaced). If the achievement of the results obtained after the trial is limited to 60% then this learning media product can be continued at the stage of further development.

## **2.7. Hypothesis Test**

If hypothesis testing is done by t-test, hypotes is accepted if the t-count is greater (>) than t-table.

## **3. Result and Discussion**

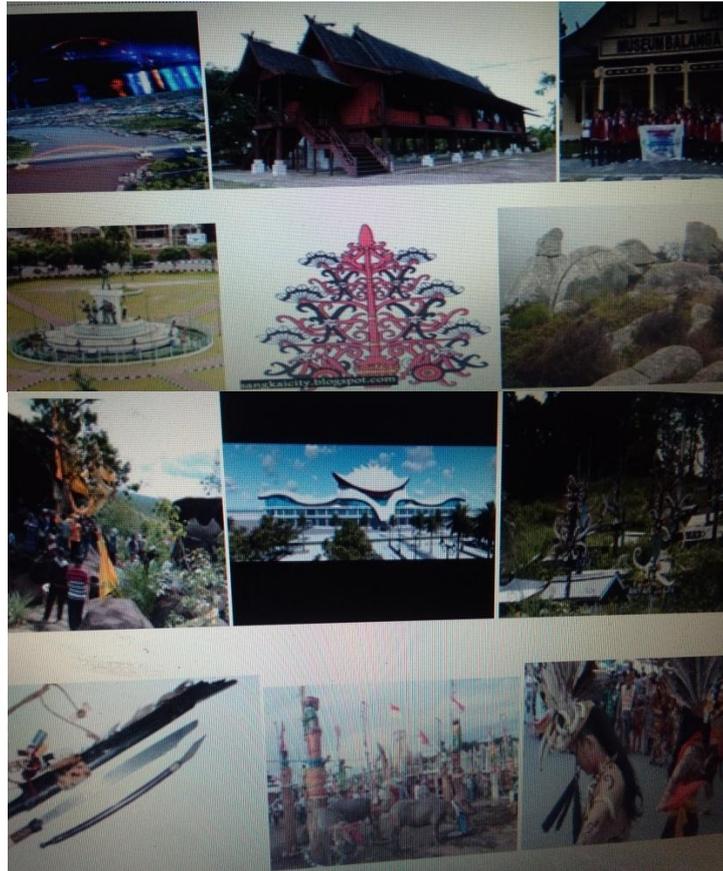
### **3.1. Result**

#### **a. Collection of Field Based Information Data**

The activity of collecting information data in the research of Media Development Story pictorial Children in Local Wisdom Based Learning of Central Kalimantan is done through observation of local wisdom from various sources in Kalimantan Tengah. The result of this stage is to see first hand of local wisdom of Central Kalimantan covering the relics of artifacts, cultural ceremonies held and the teachings that are still done by the people of Central Kalimantan

**Photo 1** Field studies for local wisdom research materials in Central Kalimantan are as follows:

- (1) Jembatan Kahayan
- (2) Rumah Betang
- (3) Museum Balanga
- (4) Bundaran Besar Palangka Raya
- (5) Batang Garing
- (6) Bukit Batu
- (7) Pertapaan Cilik Riwut
- (8) Bandar Udara Cilik Riwut
- (9) Kuburan Dayak Kenyah
- (10) Mandau
- (11) Upacara Tiwah
- (12) Pawai budaya Kalimantan Tengah



***b. Collection of Local Wisdom Information Central Kalimantan***

After the information gathering phase based on the location of the field, the researcher collects information based on interviews of some community leaders in Central Kalimantan. This activity aims to relate data on the development of Media Stories Children's Stories in Learning English based on Local Wisdom of Central Kalimantan in the Era of Globalization with reliable information in areas that have been predetermined. The results of this stage are interviews with historians and community leaders of Central Kalimantan on the local wisdom of folklore and artifacts inheritance origins.

***c. Literature Studies of Local Wisdom of Central Kalimantan***

At this stage it is also necessary to develop and review materials for research with literature reference and consult with the experts concerned. The execution by collecting referral source of teaching materials that includes searching, selecting, and drafting a referral source. Reference sources literature materials can strengthen research materials in deepening the introduction of local wisdom of Central Kalimantan.

**Photo 2.** Some literature studies for Central Kalimantan Local Wisdom research material



**d. Literature Study About Story Illustrated Media in English**

Based on Depdikbud RI's policy. 0487/4/1992, Chapter VIII, states that Elementary School can add lessons in its curriculum, provided that the lesson does not conflict with national education objectives and this policy is followed by Ministry of Education and Culture Decree no. 060 / U / 1993 dated February 25, 1993 on the possibility of the English language program as the local elementary school subject matter, for that matter the development of picture story media as a supporting material is needed. The use of relevant learning media in the classroom can optimize the learning process. Sources of reference books of Central Kalimantan local culture picture in English include:

1. English learning book for children ; This reference makes it easier to identify English lessons that prioritize vocabulary and pronunciation skills in a Central Kalimantan cultural story.
2. The English language textbook in Elementary Primary School level aims to adjust the ability of Primary School students in psychological aspects and characteristics.
3. English curriculum ; To adjust the English learning program at the level Primary school based on the lesson plan lassification of Local Culture as an English Learning Theme. At this stage the researchers classify local wisdom of Central Kalimantan based on cultural elements. The types of local culture of Central Kalimantan are classified as follows:

**Table 1.** Klasifikasi Local cultural wisdom of Central Kalimantan

No	Cultural Elements	Types of Central Kalimantan Local Culture
1	Religi	<ol style="list-style-type: none"> <li>a. Masjid Raya Darussalam</li> <li>b. Dereja Maranata, Bethlehem</li> <li>c. Gereja Sion Palangka Raya</li> <li>d. Makam Cilik Riwut</li> <li>e. Bukit Batu</li> <li>f. Bukit Tangkiling</li> <li>g. Budaya Handep, hapakat, haruyung,</li> <li>h. Pertapaan Cilik Riwut</li> <li>i. Larangan Memakan Ikan Patin</li> </ol>
2	Community Organization	<ol style="list-style-type: none"> <li>a. Dewan Adat Dayak (DAD)</li> <li>b. Gerakan Pemuda Dayak</li> <li>c. Ger Dayak</li> </ol>
3	Knowledge	<ol style="list-style-type: none"> <li>a. Pendidikan Pesantren</li> <li>b. Makam Cilik Riwut</li> <li>c. Museum Balanga</li> <li>d. Nyaru Menteng</li> </ol>
4	Livelihood	<ol style="list-style-type: none"> <li>a. Pencari Rotan dan Damar</li> <li>b. Penyadap Karet</li> <li>c. Nelayan</li> <li>d. Petani</li> </ol>
5	Technology / Tool	<ol style="list-style-type: none"> <li>a. Rumah Betang</li> <li>b. Jembatan Kahayan</li> <li>c. Sungai Kahayan</li> <li>d. Stadion Tuah Paho</li> <li>e. Bundaran Besar Palangka Raya</li> <li>f. Bandar Udara Cilik Riwut</li> <li>g. Amplang</li> <li>h. Mandai</li> <li>i. Pakaian Adat Dayak</li> <li>j. Mandau</li> <li>k. Sumpit, Dohong</li> </ol>
6	Language	<ol style="list-style-type: none"> <li>a. Dayak (Ngaju, Maayan, Bakumpai, O Siang Murung, Tamboyan, Lawangan, Dusun,</li> </ol>
7	Art	<ol style="list-style-type: none"> <li>a. Upacara Tiwah</li> <li>b. Pakanan sahur, mamapas lewu, manyanggar</li> <li>c. Menyanggar</li> <li>d. Filosofi Huma Betang</li> </ol>

- e. Isen Mulang
  - f. Tari Kinyah
  - g. Tari Giring-Giring
  - h. Tari Balian Dadas, Tari Mandau
  - i. Karungut, kandan, manasai, ngendau, dodoi
  - j. Seni pahat patung Sapundu
  - k. Seni dari bahan getah Nyatu, Anyaman
  - l. Wadian, Wara, Balian, potong Pantan, Mapalas
  - m. Ijambe,
  - n. Katambung
  - o. Kngkanung
- 

***f. Materials Instructions Stories Illustrated Local Wisdom in English***

The steps in formulating teaching materials are in the following results:

1. Review the English learning syllabus at the elementary level
2. Identify Competency Standards and Basic Competencies
3. Looking for related scientific references
4. Discuss the lesson plan
5. Develop teaching materials
6. Determine methods and simulations
7. Determining assessment of learning outcomes

***g. Designing Instruction Items Text (Synopsis)***

This stage begins with a review of the concept of a picture story media of local culture in the Indonesian language into the concept of English language. The first step determines the central idea in the local wisdom story of Central Kalimantan, then designs a synopsis consisting of:

1. Principal thoughts, basic sentences or core sentences.
2. Developing notes in Indonesian concept into English by focusing on the ability of vocabulary and pronunciation of pictorial stories based on local wisdom of Central Kalimantan.
3. Choose a single sentence
4. Summarize sentences into phrases, phrases into words
5. Maintain the idea by compiling a synopsis script

***h. Designing Illustration Instructional Materials***

Research on the development of children picture story media in English based on local wisdom of Central Kalimantan has many types and characteristics of graphic media. The pictorial story media consists of visual representation using points, lines, shapes, colors and virtual textures with the intent to summarize, illustrate an idea, data or event from local wisdom-based stories through learning English. The characteristics of the development of pictorial story media in the English-Based Learning Local Wisdom of Central Kalimantan as follows:

1. Media picture story for English learning based on local wisdom Central Kalimantan including two-dimensional work with size 21 cm x 29 cm with the form of story material story format.
2. In terms of visualization consists of color images and text as an explanation of the image.
3. The object of a singular image means to describe an event in a scene in the drawing work.
4. The making of a story story in English based on the local wisdom of Borneo Tenagh aims to drive attention, illustrating a subject matter as a tool to motivate and activate learners.

The picture story media in English learning based on local wisdom of Central Kalimantan is also as a supplement book. As for the supplement book is the work of fiction and non fiction that can provide opportunities for learners to meet their individual interests. Through the supplement book in a smaller format and attracting children, hopefully, it will add new treasures, knowledge, skills and attitudes to appreciate and recognize the local wisdom of Central Kalimantan.

***i. Expert validation in Product Results***

The validation stage is done by experts who are English language learning experts, local media learning experts and cultural experts of Central Kalimantan to be asked to provide assessment and suggestions on the story-based product of local wisdom in Central Kalimantan in English. The

instrument of expert validator for pictorial story product based on local wisdom of Central Kalimantan in English is expected to be arranged into teacher handbook.

#### ***j. Evaluation of Expert ,Feedback, and Advice***

The recommendation of the validator experts is that this book can be used with a small revision. This means that both the components of the completeness of the presentation and completeness of content related to the development of media stories based on local wisdom Central Kalimantan in English can be categorized as good and worthy to be used.

### **3.2. Discussion**

#### ***1). Characteristics of Child Image Stories Media In Local Wisdom of Central Kalimantan***

Developing children picture story media in English learning needs to be done through a scientific research so that the results can be accounted for as expected. Characteristics of children picture story media in this study have the following elements:

- a. The concept of pictorial story media is double concepts the first is introducing local culture in everyday life and the second is teaching the children about vocabulary and pronunciation in English
- b. The nature of pictorial story media has visuals (images) described in English text
- c. The story is simple and understandable by the children and is assisted by illustration drawings as a text supplement
- d. The story is not glowing so that only one scene or event

#### ***2). The Principle of Child Image Story Media In Local Wisdom of Central Kalimantan***

The principles of story book media for children in English in this study are as follows:

- a. The use of children picture story media is done to give recognition of objects, adjectives or verbs, time and events that are taking place in the story so that learning English is incidental
- b. It needs the preparation in introducing local cultural stories which is adapted to the teacher's ability, therefore the teacher should prepare the lesson plan first
- c. In English learning, the implementation of the initial image is to lure the child concentration directly.
- d. Learning methods used are storytelling, discussion, and proping.
- e. Teachers is as facilitators and mediators in the learning process.

### **4. Conclusion**

Based on the results and discussion of the development of child picture story media in English based on local wisdom of Central Kalimantan, it is known that English teachers in Elementary School need instructional media in the form of picture story which included RPP (Learning Implementation Plan) as teaching material and guidance in implementing English teaching and learning process. Assessment of the experts (validator) of the illustrated story products have been good and recommended for teachers used as a supplement book in English language learning at the elementary school level.

### **References**

- [1]. Asri Budiningsih. 2005. *Belajar dan membelajarkan*. Jakarta: PT Rineka Cipta. Ardianto, Cipta, Tommy. 2007. *Perencanaan Buku Cerita Bergambar*.
- [2]. Djamarah, Syaiful Bachri. 2006. *Strategi Belajar Mengajar*. Jakarta : Asdi Mahastya.
- [3]. Elbas. Lambartus. 1986. *Arsitektur Tradisional Daerah Kalimantan Tengah*. Departement Pendidikan Dan Kebudayaan Jakarta.
- [4]. Fromkin, Victoria dan Robert Rodman. 1998. *An Introduction to Language* Edisi ke-6). Orlando: Harcourt Brace College Publishers.
- [5]. Hoskisson, K. & Tompkins, G. E. .1987. *Language arts: Content and teaching strategies*. Melbourne: Merrill Publishing Company.
- [6]. L. KDR, Parada. 2016. *Keragaman dan Kekayaan Budaya Kalimantan Tengah*. Kalimantan Tengah
- [7]. \_\_\_\_\_. 2007. *Mengenal Budaya Kalimantan Tengah*. Kalimantan Tengah
- [8]. Samsudi. 2006. *Desain Penelitian Pendidikan*. Semarang: Unnes Press.
- [9]. Suyanto, Kasihani K.E. 2007. *English For Young Learners*. Jakarta: Bumi Aksara.
- [10]. Tim Penyusun Kamus Pembinaan dan Pengembangan Bahasa ed.2 ,1999.

- [11]. *Kamus Besar Bahasa Indonesia*, Jakarta: Balai Pustaka.
- [12]. Widen, Kumpiadi. 2009. *Organisasi Sosial Lokal Suku Bangsa Dayak Ngaju Di Kalimantan Tengah*. Kalimantan Tengah: Departemen Kebudayaan dan Pariwisata
- [13]. Umi Faizah.2009. *Keefektifan Cerita Bergambar untuk Pendidikan Nilai dan Keterampilan Berbahasa dalam Pembelajaran Bahasa Indonesia*. Tesis. Yogyakarta: Program Pascasarjana, Universitas Negeri Yogyakarta.
- [14]. Katalog Buku Kalimantan Tengah. file:///C:/Users/Acer/Documents/Katalog%20Buku%20Kalimantan%20Tengah.htm. Accesed on March 30, 2018

# Review of Ikan Kering Kayu Processing and Canning Systems at PPUPIK Program of Rumah Ikan Faculty of Agriculture Muhammadiyah University of North Maluku

Umar Tangke<sup>1</sup>, Aisyah Bafagih<sup>2</sup>, Ruslan A. Daeng<sup>3</sup>

<sup>123</sup>Lecturer at Muhammadiyah University of North Maluku, North Maluku, Indonesia

<sup>1</sup>Email : umbakhaka@gmail.com

**Abstract.** Ikan kering kayu is a diversified product of processed fish that looks and tastes almost the same as rendang but has a difference in raw materials used ie fish. The people of North Maluku generally make ikan kering kayu as one of the business activities to improve the welfare, where this product has a low shelf life or less than two days so it can also affect the wide scope of marketing. To be able to increase shelf life and wide scope of marketing hence need to utilize correct processing technology, handling and canning and based on result of research so that ikan kering kayu product that produced can have wide storey and wide scope of marketing. Fish canning is a handling and packing treatment technique by heating fish in closed, tin containers to deactivate enzymes, kill microorganisms, and turn fish in raw form into ready-to-eat products.

**Keywords :** *Processing, Canning, PPUPIK Rumah Ikan, Ikan kering Kayu*

## 1. Introduction

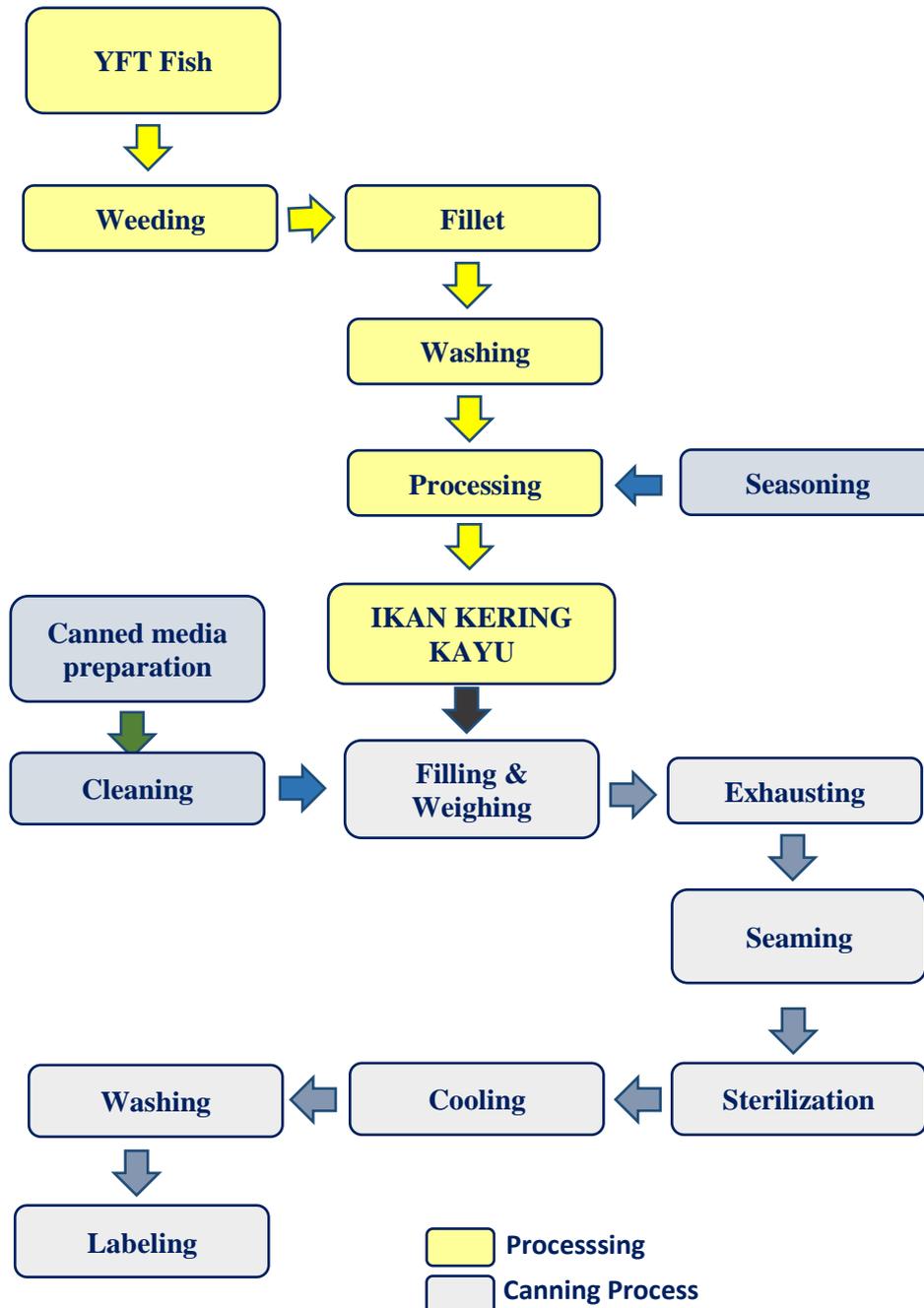
Yellowfin tuna and skip jack tuna or better known as madidihang and skipjack is one of the big pelagic fish and superior commodities in North Maluku, with production value reaching 50% of total fish production in North Maluku Province. As a commodity of high economic value and has a large market share, the exploitation of madidihang and skipjack fish has a role in the economic development of Indonesia, especially in North Maluku Province, therefore, it is reasonable to use the resources of the fish and the skipjack is increasing (Tangke and Deni, 2014).

Maluku Province is mostly used in the form of fresh and processed exports in the form of diversified products such as fish shredded fish, dried wood, fish meatballs and other processed species. Diversification of processed fish products is a diversification of fishery products made from raw fish, which have not or have been utilized with attention to quality and nutrition factors, in order to increase fish consumption both in quality and quantity and increase in selling value (Radjiloen, 2015). ikan kering kayu is a diversified product of processed fish that looks and tastes almost the same as rendang but has a difference in raw materials used ie fish.

The people of North Maluku generally make ikan kering kayu as one of the business activities to improve the welfare, where this product has a low shelf life or less than two days so it can also affect the wide scope of marketing. To be able to increase shelf life and wide scope of marketing hence need to utilize correct processing technology, handling and canning and based on result of research so that ikan kering kayu product that produced can have wide storey and wide scope of marketing. Fish canning is a handling and packing treatment technique by heating fish in closed, tin containers to deactivate enzymes, kill microorganisms, and turn fish in raw form into ready-to-eat products. considering the importance of processing system, handling and canning of ikan kering kayu, this paper is made to examine and discuss the processing system and canning of dried fish in the activity of PPUPIK Rumah Ikan Faculty of Agriculture University of Muhammadiyah North Maluku.

## 2. Processing dan Canning Ikan Kering Kayu

Process ikan kering kayu cans in the PPUPIK program is done like the manufacture of fish processed products and other canning and is divided into two major processes namely processing and canning. The processing and canning of ikan kering kayu can be seen in Figure 1.



**Figure 1.** Flowchart of Processing and Canning of Ikan Kering Kayu

### 3. Discussion

The process of making ikan kering kayu cans at the PPUPIK Rumah Ikan Faculty of Agriculture, Muhammadiyah University of North Maluku is divided into two major processes namely processing and canning process.

#### 3.1. Processing

Processing begins with sorting or selection of the type and quality of the best fish as raw materials for manufacturing of ikan kering kayu. The process of sorting is done by organoleptic testing of yellowfin tuna fish raw material which will be used as ikan kering kayu product, if the organoleptic quality does not meet the requirement to eat the raw material is rejected. The standard of organoleptic value for raw material of fresh tuna yellowfin is  $> 7$  (from scale 1-9), with the criteria of good fish meat is bright color, on and chewy and when pressed texture will return to its original condition.

Weeding is the second process after the raw materials are accepted to serve as the material for the manufacture of ikan kering kayu. Weeding process is done by removing the parts on the fish body such as the disposal of fins, gills, scales, stomach contents. After weeding raw materials in the wash and fillets in accordance with the size of the manufacture of ikan kering kayu products with the thickness of fish meat at least 2 cm. The next step after the fillet process is the washing process. Washing is done by using clean water with a quality value such as water so as not to occur microbial contamination from which can degrade the quality and can rot the fish. According to Larousse and Brown (1997), fish wash with cold water can reduce contamination of microbes in fish body significantly.

Processing is the last step on the processing or manufacturing of ikan kering kayu products. Processing done with spice preparation first before the fish meat cooked with spices. In the process of processing fish meat in cooking along with spices for about 3 hours with the aim that the spices can seep perfectly into the pores of fish meat, after cooking ikan kering kayu products then in the lift and cooled for the next process of the canning process.

### **3.2. Canning Process**

The steps in the canning process are done with the preparation of the container cans before being used in the process of canning. The container is then washed in order to remove dust and other contaminant materials attached to the inside and outside of the can. After the cans are washed the next step is the process of filling and weighing the product. Charging is done by arranging the fish meat to match the product type and the number of products on the can with the diameter of 75 mm and the height of the can of 75 mm. In the process of filling and weighing things to note is the uniform weight of the product and the provision of head space on the container cans with the aim that there is reserve space for the development of the product during the heating process so as not to press the container because it can cause cans become kembun (Redhitasari, 2015). According to Adawiyah (2007), the head space is the remaining empty space between the cap and the product.

Exhausting is the second step in the ikan kering kayu canning process, exhausting is the process of vacuum, where in the small-scale factory exhausting is done by way of preheating the product at 90-95 °C for 15 minutes, when the product is inserted into the can in hot and direct container closed in a hot masih state. The purpose of exhausting is to remove air so that the pressure inside the cans after heat and cooling treatment becomes lower than atmospheric pressure. The vacuum condition maintains the lid of the can, thereby reducing the oxygen level and the oxidation chances of the material in the head space. It will also extend the shelf life of the product and prevent canning bubbles in the high areas of Larousse and Brown (1997).

Seaming or tin closing process is done after exhausting process. This seaming process is done as soon as possible in order to achieve a vacuum condition inside the can. This vacuum condition is intended to extend the shelf life of the product due to the absence of oxygen and other gases and to reduce the growth of microorganisms that can damage the product. Seaming process is the condition of the second critical control point because if penutupan can not be perfect then it can merudsak product and can occur contamination of *E. coli* and *Salmonella* bacteria. The process of closing the cans is done with a portable machine can seaming seamer type TDFJ-160 with seaming speed 7 cans / minute. The can seam can seam can seam can combine the can body and the can cover in two folds between the body and the can cover aims to prevent leakage and form barrier to gas, liquid and microorganism (Adawiyah, 2007).

Sterilization, at this stage the product of the canned ikan kering kayu is heated to a temperature of 120 °C. and a pressure of 0.55 kg/cm<sup>2</sup>, for 15 minutes. The purpose of sterilization is to kill all microorganisms that can cause damage to the product, where with the death of all microorganisms the product will have a long shelf life. This stage is the third critical control point because if temperature, time and pressure are not suitable it can cause potential danger of growth of *Clostridium botulinum* bacteria. According to Adawiyah (2007), there are two types of sterilization namely biological sterilization to kill all microorganisms and commercial sterilization that does not cause all microorganisms to die, but only kill pathogenic bacteria and forming toxins which under normal conditions will not damage the food. In the activity of PPUPIK Rumah Ikan, the sterilization process used is biolois sterilization.

The cooling stage is carried out after the sterilization stage, the cooling must be done so that the fish meat in the product does not overheat, so it can damage the texture and taste of the product and

can provide shock therapy on heat-resistant bacterial spores and can grow at a temperature between room temperature and process temperature. Cooling is done by inserting sterilized cans into a water-filled container for 20-25 minutes. Post sterilization cooling is important because of the considerable pressure difference that can cause the recontamination of cooling water into the product. It should be ensured that the cooling water used also meets the standard microbiological requirements. According to Adawiyah (2007), after the sterilization process of the container should be immediately cooled to obtain uniformity of time and temperature of the process and to maintain the quality of the final product better.

The washing stage is performed with the aim of removing dirt attached to the tin surface during the process of filling. If the dirt is not cleaned, it is feared that microbes can grow and become the main contaminant of the product after it is opened. Dirt is usually attached to the outer cans surface causing rusty cans and difficult at the time of labeling. Washing is done by using soap water this is in accordance with the opinion of Adawiyah (2007), on good process cans washed with warm water tube then rinsed with clean water.

The last stage of canning process is labeling. Labeling is intended to know the product used and to know when the production time so that it can determine the expiration period, and of course with the labeling of products will be more easily recognized by the public.

#### **4. Conclusion**

Ikan kering kayu is a processed product typical of the people of north maluku that has a very short storing capacity at room temperature so that it affects the wide scope of the marketing area, by utilizing the results of research, technology and processing methods and a good canning then dry wooden fish products can have an intersection very well that can reach 2 years and will certainly greatly affect the wide scope of marketing area.

#### **ACKNOWLEDGEMENTS**

We sincerely thank you for your cooperation from various parties. Especially the Ministry of RISTEK-DIKTI, the Rector of Muhammadiyah University of North Maluku and the Dean of the Faculty of Agriculture UMMU-Ternate who has provided suggestions for the development of PPUPIK Rumah Ikan activities.

#### **References**

- [1]. Adawiyah R., 2007. Pengolahan dan Pengawetan Ikan. Bumi Aksara. Jakarta.
- [2]. Irianto H. E., Teuku Muamar Indra Akbarsyah., 2007. Pengalengan Ikan Tuna Komersial. Jurnal Squalen Vol. 2 No. 2. Hal 43-50
- [3]. Painusa A. F., Grace Sanger., Djuhria Wongso. 2015. Kajian Perubahan Mutu Kesegaran Ikan Tongkol (*Euthynus affinis*) Yang Direndam dalam Ekstrak Rumput Laut (*E. Spinosum*) dan Ekstrak Buah Bakau (*S alba*). Jurnal Media Teknologi Hasil Perikanan. Vol. 3 No. 2. Agustus 2015. Hal 66-74.
- [4]. Radjiloen. B. 2015. Pokok-Pokok Pikiran Menjadikan Maluku Utara Sebagai Lumbung Ikan Nasional. Dinas Kelautan Provinsi Maluku Utara.
- [5]. Redhitasari R., 2015. Proses Produksi Pengalengan Ikan Sarden (*Sardinella sp*) Dalam Saus Tomat di PT. Santo Alfin Pratama. Maya Food Industries Pekalongan. Laporan Praktek Kerja Lapang. Program Studi Teknologi Pangan. Fakultas Teknologi Pertanian. Universitas Katolik Soegijapranata. Semarang.
- [6]. Larousse, J., and Brown B., 1997. Food Canning Technology. Wiley-VCH, Inc. United States of America.
- [7]. Tangke. U dan Sitkun Deni. 2014., Pemetaan Daerah Penangkapan Ikan Madidihang (*Thunnus albacares*) dan Ikan Cakalang (*Katsuwonus pelamis*) di Perairan Maluku Utara. Jurnal Ilmiah agribisnis dan Perikanan (AGRIKAN UMMU-Ternate) Volume 6 No 3, Hal 1-17.

# Physicochemical characteristics of alkali treated cottonii (ATC) flour of *Kappaphycus alvarezii* seaweed from Morotai Island North Maluku

Vanessa Natalie Jane Lekahena<sup>1</sup>, Jainudin Saniapon<sup>2</sup>

<sup>1</sup> Fishery Product Technology Study Program Faculty of Agriculture UMMU Jalan K H Ahmad Dahlan No. 100, Ternate, Maluku Utara, Indonesia  
E-mail: enchalekahena@yahoo.com

<sup>2</sup> Fishery Product Technology Study Program Faculty of Agriculture UMMU Jalan K H Ahmad Dahlan No. 100, Ternate, Maluku Utara, Indonesia  
E-mail: jsaniapon@gmail.com

**Abstract.** Utilization of *Eucheuma cottonii* or *Kappaphycus alvarezii* to become alkali treated cottonii (ATC) flour or semi refined carrageenan (SRC) is one effort to improve the quality and economic value of seaweed. ATC flour is a polysaccharide extracted from *Kappaphycus alvarezii* using hot alkali solution which can be used as raw material for the manufacture of refined carrageenan. The utilization of carrageenan in the food processing industry and other industries is very important, so it is necessary to study the processing of ATC flour using the optimal type and concentration of alkali solution. The research aim is to know the characteristic of ATC flour of *Kappaphycus alvarezii* seaweed from Morotai Island based on the type and concentration of alkali solution, while the research benefit as information resources in ATC flour processing and manufacture technique so that it can be applied by the community and seaweed processing industry. The research stages include sample preparation, the extraction using hot alkali solution with the treatment: A<sub>1</sub> (KOH 6%), A<sub>2</sub> (KOH 8%), A<sub>3</sub> (NaOH 6%) and A<sub>4</sub> (NaOH 8%), and ATC flour quality characterization include: yield, gel strength, bulk density, whiteness, moisture content and ash content. ATC flour extracted using KOH 8% has the best characteristic with 24.03% yield value; gel strength 28774.88 g.cm<sup>-2</sup>; bulk density 0.12 g/mL; whiteness 58.27%; moisture content 15.97% and ash content 18.32%.

**Keynote:** *Physicochemical characteristics, ATC, Kappaphycus alvarezii*

## 1. Introduction

Seaweed is an important commodity in Indonesia in general and North Maluku in particular because it has export potential. Good raw materials supported by appropriate postharvest technology will produce seaweed processed products with commercial quality standards, but until now most of seaweed is still exported in dried seaweed with low selling price, while processed products such as agar flour, carrageenan, and alginate, and other derivative products are still imported in bulk at high prices.

Morotai Island district is one of the areas in North Maluku Province which has a large and bulk *Kappaphycus alvarezii* seaweed cultivation center, but only sold in the form of dried seaweed. There no many reports and information about the physicochemical characteristics and derivative products of seaweed from Morotai Island. ATC flour is one derivative products of *Eucheuma cottonii* or *Kappaphycus alvarezii* which is processed using hot alkali solution. This product has high economic value and many benefits and plays an important role in the food processing industry and other industries.

ATC flour can be used as raw material for the manufacture of refined carrageenan. Carrageenan is a hydrocolloid compound of straight polysaccharide and galactan molecule with galactose main unit. Carrageen is seaweed sap extracted with an alkali solution in some species of Rhodophyceae class (red algae). Utilization of carrageenan is widely used as a stabilizer, gelling agent, thickener and emulsifier (Ortiz & Aguilera., 2004; Aritoft et al., 2007).

Based on the background, it is necessary to conduct research on the technical processing and extraction of *Kappaphycus alvarezii* seaweed into ATC flour. The research's aim is to know the characteristic of alkali treated cottonii (ATC) flour of *Kappaphycus alvarezii* from Morotai Island based on the type and concentration of alkali solution.

## 2. Research Methods

### 2.1. Samples Preparation

Dried seaweed obtained from Morotai Island, washed and soaked using clean water as much as 10 times the weight of dry seaweed for  $\pm$  8 hours, then drying up and cut to size  $\pm$  2-3 cm, and then do the extraction process using hot alkali solution with treated A<sub>1</sub> (KOH 6%), A<sub>2</sub> (KOH 8%), A<sub>3</sub> (NaOH 6%) and A<sub>4</sub> (NaOH 8%), the ratio of seaweed and alkali solution is 1: 5, for  $\pm$  2 hours. The results subsequently neutralized by washing extraction repeated 7 times and dried using an oven at temperature of 50 °C for 48 hours to dry and then milled into flour using a disc mill ATC.

Characterisation of ATC flour produced include: yield (AOAC, 2015), gel strength (Tuazon, 1996), bulk density (Falate & Okafor, 2013), whiteness (Lanier et al. 1991), moisture content (SNI 01.2354.2-2006) and ash content (SNI 01.2354.1-2006).

### 2.2. Statistics

Analysis of data from the ATC flour quality tests in this study using Random Block Design (RBD) with three replications in each treatment using SPSS 22 and if a significant influence further test of Duncan.

## 3. Results and Discussion

ATC flour characteristics influenced by raw materials quality, type of alkali solution and harvesting seaweed used. Research on the physicochemical characteristics of ATC flour, made using *Kappaphycus alvarezii* seaweed cultivated on the Morotai island by harvesting 45 days are extracted using 2 types of alkali solution (NaOH and KOH) with 2 concentration (6% and 8%). ATC flour characteristics value generated as in Table 1.

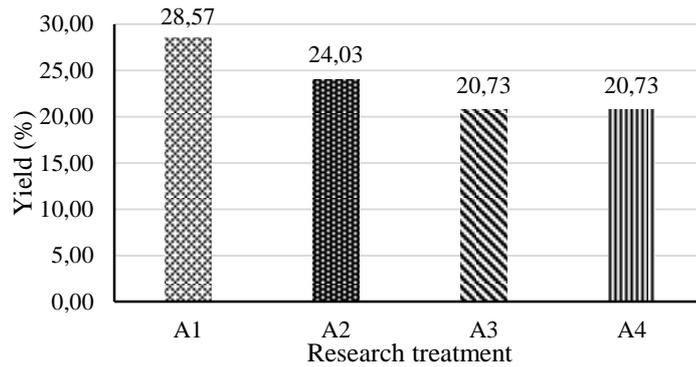
**Table 1.** Characteristics of Quality of ATC Flour

Quality Parameters	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>
	KOH 6%	KOH 8%	NaOH 6%	NaOH 8%
Yield (%)	28.57 <sup>b</sup>	24.03 <sup>a</sup>	20.73 <sup>a</sup>	20.73 <sup>a</sup>
Gel strength (g.cm <sup>-2</sup> )	24489.88 <sup>b</sup>	28774.16 <sup>c</sup>	1886.78 <sup>a</sup>	1640.68 <sup>a</sup>
Bulk density (g.mL <sup>-1</sup> )	0.12 <sup>a</sup>	0.12 <sup>a</sup>	0.09 <sup>a</sup>	0.11 <sup>a</sup>
Whiteness (%)	55.38 <sup>a</sup>	58.27 <sup>b</sup>	63.57 <sup>c</sup>	64.71 <sup>c</sup>
Moisture content (%)	15.75 <sup>a</sup>	15.97 <sup>a</sup>	19.04 <sup>b</sup>	22.38 <sup>c</sup>
Ash content (%)	21.27 <sup>bc</sup>	18.32 <sup>a</sup>	20.36 <sup>b</sup>	22.34 <sup>c</sup>

Remarks: The number followed by the same letter on the same line is not significantly different at  $\alpha$  0.05

### 3.1. Yield

The yield determinants of the economic value of the processing and production of materials. Describe the yield value of the net proceeds of production. ATC flour yield value is calculated based on a percentage of dry ATC flour compared with dried seaweed. Yield value is an important factor because it shows the quality of the raw materials of seaweed used in the production of ATC (Darmawan et al., 2013).



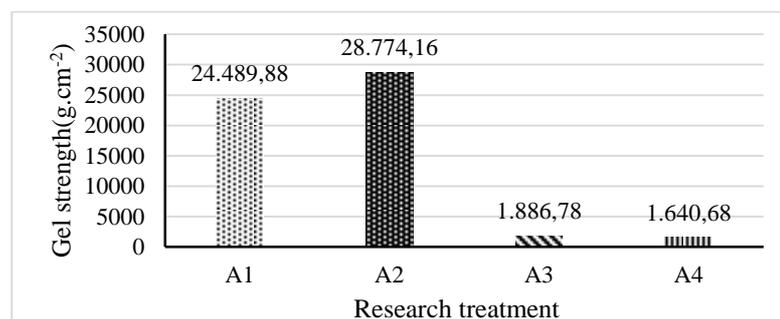
**Figure 1.** Histogram of ATC flour yield

Yield value of ATC flour (Figure 1), shows that the extracted using KOH solution has higher yield value than the result of extraction using NaOH solution. KOH and NaOH are compounds that are strong alkali reduction. Extraction using hot alkali solution will open the cell walls of seaweed so as to facilitate the withdrawal process extracts ATC when added acid solvent that will affect the yield generated. This is in accordance with the opinion of Kusuma et al., (2012), which states that the value of the yield is affected due to the provision of alkali concentration that causes the hydrolysis of cell walls and ATC that accumulates in the cell wall can be pulled easily when extracted using acetic acid.

ATC flour yield value range between 20.73-28.57% (Figure 1), this value is equal to the results of research Tunggal and Hendrawati, (2015) which ranged from 17.33-28.80% and smaller than the ATC produced from *Eucheuma cottonii* collected from several regions, which ranged from 1.30-41.33% (Darmawan et al., 2013). Analysis variance result showed that type and concentration of alkali solution gives the significant effect on the yield value of ATC flour. The yield of the extraction using KOH 6% have significantly different values compared to the yield using other treatments (Table 1).

### 3.2. Gel strength

Gel strength is the property of an object or food product in terms of its resistance to breaking due to a non-deforming force (Soekarto, 1990), whereas violence is the amount of force to break food products. One of the important properties of ATC flour is its gel forming properties and strength. Gel strength is the ability to change a liquid to a solid or changing the shape of the sol to a gel which is irreversible. The ability of gelling carrageenan is causing very extensive ATC and its use, both in food and non-food.



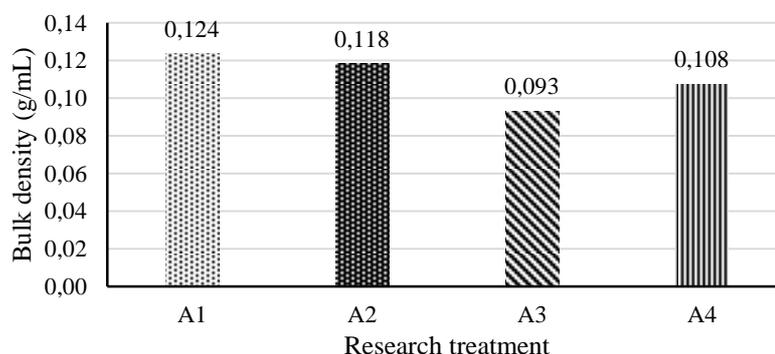
**Figure 2.** Histogram of ATC flour gel strength

The gel strength of ATC flour were in the range of 1640.68-28774.16 g.cm<sup>-2</sup> (Figure 2) with the highest was found in ATC flour treated using KOH 8% (A<sub>2</sub>) and the lowest was that treated using NaOH 8% (A<sub>4</sub>). This result exceeds the value of gel strength standards set by the FAO is 900-1200 g.cm<sup>-2</sup> and the results of Sedayu et al., (2008), which ranged from 783-828 g.cm<sup>-2</sup>. The high gel strength values caused by the extraction process using hot alkali solution thus opening the cell walls that increase 3,6-anhidrogalaktoza cause increased potential double helix formation so much faster gel formation is achieved (Moirano, 1977 in Samsuar 2006).

Analysis variance result of gel strength of ATC flour indicated the type and concentration of alkali solution significantly influence the gel strength value of ATC flour. ATC flour extracted using NaOH solution at different concentrations that do not generate different in gel strength values, whereas the extraction using KOH at different concentrations have different gel strength values (Table 1). The ratio gel strength of ATC flour extraction results using KOH and NaOH was 12:1, meaning extracted using KOH solution produced the gel strength of ATC flour was 12 times higher than using NaOH solution.

### 3.3. Bulk Density

Bulk density is the parameter that indicates about the characterization of particle material. Characteristics of particles of powder has important influence on the nature of products such as particle size, shape, surface, density, hardness and adsorption properties. Bulk density of powdered food product is very dependent on particle size and distribution (Singh et al., 2005).



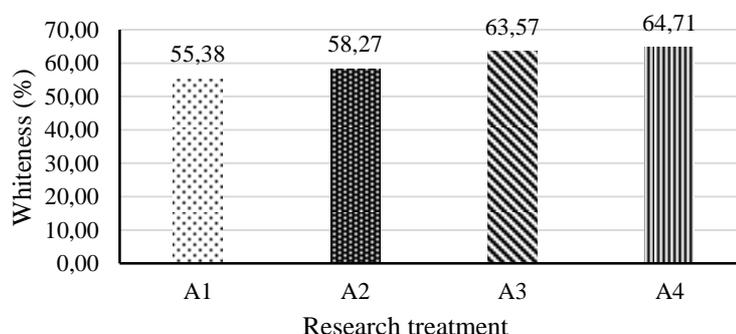
**Figure 3** Histogram of ATC flour bulk density

Bulk density values ranged between 0.093-0.124 g.mL<sup>-1</sup> (Figure 3), with the highest bulk density was found in ATC flour extracted using KOH 6% (A<sub>1</sub>) and the lowest was that extracted using NaOH 6% (A<sub>3</sub>). Analysis variance results showed that treatment with different of type and concentration of alkali solution have no significant effect on the bulk density of ATC flour produced.

A very small change in bulk density of powder products can cause large of flow ability (Levy & Kalman, 2001). Bulk density parameter can be used to see the perfection of the drying process or the uniformity of the shape and size of flour particle (material). The powdered product by means of slow drying will have higher bulk density than fast drying.

### 3.4. Whiteness

Whiteness is common measurement to determine the color of flour which having different brightness levels (Hutching, 1999). Measurement of whiteness on a scale of 0-100% ranged from black (0%) to white (100%).



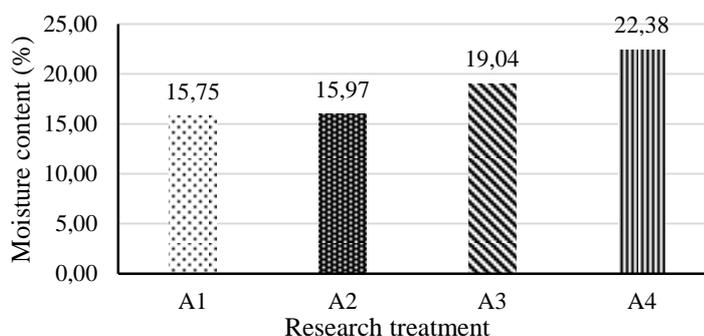
**Figure 4.** Histogram of ATC flour whiteness

Whiteness of ATC flour ranged from 55.38-64.71% (Figure 4) with the highest value in the treatment using NaOH 8% (A<sub>4</sub>), the lowest in treatment using KOH 6% (A<sub>1</sub>). Whiteness in this study was similar to the value of the whiteness flour semi refined carrageenan research results Sedayu et al., (2008), which 55.5-64.3%. Analysis variance of whiteness of ATC flour indicate that the type and concentration of alkali solution used in the extraction process ATC flour influenced to the whiteness of ATC flour.

Whiteness of ATC flour as in Figure 4 show that extraction using NaOH solution produces the ATC flour more white than the ATC flour extraction using KOH solution. This figure also shows that the higher the concentration of alkali solution is used to produce higher whiteness values.

### 3.5. Moisture content

The moisture content of food is an important factor in quality, preservation and resistance to deterioration (Nielsen, 2009) and became one of the main requirements for the safety of food products because its relate to shelf life and durable of product at the time stored in a long time, because it is related to microbial activity during ATC flour storage process. Analysis of moisture content on ATC flour aims to determine the free water content in the flour, because the moisture content in the flour product is very influential on its shelf life.



**Figure 5.** Histogram of ATC flour moisture content

Moisture content of ATC flour ranged between 15.97-22.38% (Figure 5), with the highest value in moisture content was found in ATC flour treated using NaOH 8% (A<sub>4</sub>) and the lowest was that treated using KOH 6% (A<sub>1</sub>). Analysis variance results showed that type and concentration of alkali solution significantly influence the moisture content of ATC flour. ATC flour extraction process using KOH solution produces a lower moisture content compared to ATC flour extraction using NaOH. Same type of solution (KOH) in different concentrations did not give different effect on the value of moisture content, but different things happen on moisture content of ATC flour extracted using NaOH solution (Table 1).

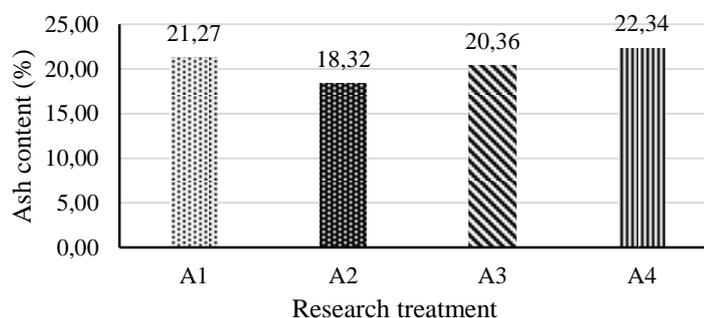
Moisture content of ATC flour in this study meets the requirements of SNI with maximum value is 17% whereas the export quality standards according to the FAO ranged from 15-21%. This result is similar to SRC moisture content of Sedayu et al., (2008) which ranged from 17.75-20.61% and higher than ATC moisture content from research results of Darmawan et al., (2015), which 6.62-10.42%.

The measured moisture content of ATC flour was done to measure of chemically bonded water, whereas the free water may have evaporated, the longer the drying process tends to cause the moisture content of the flour to decline. High concentration of solution used for the extraction resulted in the increase of ATC flour produced, it is suspected that the high concentration of alkali solution increases the hydrophilic nature of seaweed so that the seaweed can absorb sufficient water during the extraction process.

### 3.6. Ash content

Analysis of ash content in general performed to determine the mineral content contained in ATC flour. Ash content of a foodstuff indicates the amount of minerals contained in the foodstuff

(Apriyantono et al., 1989). Values are based weighing the residual ash content of minerals as a result of burning organic material.



**Figure 6.** Histogram of ATC flour ash content

ATC flour ash content ranged from 18.32-22.34% (Figure 6) with the highest value was found in ATC flour extracted using NaOH 8% (A<sub>4</sub>) and the lowest was extracted using KOH 8% (A<sub>2</sub>). The ash content result of this research were higher than ash content of the SRC that ranged from 16.73-18.50% (Sedayu et al., 2008), almost similar to ash content of the ATC which 19.82-24.33% (Darmawan et al., 2013) and lower than ash content of carrageenan were made using different KOH concentration which 26.3-37.2% (Tunggal & Hendrawati, 2015).

Analysis variance of ash content value indicated that type and concentration of alkali solution significantly influence the ash content of ATC flour generated. ATC flour extraction process using KOH has a lower ash content compared with the results of extraction using NaOH.

Ash content of ATC flour is natural mineral content contained in seaweed and minerals stick to the seaweed, so that during the process of mineral extraction and neutralization lot is wasted in the solution used for the extraction and leaching time of neutralization. Ash content of wet seaweed ranged between 24.9-36.4% (Kilinc et al., 2013), naturally seaweed used in the food processing industry has a high mineral content such as Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>+2</sup> and Mg<sup>+2</sup> (Basmal et al., 2003). Meanwhile, Wenno et al., (2012) stated the longer the life of seaweed will produces carrageenan with high ash content. This research showed that high concentration of KOH, then decreased the ash content of ATC flour and in other way, high concentration of NaOH resulted ATC flour with high ash content.

The ash content obtained in this study was quite high and exceeds the quality standards of export carrageenan and ATC established by FAO with maximum value of 4%. The same was said by Dwi (2012), that the ash content of a maximum of seaweed flour  $\geq 4\%$ , if bigger than 4%, it is negatively correlated to the degree of purity of ATC flour because the higher the ash content showed high levels of minerals resulting in lower purity of carrageenan resulting. This is presumably due to factors that have not been clean washing and filtration were less than perfect so that there is no dirt filtered out and carried away.

#### 4. Conclusions

The type and concentration of alkali solution used in ATC flour extraction process from *Kappaphycus alvarezii* seaweed had significant effect on yield, gel strength, whiteness, moisture and ash content, and had no significant effect on bulk density. ATC flour characteristic in this research were yield of 20.73-28.57%; gel strength 1640.68-28774.16 g.cm<sup>-2</sup>; bulk density 0.09-0.12 g.mL<sup>-1</sup>; whiteness 55.38-64.71%; moisture content 15.75-22.38% and ash content 18.32-22.34%.

#### 5. Suggestion

Further need a research on physicochemical characteristics of ATC flour from *Kappaphycus alvarezii* using another type of alkali solution with optimal concentration.

## References

- [1] AOAC [Association of Official Analytical Chemist]. 2005. *Official Methods of Analytical of The Association of Official Analytical Chemist*. Washington, DC: AOAC.
- [2] Apriyanto AD, Fardiaz D, Puspitasari N, Sodarnawati, Budiyanto S. 1989. *Food Analysis*. Pusat Antar Universitas Pangan dan Gizi. IPB. Bogor.
- [3] Basmal J, Syarifudin, Ma'ruf WF. 2003. Effect of potassium hydroxide on the quality of kappa-carrageenan extracted from *Eucheuma cottonii*. *Journal of Marine & Fisheries Postharvest & Biotechnology*, 11(8) pp 95-103.
- [4] Darmawan M, Utomo BSB, Mulia RAY. 2013. The quality of alkali treated cottonii (ATC) made from *Eucheuma cottonii* collected from different regions in Indonesia. *Squalen Bulletin of Marine & Fisheries Postharvest & Biotechnology*. 8 (3) pp 117-127.
- [5] Dwi SW. 2012. Peningkatan kualitas produk "Agar" rumput laut *Gracilaria gigas* dengan penambahan iota-karagenan melalui pemanasan model "Smog Steam". *J. Litbang Provinsi Jawa Tengah* Vol.10 No.2
- [6] FAO [Food Agriculture Organization]. 2007. *Carrageenan*. Prepared at 68<sup>th</sup> JECFA and Published in FAO JECFA Monographs 4. pp. 1-6.
- [7] Falade KO, Okafor CA. 2013. Physicochemical properties of five cocoyam (*Colocasia esculenta* and *Xanthosoma sagittifolium*) starches. *Food Hydrocolloids* 30 (2) pp. 82-90
- [8] Hutchings JB. 1999. *Food colour and appearance*. 2nd edition. Maryland: Aspen Pub.
- [9] Kilinc B, Cirik S, Turan G, Tekogul H, Koru E. 2013. *Seaweeds for food and industrial applications*. Intech. <http://dx.doi.org/10.5772/53172>.
- [10] Kusuma WI, Gunawan WS, Rini P. 2013. Pengaruh konsentrasi NaOH yang berbeda terhadap mutu agar rumput laut *Gracilaria verrucosa*. *J. Marine Research*. Vol 2 No 2 pp 120-129.
- [11] Lanier TC, Hart K, Martin RE. 1991. *A manual of standard methods for measuring and specifying the properties of surimi*. Washington, DC: National Fisheries Institute.
- [12] Nielsen SS. 2009. Determination of Moisture Content. Food Science Texts Series book series (FSTS). *Food Analysis Laboratory Manual* pp 17-27
- [13] Ortiz J, Aguilera JM. 2004. Effect of kappa-carrageenan on the gelation of horse mackerel (T. Murphyi) raw paste surimi-type. *Food Sci Tech Int* 10 pp. 223-232. <http://dx.doi.org/10.1177/1082013204045884>.
- [14] Samsuar. 2006. *Karakteristik karaginan rumput laut Eucheuma cottonii pada berbagai umur panen, konsentrasi KOH dan lama ekstraksi*. [Tesis] Sekolah PascaSarjana Institut Pertanian Bogor. Bogor.
- [15] Sedayu BB, Basmal J, Utomo BSB. 2008. Optimalisasi penggunaan air pada proses pembuatan semi-refined carrageenan (SRC). *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*. Vol. 3(2) pp 183-191.
- [16] Singh, Kaur L, Sadhi NS, Sekhon KS. 2005. Physicochemical, cooking and textural properties of milled rice from different Indian rice cultivars food chem, 89: 253-259.
- [17] SNI [Standar Nasional Indonesia]. 2006. SNI: 01-2354.1-2006. Cara uji kimia-bagian 1: Penentuan kadar abu pada produk perikanan. ICS. 67.120.30 Badan Standar Nasional Indonesia. Jakarta
- [18] SNI [Standar Nasional Indonesia]. 2006. SNI: 01-2354.2-2006. Cara uji kimia-bagian 2: Penentuan kadar air pada produk perikanan. ICS. 67.120.30 Badan Standar Nasional Indonesia. Jakarta.
- [20] Tunggal WWI, Hendrawati TY. 2015. Pengaruh konsentrasi KOH pada ekstraksi Rumput laut (*Eucheuma cottonii*) dalam pembuatan karagenan. *Konversi* Vol. 4 No. 1. pp 32-39
- [21] Wenno MR, Thenu JL, Lopulalan CGC. 2012. Karakteristik Kappa Karaginan dari *Kappaphycus alvarezii* Pada Berbagai Umur Panen. *JPB Perikanan* Vol. 7 (1) pp. 61-68.

# Binary Opposition of Levi-Strauss in The World's First Kite (*Kaghati Roo Kolope*) on Community in District of Muna

Wa Ode Sifatu<sup>1\*</sup>, Bahtiar<sup>2</sup>, La Ode M. Aslan<sup>3</sup>, Muh. Abd. Rachman Gege<sup>4</sup>, Siti Rasiah<sup>5</sup>, La Sudu<sup>6</sup>, Irma Magara<sup>7</sup>

<sup>1</sup> Anthropology Department, Cultural Science Faculty, Halu Oleo University; Home Address: BTN UNHALU BLOK W, Number 28 Kendari, **Pos Code:** 93232, Sulawesi Tenggara, Indonesia. Telp:+62-81341762438.

Email: sifawaode@yahoo.co.id

<sup>2</sup> Sociology Department, Social and Political Science Faculty, Halu Oleo University; Home Address: BTN Kendari Permai Blok H2 Number 17, Kendari, **Pos Code:** 93232, Sulawesi Tenggara, Indonesia. Telp: 085220727674,.

Email: bahtiar\_unhalu@yahoo.co.id,

<sup>3</sup> Aquaculture Department, Fishery Science Faculty, Halu Oleo University. Home Address: BTN Unhalu Blok U Number 17, Kendari, **Pos Code:** 93232, Sulawesi Tenggara, Indonesia. Telp: 081341514869,

Email: aslaod1966@gmail.com.

<sup>4</sup> English Letter Department, Cultural Science Faculty, Halu Oleo University, Kendari, Indonesia.

<sup>5</sup> Arab Letter Department, Cultural Science Faculty, Halu Oleo University, Kendari, Indonesia.

<sup>6</sup> Indonesian Language Department, Cultural Science Faculty, Halu Oleo University, Kendari, Indonesia.

<sup>7</sup> Indonesian Language Department, Cultural Science Faculty, Halu Oleo University, Kendari, Indonesia.

\*Correspondence Author

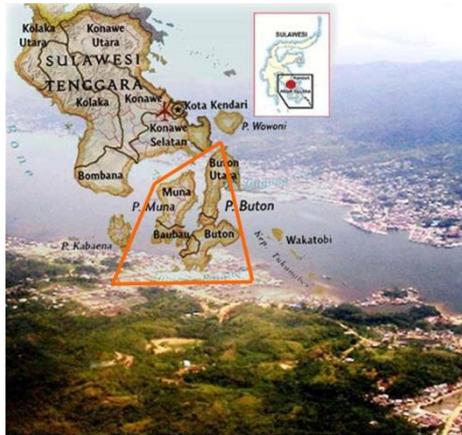
**Abstract.** The purpose of this paper is to inform readers around the world about the ethnoecology of Muna society about *Kaghati Roo Kolope*, the world's first kite using the theory of Levi-Stauss' binary opposition combined with ethnographic methods. Data collected techniques used in-depth interviews and participant observations. Technical analysis of data was descriptive qualitative. Results of this study showed that (1) Muna community's indigenous knowledge construction of *Kaghati Roo Kolope*, starts from raw materials to fly the kite. It is related to the rock, water, air, fire, sun, day and night; (2) *Kaghati Roo Kolope*'s maker is remaining only one person aged about 70 years named La Ode Pomusu; (3) The local government is currently relatively unconcerned about the disappearance of *Kaghati Roo Kolope* in the community. It is implicated to Muna's children now. They play kites made from paper technology products with nylon ropes. There has been no local government effort to overcome the loss of *Kaghati Roo Kolope* game and the scarcity of its raw material because it is consumed by domestic cattle. Necessary action done fully by the government in Muna and Muna Barat Regency to conserve and protect the tradition of the *Kaghati* is urgently needed for future generation.

**Keywords:** *Kaghati Roo Kolope*, inheritance problems, raw material management.

## 1. Introduction

Kaghati roo kolope is a traditional kite of Muna island, Southeast Sulawesi, Indonesia. The location of Muna Island. The kite is the most amazing, unique, and first kite ever been flown in

the world [1], evidenced through painting on the walls of Kabori cave **in Muna Island**, can be seen in the following picture [2].



**Figur 1.** Muna Island in Southeast Sulawesi.

(Sources: <https://www.google.co.id/imgres?imgurl=https%3A%2F%2Floreindubirding.files>)

Time Will Give More Answers' Muna Cave Painting in Muna is hard to date [3]. The mouth of Kabori Cave is covered by bushes and mosses. There are also several trees nearby, wick create a comfortable nuance to this location. Once you enter the cave, it feels vast and cold. The darkness is a common atmospher there, so you shoul use a flashlight to explore it. On the walls, you may see some simple paintings like cattle, horses, and other common animals, 4] **as follow** picture.



**Figure 2.** Liangkabori Cave Painting

(Sources: <https://www.google.co.id/search?q=Muna+Island,+Southeast+Sulawesi&tbm>)

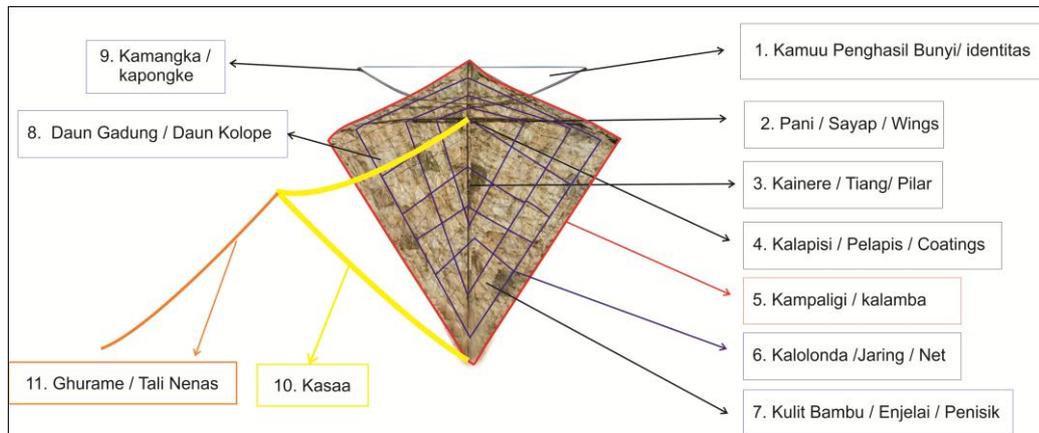
Horse become hops and games, as follow picture [5].



**Figure 3.** Horse fights as one of the attractions in the Muna community

Sources: <https://www.google.co.id/search?q=Muna+Island,+Southeast+Sulawesi&tbm>

The kite is made from *kolope* leaves [6], [7]; 8; 9]. The parts of the kite are shown in Fig. 4.



**Figure 4. Kaghati And Its Material**  
*Source: Doc. Wa Ode Sifatu, 2018*

From Fig 4, it showed parts of the kite and not yet equipped with kolope leaves. Kaghati Roo Kolope can not be exchanged and engineered with the current technological advances because all materials can not fly for seven days and seven nights in a row. The kite makers think systematically in order to produce shape, size, and balance (aerobics) of the kite. If the makers can not a balance among the parts, shape and size, it is believed that the Kaghati can not fly on air and can not survive long in the sky. The problem is Kaghati roo kolope game is considered a traditional game for parents.

The binary opposition states that the existence of the universe is always in pairs [10]. For example: left and right, top and down, day and night, female and male, hell and heaven, good and bad, hot and cold, whose position is fixed and can not be stacked. In making and positioning Kaghati using kolope leaves, it also contains the principles of binary opposition. For example all kaghati raw materials must occupy their correct position and can not interchangeable. For example, a kolope leaf that is located in the center, must be installed in the center of Kaghati, the leaf of kolope which is located on the left must be installed in Kaghati's left position, and the kolope leaf located on the right, must be installed in the right position of Kaghati. The length of the left and right wings must be balanced, either long or thick or thin. The length and position of the kasaa must be balanced between top and bottom. Some myths are still believed by the Muna people until now. For instance, kaghati maker is prohibited to lie, must fast and raw material of the kite should not be stepped by human.

When Kaghati was relatively forgotten by the people of Muna, SESulawesi Governor La Ode Kaimuddin, initiated the Kaghati local competition in 1994, located in Wakuru, the capital of Tongkuno District, Muna District. In 1995, La Ode Pomusu and his colleagues represented Southeast Sulawesi in a kite competition in Jakarta and came out winners. In 1996, La Ode Pomusu and his colleagues represented Indonesia in an international kite competition in France, and they won the competition.

The success of Kaghati roo kolope to be a winner repeatedly in international events, does not change the views of the Muna community against this traditional game. the community believes that this kite game has been considered ancient, so endangered and its raw material is difficult to obtain because it is widely consumed by domestic cattle. To conserve this traditional kite, In 2017 [8; 9], have conducted research and training for elementary and junior high school students in four traditional villages in SE Sulawesi on how to create and grow their raw materials. Their initiatives received a positive response from the children as well as from La Ode Pomusu as coach and maker of Kaghat

Research on Kaghati made from kolope leaf has been studied from various aspects both from Indonesian researchers and from abroad. From Indonesia, for instance [11], found a number of traditional values contained in it. Different forms of kites between regions in Muna [12]. It found various reasons so that Kaghati'game is always followed by ceremony and offerings [13].

Quarterly Journal of Worldwide Kite Community, Winter Spring. Orlando [14]: [6; 7; 8; 9] found Kaghati in the perspective of Islam. Kaghati had been used for the king's pre-Islamic election media [7]. From abroad, for instance [15] found the kite as a place to entertain, vacation, and do business. Studied about the puzzle of Kaghati's painting on the cave wall at Muna [1]. Quarterly Journal of Worldwide Kite Community, Winter Spring. Orlando. It explains that the age of Kaghati's painting on a rock in Muna, Indonesia is around 4,000 years [1]. Moreover, Matrix (2002) pointed out that this kaghati making showed the high technological progress in ancient Muna society at the time.

This research is a study of binary opposition about Kaghati because previous research did not examine the problem. This study was conducted in the Muna community in Muna district because until now there has been no concern for the possibility of extinction of the game. The author examines all information by using Levi-Strauss's thought about binary opposition. This study deals with how to manage, how to install and ethics (adab) in making the kite, placing the position of raw materials, which in fact can not be separated from the state of the universe. This study aims to preserve kaghati by moving the mind toward the social transformation of Muna society.

## **2. Research Methods**

This research was done from August to October 2017 in Muna District used ethnography method. Data collection technique was done using in-depth interview and participant observation. Information is encompassed by the researcher's own instrument, complemented by interview guides and observation guidelines. All informants were selected based on their experience and knowledge on kaghati. 9 (nine) informants were selected. They were: La Country, Wa Ode Baano, La Ode Kanande, La Maeka, La Ode Daera, La Ode Mudana, La Ndiri, La Ode Pomusu, and La Ode Suhufi). Of the nine informants above, the authors had selected La Ode Pomusu as the key informant based on his very experienced in making and maintaining the kite since 54 years ago. The collected data was analyzed descriptively.

Through research and training to make Kaghati which has been done in four indigenous villages in Muna District, namely Adat Parigi Village, Parigi Sub-district, Wale-ale Village, Tongkuno Selatan Sub-district, Liangkubhori Adat Village and Lohia Village, Logia Sub-district 2017, the position of all raw materials that Muna society believes can not be exchanged for its position in Kaghati, among them: the framework and the shape, the raw material, the process of flying it, and the process of ending the game.

## **3. Result and Discussion**

### ***3.1 Binary Opposition in Kaghati According to the Muna Society***

The binary oppositions referred to here are all matters pertaining to the necessity of making Kaghati Roo Kolope, such as: rock, water, fire, air, sun, day, night, and outer space. The rock becomes the growth place of Kaghati raw material. For example, wewena leaves only grow in wet areas. The place to fly it should be in a flat height area and away from the trees. Leaves of kolope and Kaghati that are ready to fly must be prevented from getting exposed to water. But while scratching the leaves of the forest's pineapple for fiber, water is essential to prevent the fibers from becoming tangled. Rain and dew water at night should be prevented from wearing on Kaghati Roo Kolope which is on the air. The deterrent is Kamuu. You who can issue sounds as their identity or identification when Kaghati is on the air. Fire serves as a standard preservative. The trick, kolope leaves on roasted above flame to wilted. While other raw materials are always placed on the fireplace of the home kitchen to always roasted fire. The good air in Kaghati's play is in the East wind season, which usually runs from April to Aguatus each year. The sun becomes a tool to dry raw materials.

Assembling Kaghati roo kolope requires thoroughness, regularity, and adherence to a number of adab. For example, during the process of making it, the manufacturer must be honest, abstinent, abstain from drinking, and never lie. If breached resulted in the assembled kite can not air as expected. The above abstinence can be useful in achieving the Jokowi-dodo-Jusuf Kalla named Mental Revolution program. The following will explain the framework and form Kaghati Roo Kolope.

### **3.2 Framework and Form of Kaghati**

The Kaghati framework has a varied form, consisting of seven forms, namely: (1) Bhangkura; (2) Burungo; (3) Matempotu; (4) Sopi rambali; (5) Ngkalei; (6) Ngkasopa; (7) Mponisi or Todo pani. Only the Sopi rambali and Ngkalei types can be flied until 2000 m . Other forms of kite are only capable of flying as high as 500 m. The scales that act as balancers do not use sizes, depending on the skill of the manufacturer. The way is measured first on the wing, if it can not be adjusted or arranged, back by way of arranges to get the balance.

Kamuu it as a balancing tool between the left and the right when Kaghati is on the air. For those who are still studying, the size can be measured according to the length of the wing by being pulled, up and down called dopurue, dofofonie bhedofosampue. The makers think systematically in order to produce the shape, size, and balance (aerobic) of a kaghati. Otherwise, Kaghati is believed to be unable to fly. The problem until now is the Kaghati game is considered a traditional game for parents, so the raw material for making kaghati is not maintained optimally by being left to be consumed by the citizen's cattle.

### **3.3 Kaghati Raw Material**

There are a number of raw materials that are not visible in the two images above because in addition to the small size, also because it is located on the inside that is not visible to the eye. For example, a Wulu called kainere is chosen depending on the size of Kaghati to be made. If the smallest size of about 100 x 75 cm for example, enough with a diameter of less than 1 cm - 1.5 cm. Wulu used must be old and dry so light.

The main raw materials of Kaghati are leaf of kolope, wewena leaf, and interrupt leaf. Among the main ingredients, the kolope leaves the least weakness, consisting of three pieces of talking stalk, the male leaves are located in the middle, female leaves are located on the left and right. The position of the middle leaf should be placed in the middle of Kaghati, the left leaf should be placed to the left of Kaghati, and the right leaf should also be placed on the right of the Kaghati skeleton. Wewena leaves can only grow in wet areas. While the weakness of the leaves only thin leaves hat can be used for Kaghati material.

The visible and invisible raw materials in figure above need to be explained. Taking leaves of kolope should be selected leaves that begin to grow black spots. If the leaves of kolope are too old and too young will easily tear. Leaves of kolope plucked with stems to become handrails in the process of baking on the flame. Leaves of kolope that has been baked then dried in the sun. If the goal is just a leaf kolope to dry, long enough to dry it a day. But to get the quality of a shiny kolope leaf like a fernis, takes time to dry it for three days. Leaves of dried baskets are then arranged, fellow leaf, females leaves are located on the right or left, from bottom to top and then clamped. The local language is called doghatie. The goal is neat and evenly distributed, stuffed with heavy objects such as boards, or placed under the mattress. Here is a leaf of kolope that has been through the process of tidied up and ready made into a kite.

Other raw materials that can be used for making kaghati is Nanasi (Leaf Pineapple Forest) is used as material for the manufacture of a kite or common rope is also called the term ghurame. Leaves of selected forest pineapple is a healthy pineapple leaves, old, healthy or not attacked by pests. Leaves pineapple forest that has been picked, then processed fiber taking. Separation of pineapple leaves of the forest is done by means of sculpting by using bamboo betung fragments that are made to resemble a knife. The bamboo hemisphere is pinned down and the leaves of the forest pineapple are pulled up to the wasted leaves of the pineapple leaves, leaving only the fiber. Next the fibers are divided according to the size of the hemp rope to be made, then dipped in the water. Through between fingers for distribution, then combed with fingers to divide the whole and evenly and disconnected fibers removed. Further dried in daylight or just diangin-aired. Once dry, the fiber has been divided, has been prevented from the dangers of hazard and it is unlikely that the fiber is united. The dried pineapple forests are spinning, then rolled over a piece of wood.

Leaf kolope ready to be made into Kaghati embedded with outer bamboo skin reed or bhasari skin. The outer shell of bamboo reed is slightly weathered so that broken ssat not leaving a piece of fiber at all. If any residual fiber fragments can damage the leaves kolope when flying. The bamboo skin of the reed is split into small pieces of about two (2) miles as a colossal leaf detector mounted on the Kaghati skeleton.

The next raw material is old, hard, and thick, Patu (Betung) used for wing bone (pani). Kaworu: the left and right edges of Kaghati's wings are softened up and can be played so as not to nengkude-de, meaning the kites fall free fall. The cause is the middle pole is too straight. In order not to nengkude-de, the top center pole or kite head should be selected bamboo reed or forest stalks that are slightly crooked. When the kite is flown, it is still nengkulepe, the way it fly left or right tilt, must be lowered to be balanced in a way; slightly heavy wings sliced a bit called dogurindae. The wings that are installed should have a long similarity between the left and right wings. To get the same length of length between the left and right wings, it is measured by a rope that must be the same length from the pole or fabric. If the kite is flying is not balanced, the kite is lowered and the wings look heavy must be sliced with a knife or cloth tie rope with pani loosened and made balanced. But if the wing lies somewhat deep, do not tie in the wings but tied on kasambangi. The outer rope called kampaligi is not net. In addition to wing material, the betung also functions as a sounding substance called kaworu or kauu made of palm leaves called bhale or rattan called Ghue.

The place of attachment of Kamuu used Towulambe (forest stalk) is called the ear, installed at either the end of the sound or the so-called kapongke or kaomangka. The size of the length is about 2 cm, serves as a place to tie your rope. A kunu that is ready to be mounted on the kite is shaped like a bow or panan which later on the rope part of the rope is on top. The process of mounting you on a kite, right at the meeting point between the vertical pole and the horizontal pole.

The next ingredients are Bhontu (batang waru), parsed small and then dry on the eyes of day. Once the dried is formed into a hemp rope, it is used for: (1) a rope called kasamba or kampaligi and a net net of spiders called kalolonda, serves as an arresting col port leaf. In addition, also for a strap balancer called kasaa.

### **3.4 The Process of Flying Kaghati**

The process of flying Kaghati roo kolope required three men of power, one man in charge of holding the rope that governs the rise and fall of the kite. one person rolls up a rope pulled from a kite, and another to take it. Kaghati roo kolope can be spent in space seven days and seven nights beratur without being withdrawn though, or without failure. If successful, the kite owners held a ritual by preparing offerings made from traditional foods, such as ketupat and eggs. The offerings are attached to the Kaghati roo colope row which is temporarily uplifted, left unbroken by bringing offerings because it is believed to be the umbrella of its owner from the sunburn when in the next day. The rope is believed to be a place to hold, while the offerings are believed to be the bearer of all the bad luck and obstacles that the owner experienced while living in the world.

### **3.5 The Process of Ending Kaghati Game roop kolope**

The game kaghati roo kolope has ended, then someone makes offerings in the form of traditional cuisine, such as: lapa-lapa, ketupat, pastries and side dishes. If the offerings are ready, the owner of Kaghati roo kolope calls sara (modim) to read the prayers together in the ritual. Before Modin recites the prayer, Kaghati roo kolope is immersed in front of the family sitting and kneeling. The eggs and ketupat were put each of them, one at the tail of Kaghati roo kolope, the left and right wingtips, in the center where the tether straps, the top and the other the top. After the recitation of prayer, Kaghati roo kolope dissected with a sharp knife, while the middle pile framework, wing frame, frame of the instrument, wrapped neatly and well kept against the fogging kitchen owner's home.

Kitchen home of Muna society. Muna's house form as shown below.



**Figure 5.** Traditional House of Muna Society.

Source:

<https://www.google.co.id/search?q=Muna+Island,+Southeast+Sulawesi&tbm>

In Figure 2 above looks the entrance of the house on the right. That's where the kitchen is located. Above the kitchen is a place to store raw materials Kaghati. It looks lower than the roof of the other roof.

#### 4. Conclusion

In order for Kaghati roop colope not to disappear, it must be developed in school from kindergarten level until high school becomes the responsibility of teacher in school. The problem is that there are teachers who do not care about the job because they are not competing to get work performance and career ladder to occupy the position of principal no longer based on work performance and career path but based on closeness to the Bupati. Scientists move the mind toward the social transformation of Muna society to Kaghati roop colope's survival depends on the Muna Regent. The Bupati needs to be trained on the importance of Kaghati roo kolope game as a world heritage from Muna. It is better for teachers in schools to try to educate the nation's children and not to reflect on the politicians in power and instead politicians treat teachers according to the applicable provisions of the State Civil Servant (ASN) as in Kaghati Roo Kolope.

#### References

- [1] Biecks, Wolfgang 2013. Lukisan *Kaghati* Di Atas Batu Di Muna, Indonesia, Dapat Membuka Cakrawala Masyarakat Tentang Betapa Terampilnya Masyarakat Masa Lampau.
- [2] <https://www.google.co.id/imgres?imgurl=https%3A%2F%2Floreindubirding.files>.
- [3] <https://www.google.co.id/search?q=Muna+Island,+Southeast+Sulawesi&tbm>.
- [4] Bahtiar, Wa Ode Sifatu, La Sudu, dan Irma Magara. 2017a. Kebertahanan Pusaka *Kaghati Roo Kolope* di Desa Adat di Sulawesi Tenggara. Laporan Hibah Penelitian Kompetitif Nasional Produk Terapan, Dibiayai Oleh: Direktorat Jenderal Penguatan Riset dan Pengembangan Kementerian Riset, Teknologi, dan Pendidikan Tinggi.
- [5] Ben Ruhe, et all. 2003 Time Will Give More Answers' Muna Cave Painting Is Hard to Date. KITE Drachen Foundation Journal Spring 2003 Journal No. 11 Spring 2003. The Drachen Foundation:Kite Archives, Science and Culture
- [6] Wa Ode Sifatu 2017a. Manfaat *Kaghati RooKolope* Bagi Masyarakat Muna Sebelum Islam. Etnoreplika: Jurnal Sosial & Budaya; Vol 5 No 3. Hlm. 192-206.
- [7] \_\_\_\_\_2017b, Penelitian Tindakan Terhadap Upaya Regenerasi Pembuat *Kaghati Roo Kolope* di Desa Adat Wale—ale, Kecamatan Tongkuno Selatan, Kabupaten Muna. Makalah Konferensi 60 Antropologi di Indonesia. Depok: Universitas Indonesia, 14-15 September 2017.
- [8] \_\_\_\_\_2017c. Manfaat *Kaghati Roo Kolope* Bagi Masyarakat Muna Kekinian. Etnoreplika: Jurnal Sosial & Budaya; Vol 6 No 1. Hlm. 53—64.
- [9] Bednarik, Robert (2000-2003). Planet. Kite Matrix [http:// www. subvision. net/sky/planetkite/asia/indonesia/sulawesi-muna.htm](http://www.subvision.net/sky/planetkite/asia/indonesia/sulawesi-muna.htm), diakses tgl 28-8-2015.
- [10] Lèvi-Strauss, Claude 1958. Anthropologie structurale, (a Language and the analysis of social laws. In Structural Anthropology, vol. 1. Claire Jacobson and Brooke Grundfest Schoepf, trans. 1963. New York: Basic Books, pp. 55-66.
- [11] La Kandi 2013. Permainan *Kaghati Roo Kolope* Dalam Etnik Muna (Kajian Bentuk, Makna, Dan Nilai). Kendari: Tesis Kajian Budaya, Universitas Halu Oleo, Kendari, Belum Diterbitkan.
- [12] Marafat, La Ode Sidu 2007. *Layang-layang Tradisional Suku Bangsa Muna, "sang juara dunia"* Kendari: Yayasan Pembinaan dan Pengembangan Sosial Budaya (APPBUD).
- [13] La Ode Mudana 2012. Persamaan *Kagahti* dan layang-layang lainnya di Indonesia. Makalah untuk kelengkapan kenaikan pangkat guru, tidak diterbitkan.
- [14] Wa Ode Husna 2016. Fungsi Mitos Asal-Usul *Kaghati Roo Kolope* (Layang-Layang) Pada Etnis Muna. Tesis, Kajian Budaya, Pascasarjana, Universitas Halu Oleo, Kendari, Belum diterbitkan.
- [15] Leitner, Elaine 2015. Testimony From the President of the KTAI, to 27th Annual Trade Show and Convention. Orlando: Kite Trade Association International.

# Inventory of Plant Moss Species (Bryophyta) Terrestrial In National Park Area Aketajawe Lolobata Central Halmahera North Maluku Province

Wirda A. Z. Umagap

Lecture of Tadris Biology IAIN Ternate.  
Email: widhadrakel@gmail.com

**Abstract.** The Objective of research is to inventory and Identify the types of plant moss (Bryophyta) terrestrial in the Area TNAL. The research sites were conducted in the Totango river water flow of TNAL area and identification was done in laboratory IAIN Ternate. Using exploration methods and collections of flora by way of roamings along the observation path or adjusted to the state of the field. The data are presented in descriptions in terms of morphology and environmental parameters, as well as a general description of the habitats of each identified moss species. Based on the results of research that the plant moss (Bryophyta) terrestrial found as many as 54 species in the TNAL along the river route Binagara village and has been identified as many as 30 species. The results of identification of moss plants were divided into 2 classes and 23 families. Class Hepaticae there are 10 species with 8 families. While the Mosses class as many as 20 species with 15 families. In TNAL also found a new type of moss and has not been found in other areas is the type of *Fossombronia* sp. There are also types of moss is not widely known by the local community. Morphology type of moss that many have capsules, spores, interesting leaves, and seta gentle stems. TNAL as a place of growth of moss plants that is at temperatures ranging from 18 ° C - 20 ° C standard category, so any air humidity range 85% -98% is still the standard category, with altitude of place 0-1.175 mdpl.

**Keywords :** *Inventory, Plant Type Moss (Bryophyta), Terrestrial.*

## 1. Introduction

### 1.1. Background

National Park Aketajawe Lolobata is a natural conservation area that is now a protected forest area, and designated as a national park because as a protector of the series from the lowlands to the mountains and most of the land biodiversity. National Park Aketajawe Lolobata is an area that represents and protects biodiversity specifically in Halmahera [1]. Biodiversity is the wealth of life on earth, in the form of plants, animals, microorganisms, genetics and their ecosystems built into the environment [2]. This one national park is located in Halmahera Maluku Northern Indonesia, or more precisely in Central Halmahera and East Halmahera [3]. The forest within the park also has various types of forests based on succession levels and needs of flora and fauna, namely primary and secondary forests. Aketajawe Lolobata National Park has a number of plant species that have not been specifically and thoroughly identified, including plant or vegetation species [4]. There are several villages in this area, one of which is the village of Binagara as a transmigration village rich in nature.

Moss is a group of plants belonging to the division of Bryophyta and is also a group of small plants that grow attached to the substrate of trees, dead wood, decayed wood, litter, soil and rocks. According to Touw, Bryophyta consists of 1500-2000 species of mosses (*true moss*) and 1500-2000 types of liverwort (*liverweed*) representing 20% -30% of all bryophyte species [5]. In life, moss is influenced by environmental factors. Each type of moss requires abiotic environmental conditions to be alive. This plant lives fertile and is often found in a humid environment [6]. Moss is one of the low plant species and part of biodiversity that has not been widely studied because at first glance it appears not to attract attention and even often regarded as the cause of the environment becomes dirty. However, when observed carefully some types of moss plants is quite interesting, both from color and life in groups to form pads such as carpets [6].

Research on moss plants in some areas in Indonesia has been done among other types in Sulawesi recorded 106 species [7], and in Borneo reported 607 species [8]. In addition there are several islands that are included in the Sunda Kelapa islands also reported the number of leaf moss, namely in Bali recorded 169 species, Lombok 152 species, Sumbawa 44 species, Flores 278 species, and Timor 46 species [9], while the diversity of moss leaves (Musci) in Bogor and surrounding areas were reported by Fleisher 1900-1908 amounted to 452 species [10]. In the framework of making moss garden in Cibodas Botanical Garden has been done exploration in several places in West Java such as Mount Gede Pangrango, Mount Salak, Geulis Cianjur mountain and some other places such as Mount Slamet in Central Java, Jambi and Kalimantan. The amounts that have been collected and available for planting in the garden of the lichen collection are 325 species [11].

Bryophyta is one small part of the flora that has not been much excavated, and is also one part of the proponents of flora diversity. Bryophyta plant inventory in North Maluku has not been revealed particularly in primary and secondary forests as protected forests in the area of Aketajawe National Park. This is based on the results of herbarium specimen collection checks in Herbarium Bogoriense has never been found specimen or report on North Maluku moss. Based on the above, then conducted research on National Park Area Aketajawe Lolobata Central Halmahera.

### 1.2. Objective

The Objective of research is to inventory and identify the Types of Terrestrial Plants of Moss (Bryophyta) In the National Park Area Aketajawe Lolobata Central Halmahera North Maluku Province.

## 2. Research Method

This research was conducted by way of exploration to observe and take the types of moss plants found along the Totango river. The area of  $\pm 3$  ha exploration in the watershed area in the forest of Aketajawe Lolobata National Park. This research was conducted in Totango river area of Aketajawe Lolobata National Park and in labolaturium IAIN Ternate as a place to take and identify moss plant species. Time spent for 2 months. The samples in this research are the types of moss plants (Bryophyta) teristerial Area of Aketajawe Lolobata National Park which is inventoried. Data on plant species were presented in a morphological form complemented by site height and habitat depiction in general from each identified moss species. And made determination (morphology and anatomy of moss plants). In this research done with several stages namely: in the field (observation at research sites in TNAL area by cruising along Totango river Binagara village) and in the laboratory (specimens of collected moss are preserved by drying or aerated to avoid damage in morphological and anatomical form of plant organ).

## 3. Results and Discussion

Based on the research that has been done in the area of Aketajawe Lolobata National Park along the river Totango Resort Binagara found as many as 58 moss plants, after being identified into 30 species of moss plants are grouped into 2 classes of Hepaticae class of 9 families and Musci as many as 14 families and environmental parameters varying range. Of the 30 species of moss plants that have been found there is a new type of type *Fossombronia sp* (Liverwort) of the musci class.

Data of the moss types are presented in the form of description of which are:

### 3.1. *Pallavicinia iyellii*

*Pallavicinia iyellii* (ribbon heart liver) of the Pallaviciniaceae family of this species are commonly found on soil and rock surfaces or in water sources. The characteristics of this moss are dark green shiny. The texture of the talus is very smooth and rather thin, rovidal ventral. Male talus produces anteridia with 2 rows parallel to the ventral and dorsal surface. While the female talus produces arkegonium as in the cup and appears at the tip of the talus. Sporophytic moss has a long seta clear white with black capsule selindris. Moss of the liver is found In the TNAL on the plateau along the river in Binagara village on the rock and ground surface, also in the bird observation track.

### 3.2. *Calypogeia tosana*

*Calypogeia tosana* (Liverwort) of the Calypodeiaceae family in general from the genus *Calypogeia* which is found near the surface of the soil. Pale green or brownish green and slightly shiny. This plant is easily recognizable by epiphytes at the peak of the culmination of each leaf. Generally associated with other liverwort less related. In the yellowish green thallus, the leaves cover, the

concave, the cells on the leaves are made up of several cells, with the shape of a line on the edge of the leaf. Have autoicous; sex of the organ / body part is not visible. Moss of the liver is found In the TNAL on the plateau along the river in Binagara village on the rock and ground surface, also in the bird observation track.

### **3.3. *Metzgeria furcata***

*Metzgeria furcata* (*Forked Liverwort*) of the Metzgeriaceae family is a smaller type of moss compared with *M. conjugata*, measuring about 0.5-1cm and 0.3-1mm wide. But this species is commonly found living together with other liverworts that are attached to tree trunks or decayed wooden stems, the lebab. Very shiny and rough when dry. This plant has a green, light-branched thallus, slightly inverted, midrib differs, rarely has hair like hard hairs along the periphery as well as on the side of the midrib fins, asexual shoots arise from the edge of it. For dioicous consisting of antheridia at the top of the fork, the male arrangement above the flower stalk also branches off. distribution; is widely present in cold regions, at 400m altitude. Moss of the liver is found In the TNAL on the plateau along the river in Binagara village on tree trunks and decayed wood, also in the path of bird observation.

### **3.4. *Fossombronia sp***

*Fossombronia sp* (*Liverwort*) of the family Fossombroniaceae is a type of moss that is closely related to Jungermannia, this species is characterized by (1) interesting plants, (2) large leaf cells, and stripes, (3) small oily bodies, homogeneously, (4) unistratose leaves at the bottom of the part, (5) companulate pseudoperianths and (6) spherical capsules with a short seta. This species is recognized by large spores with different distal sides, leaves slightly wavy along the edges and very less. The stems are shiny green, and bright, but the leaves have a length of 7mm and 3-3.5 in width. On the edge of the leaves slightly choppy with the size 1.2-1.5 mm wide and 0.8-1.2 mm; the lower part of the leaf; rhizoids purple, stems; has 20 homogeneous leaf cells, spherical, midline 2-4µm, in the middle of large, size 30 -56 x 32-112 µm. Autoicous: has an almost spherical capsule, with a diameter of 0.72-0.84mm, brownish yellow spores, midline 38-48 µm. Moss of the liver is found In the TNAL on the plateau along the river in Binagara village on tree trunks and decayed wood, also in the path of bird observation.

### **3.5. *Bazzania sp***

*Bazzania sp* (*Moss whip*) of the Lepidoziaceae family is a moss belonging to leafy liverweed. Growing on top of humus or sticking to rotting trees or wood. The branches are around 3-8mm wide. The leaves are arranged incubous, curved and rounded edges. This plant also has lobul. Ventral leaves are smaller and rounded. Leaf cells are round. Has a long rizoid, it grows perpendicular. Colored brownish yellow. Moss of the liver is found In the TNAL on the highland plains along the river line in the village Binagara in the trunks of rotting trees, also in the path of bird observation.

### **3.6. *Tricocholea sp***

*Tricocholea sp* (*Liverwort*) from the Tricocholeaceae family, the moss grows on rotted wood or tree trunks. Mossy leafy yellowish-green liver with pinnate branches. The main stem has many secondary branches growing on the trunk. Moss of the liver is found In the TNAL on the highland plains along the river line in the village Binagara in wood and tree trunks, also in the path of bird observation.

### **3.7. *Machantia geminata***

*Machanatia geminata* (*Marchantia*) of the Marchantiaceae family are easily found in TNAL. This type of plant is included in the plant and blackish purple talus, on the surface of the leaf there is a talus with 2 rows of scales. It has a female and male reseptacles and the tip of a fingered lobes 4. The liver of the liver is found In the TNAL on the river plateau area in Binagara village located on the rock and ground level, it is also on the bird watching track.

### **3.8. *Metzgeria decipiens***

*Metzgeria decipiens* (*moss liver cutting*) from the Metzgeriaceae family is easily found at the base of tree trunks, bark of tree trunks, or rotted wood. Often also join the moss liver and other true moss. This species has a simple morphological structure, the cells on the leaves and the trunk-shaped talus like a fork, are bright green. When dry it turns grayish-green. On the edge of the long-haired talus. This moss can reproduce itself with vegetative buds in the form of ventral talus. Moss of the liver is found In the TNAL on the plateau along the river in Binagara village on the rock and ground surface, also in the bird observation track.

### **3.9. *Ptychanthus striatus* Nees**

*Ptychanthus striatus* Nees (Lejeunea) of the Lejeuneaceae family, including epiphytic moss species, are often found to be drowsy at the base of the tree, rather large in size about 10-12cm long, 1-3 mm wide, dark green and dry in brownish green. Moss stems are rigid, branched, pinnate. The leaves consist of 3 rows, lateral leaves composed of incobous, part of large lobe oval with pointed tip. The cells in the middle of the leaf strand have a sacon of the heart, while the small rectangular lobes with 1-3 teeth at the end, ventral pinnate leaves, oval. The liverworm is found in the TNAL on the highland plains along the river in Binagara village at the base of the tree trunk and often found in water sources, also in the path of bird observation.

### **3.10. *Spruceanthus polymorphus***

*Spruceanthus polymorphus* (Lejeunea) of the Lejeuneaceae family are included epiphytic plants, growing creeping but not strongly attached to rocks, when dry to dark green to brownish yellow. The stems are rather stiff, irregular branches. The leaves are arranged in 3 rows, the lateral leaves of large oval widened, the ventral shape, the rounded end and the short tapered. The cells in the isodiametric leaf blade, have large trigons and contain more homogeneous oil bodies. Branching stems panajang about 1-2 branches. The liverworm is found in the TNAL on the highland plains along the river in Binagara village at the base of the tree trunk and often found in water sources, also in the path of bird observation.

### **3.11. *Lopholejeunea wittensii* Steph**

*Lopholejeunea wittensii* Steph (Lejena) of the Lejeuneaceae family is an epiphytic moss that grows creeping and is attached to the bark of a tree, when it is pale-green, it is dark brown, rarely wobbly. Leaf 3 rows, leaves lateral menyirapberbentuk large round, leaves lateral and wide. In TNAL, this type of moss is commonly found in upland plains in Binagara village where there are epiphytes in the bark of trees and there are also birdwatching tracks.

### **3.12. *Acroporium* sp**

*Acroporium* sp (*True Moss*) of the family Sematophyllaceae is a genuine moss that grows epiphytically on decaying or living living tree trunks, or living in terrestrial soils on the ground. Irregular branches, apical stem ends, leaf edges flat, but toothed. This moss has no leaf bone. The cells on the leaf at the end of the strands form a sigmoid, which progressively extends. It has a brownish stem with thick walls and green leaves. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in the rotted tree trunks and there are also birdwatching tracks.

### **3.13. *Bryohumbertia walkeri* (Mitt)**

*Bryohumbertia walkeri* (*True Moss*) of the family Dicranaceae is a moss that lives in the mountains and in various sustrats such as soil and moist rocks, also grows on wood topus. This moss is epiphytic. Moss of this type is also in the collection at KRC and Gunung Gede Pangrango area. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in rotted tree trunks and there are also birdwatching tracks.

### **3.14. *Cryptodicranum armitii* (C. Muhll)**

*Cryptodicranum armitii* (C. Muhll) (*True Moss*) from the family Dicranaceae plant is also in the collection on the River Nahuang (Central Kalimantan). Is an epiphytic plant that looks stiff. Grows in an open place on a tree trunk or branch. The color of the leaves is brownish and broad green, and narrows on the apical part. Leaf blade multiplied. Apical leaf tip. The cells on the apical leaf are round and long. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in rotted tree trunks and there are also birdwatching tracks.

### **3.15. *Calypothecium wrightii* (Mitt)**

*Calypothecium wrightii* (*Wright's Flat Moss*) of the family Pterobryaceae is a rare moss found in Tai Mo Shan with an 800m altitude. There is a moist stone surface. Moss is a perfect type and has leaves can not change when dry. The trunk encircles the surface of the stone, and branches straight. stem; perfect creeping, leaves covering, long branch 20mm. dark green, wide and small rods, imnricate branches, glossy, concave, borderline bend inward, have costa and shorter. In TNAL, this type of moss is commonly found in highland plains in Binagara village where there is epiphytes on the rock surface, also in bird observation tracks.

### **3.16. *Homalia trichomanoides* (Hedw)**

*Homalia trichomanoides* (Hedw) (*Flat Moss*) of the Neckeraceae family is a small moss normally found on the surface of a rock or moist tree near the current. It has many branches and leaves are completely complex and unchanged remains of both size and color, even when dry. Trunk; small, creeping, producing many branches with not always straight at a certain time, end branches collect, with a length of 2 cm. The leaves are shiny green, long borders. The leaf cell is six-angle to isodiametric. In TNAL, this type of moss is commonly found in upland plains in Binagara village where epiphytes on tree trunks and stone surfaces are also found in birdwatching tracks.

### **3.17. *Octoblepharun albidum* Hedw**

*Octoblepharun albidum* Hedw (*Eight-Toothed White Moss*) of the Leucobryaceae family are white-green moss species and generally spread over trees and are present in all wooded areas. Trunk; straight, small, height 10mm, many produce rhizoids. Leaves; thick, rigid, colorful and simple, apiculate, wider and mostly occupied by a costa consisting of several layers of cells, with a 5mm edge line size, a two-leaf cell. Sporophytes; long seta, 1-3mm high, straight and longitudinal capsule, peristome has 8 spaced teeth, high calyptra conical. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in the rotted tree trunks and there are also birdwatching tracks.

### **3.18. *Thuidium glaucinoides* Broth**

*Thuidium glaucinoides* (*True Moss*) of the Thuidiaceae family are Thuidium species found with altitudes of 300m or above sea level. Stick to the moist tree trunk. This plant is a mild moss like feathers and pale green. Trunk; perfect, propagate, produce bipinnate branch size 10mm, many paraphyllia on the stem. Leaf has a rod with a striped edge, has a costa with a length of about 2/3 on the leaves, branched leaves, papillose leaf cells and thick-walled. sporophytes; dioicous, has little seta and capsule. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in the rotted tree trunks and there are also birdwatching tracks.

### **3.19. *Anoetangium thomsonii* Mitt**

*Anoetangium thomsonii* Mitt (*Rolled Leaf Cluster Moss*) of the Pottiaceae family has a character with a central strand inside the rod, which is rolled by a protective leaf. This plant became very like a group in a large form, like a thick sponge that is above the moist stone surface. The rod is spray-shaped but large, unbranched, 30mm in diameter and has a rhizoid. The leaves are blackish-green, standard shaped, and in the middle is very deep. Rolled up when dry, living in damp areas, shoots, midline wrinkled, has black costa, some cells sprout, leaf cell substrate is very thick and large, and square-shaped cells. True moss has no leaf bone. The true moss is found In the TNAL on the plateau along the river in Binagara village on the moist rock is also in the bird observation track.

### **3.20. *Archidium ohioens* Shimp**

*Archidium ohioens* Shimp (*True Moss*) from the family Archidiaceae is an unattractive moss and rare, Moss is also found hidden among the grass on moist sandy soil. This moss is not visible capsule. The trunk is tall and branched straight 3-10mm in size, there is a rhizoid. The leaves are slightly shiny, have strong costa, quadrilateral leaf cells with 50-70 $\mu$ m wide cell width and 6-10 $\mu$ m slightly longer. Tinted green. The true moss is found In the TNAL on the plateau along the river in Binagara village on the surface of the soil is also found in the bird observation track.

### **3.21. *Acanthorrhynchium papillatum* (Harv)**

*Acanthorrhynchium papillatum* (Harv) (*True moss*) from the family Archidiaceae is an unattractive moss and rare, Moss is also found hidden among the grass on moist sandy soil. This moss is not visible capsule. The trunk is tall and branched straight 3-10mm in size, there is a rhizoid. The leaves are slightly shiny, have strong costa, quadrilateral leaf cells with 50-70 $\mu$ m wide cell width and 6-10 $\mu$ m slightly longer. Tinted green. The true moss is found In the TNAL on the plateau along the river in Binagara village on the surface of the soil is also found in the bird observation track.

### **3.22. *Vesicularia reticulata* (Dozy & Molk)**

*Vesicularia reticulata* (Dozy & Molk) (*Net Bladder Moss, Erect Moss*) of the Hypnaceae family is epiphytic moss in wet and damp places in places such as in decayed, decayed trees or trees. The moss is also collected from around KRC. Colored green, has a tight and irregular branching. The arrangement of spiral leaves, very tapered at the ends and edges of the leaves tightly. Leaf cells are hexagonal. Rhizoid attached to the leaves, brownish. In TNAL, this type of moss is commonly found in

upland plains in Binagara village where there are epiphytes on tree trunks and decayed wood, as well as on birdwatching tracks.

### **3.23. *Didymodom vinealis* Brid**

*Didymodom vinealis* Brid (*Twin Teeth Moss*) from the Pottiaceae Moss family is rare and well known in the highlands of 300m. Very thick and growing on a moist rock, hidden among the grass. Moss has a brown color. The stem is not branched and straight, with a height of 30mm, brownish colored on top of red. Leaves have a length of 3mm, edges have the edge, the costa is located at the leaf tip, leaf cells have 2 papillae and thick-walled, and very thin. Sporophytes seta size 15mm, straight capsule wrapped around. In TNAL, this type of moss is commonly found in the highlands of the river lane in Binagara village where there are epiphytes in moist rocks, as well as in birdwatching tracks.

### **3.24. *Entodon viridulus* Card**

*Entodon viridulus* Card (*Green Silk Moss*) from Entodontaceae family is a type of short-sized moss found in tree trunks and on the rock surface. Has a border on the top of the leaf and a little tip. Trunk; creeping and branching, branches and stems are almost the same, with a length of 4cm. Glossy, branches and leaves on the stem, concave-shaped, long edge line except the leaf tip, have leaf cells, there are 2 costa, which is less clear. Sporophytes; seta straight, the length is about 15mm, yellowing color, longitude capsule, deep brown, has calyptra long. In TNAL, this type of moss is commonly found in upland plateau areas in Binagara village where there are epiphytes in tree trunks and stone surfaces, as well as on birdwatching tracks.

### **3.25. *Macromitrium reinwardtii* Schwaegr**

*Macromitrium reinwardtii* Schwaegr (*Umbrella Moss*) from the family Orthotrichaceae is a moss. This shape is similar to *M. ferriei*, with the color of the leaves. This type is smaller in size and there are many cells inside the leaf. Moss is mostly found on the surface of sea water about 300m, creeping on the rock surface, producing short branches, straight, long leaf strands about 6 mm. Leaves are brownish green, oblong-lanceolate stems, have the costa reach the tip-margins leaves slightly and bent back; thick-walled leaf cells, rounded, slightly larger leaf branches; the shape is similar to the brick leaves. In TNAL, this type of moss is commonly found in upland plateau areas in Binagara village where there are epiphytes in tree trunks and stone surfaces, as well as on birdwatching tracks.

### **3.26. *Pohlia camptotrachela* (Rens & Card)**

*Pohlia camptotrachela* (Rens & Card) (*Ground Moss*) of the Brayaceae family is a different type of *Pohlia prolifera* found in the same place, this type is found in moist areas. This species also has a bunch of paired leaves. Stem: straight, unbranched, 10 mm high; rhizoids arise from the base. Leaves: green, not shiny; when dry is solid, spreads when moist; oblong-lanceolate, tip size 1.0 mm x 0.2 mm; broadest around the middle; has a border; costa in some cells. In TNAL, this type of moss is commonly found in upland plateau areas in Binagara village where there are epiphytes in tree trunks and stone surfaces, as well as on birdwatching tracks.

### **3.27. *Philonotis thwaitesii* Mitt**

*Philonotis thwaitesii* Mitt (*Small-leaved Apple Moss*) from the family Bartramiaceae is a species that has many small leaves spirally around the stems that are often reddish-green. Generally present in all types of philonotis and also in weeds, gullies, moist stone surfaces, Rods; measuring 10mm, and branched straight. Leaves; seen from the tip of the leaf appears to have a margin, costa, leaf-shaped cells rectangular. In TNAL, this type of moss is commonly found in the highland plains area of Binagara village where there are gutters and moist rock surfaces, also in bird observation tracks.

### **3.28. *Pogonatum contortum* Brid**

*Pogonatum contortum* Brid (*Twisted Hair Moss*) of the Polytrichaceae family is the largest moss of hair of all the moss found in that place. Generally present in the lowlands. This type has a simple stem and grows around 40mm. These plants are easy to recognize when they form a thick rug over the substrate. The leaves have several layers of cells. This type has leaves that are dark green striped edges and easily observed with the common eye. The rod is perpendicular, with a height of 50mm, a brown color and a lower leaf cover. The female sporophytes are shorter, producing a straight set with a length of 30mm, there is a capsule covered by rugged calyptra hair. In TNAL, this type of moss is commonly found in upland plains in Binagara village where there are epiphytes on tree trunks and decayed wood, as well as on birdwatching tracks.

### 3.29. *Trisinegastia sp Muell. Hal*

*Trisinegastia sp Muell (True Moss)* from the family Sematophyllaceae is a plant that can look shiny, forming a clump that looks stiff. Epiphytic plants in tree roots or bark are decaying on the floor of tropical rain forest. The main stem is long and grows creeping. Secondary branches are shorter and grow upright. Usually up on the apical end of many branches. Saun on oval shaped stem and part of leaf strand there is alar cell. This true moss belongs to species located in Indonesia, Malesia, Papua New Guinea and Australia. In TNAL, this type of moss is commonly found in upland plains in Binagara village where there are epiphytes on tree trunks and decayed wood, as well as on birdwatching tracks.

### 3.30. *Frullania apiculata*

*Frullania apiculata (Moss of True Brown Chocolate)* from the Frullaniaceae family is an epiphytic moss plant that creeps on trees. When viewed under a microscope it has dorsal and ventral parts on the leaves. These lichens are numerous in stems, small in size, not more than 1mm wide, mostly grown creepy and firmly attached to the substrate, green or exposed to direct light can be brownish and purplish, and the branches are pinnate-shaped. The leaves are arranged parallel in 3 rows, lateral leaves with oval shape, blunt edged edges, ventral leaf-shaped lobes 2 and oval width. In TNAL, this type of moss is commonly found in upland plains in Binagara village where there are epiphytes on tree trunks and decayed wood, as well as on birdwatching tracks.

From the identification of moss in labolaturium that when observed moss morphological characters seen under the microscope is from each species turned out to have differences in cells, reproductive organs and other organs. The parts of moss plant organs include seta, capsule, arterodium, costa, calypra, reseptakel, talus, apical, isodiametrik and spore cells [12].

Environmental parameters data at the research sites in the area of Aketajawe Lolobata National Park around the river Totango Resort Binagara is a region with a range for temperature, altitude and humidity that have differences. The first day for air temperature with a range of 09.00 hours at 18°C, at 12.00 to 19°C, and at 15.00 to 19°C, the second day at 09.00 to 18°C, at 12.00 to 19°C, and at 15.00 to 20°C, and third day at 09.00 to 19°C, 12.00 range 19°C, and at 15.00 range 20°C. To the altitude of the place is 0-1.75 mdpl because it is located in the area of the southern Aketajawe block. While the air humidity is the first day at 09.00 range of 97%, at 12.00 range of 88%, and at 15.00 range 85%, the second day at 09.00 97% range, at 12.00 range 88%, and at 15.00 range 85%, and the third day 09.00 range of 98%, at 12.00 range 89%, and at 15.00 range 86%.

TNAL has an air temperature ranging from 18°C - 20°C is still relatively slightly high, so even the humidity range 85% -98% is still relatively high category, with altitude of place 0-1.175 mdpl when compared with TN in other regions. In addition to air temperature, air humidity, soil moisture, and pH, the intensity of light affects the temperature and humidity, ie the lower the intensity of light reaching the earth's surface, the lower the temperature and the higher humidity [13].

## 4. Conclusion

The results of identification of moss plants were divided into 2 classes and 23 families. There are 12 species of Hepaticae with 9 families. While the Musci class as many as 18 species with 14 families. At the location of the study also found moss species that do not exist in other areas, then the moss is a new type of moss found in TNAL. Morphology of the type of moss has many capsules, spores, attractive leaves, seta and soft stems. The physical environment of the TNAL has an air temperature ranging from 18°C - 20°C is still relatively slightly high, so even the air humidity ranging from 85% -98% is still relatively high category, with altitude of place 0-1.175 mdpl.

## References

- [1]. Bashari, H., K. Nurdin. *Survei Keanekaragaman Hayati di Kawasan Taman Nasional Aketajawe Lolobata Halmahera Maluku Utara*. Laporan Teknis No. 05 Program Kemiteraan untuk pengelolaan Konservasi di Kawasan TN Aketajawe Lolobata. Burung Indonesia. Bogor. 2009. Hal 8
- [2]. Sujatnika, Jepson P, Soehartono T.R, Crosby M.J & Mardiasuti A. 1995. *Melestarikan Keanekaragaman Hayati Indonesia*. Jakarta. PHPA/Bird Life International-Indonesia Programme. Hal 152

- [3]. Balai Taman Nasional Aketajawe Lolobata. 2011. Dokumen Rancangan Zonasi TNAL Blok Lolobata. Balai Taman Nasional Aketajawe Lolobata. Sofifi.
- [4]. Grace E, Akmal K, Bahri S. Resolusi Konflik dalam Penataan Batas (Suatu pembelajaran di Taman Nasional Aketajawe Lolobata, Maluku Utara). 2011. hal 9.
- [5]. Hallingback, T and Hodgetts, N. 2000. *Mosses, Liverworts and Hornworts, The Nature Conservation Bureau Ltd*, Newbury, Oxford, Uk. Hal 2-7
- [6]. Hasan, M dan Ariyanti, N. 2004. *Mengenal Bryophyta (Lumut) di Taman Nasional Gunung Pangrango Volume 1*. Bogor. Penerbit Taman Nasional Gunung Pangrango. Hal 3
- [7]. Windadri, F.I. 2007. *Lumut (Musci) di Kawasan Cagar Alam Kakenauwe dan Suaka Margasatwa Lambusango*, Pulau Buton, Sulawesi Tenggara. *Jurnal Biodiversitas*. 8(3) : 197-20
- [8]. Touw, A. 1978. *The Mosses Reported Form Borneo*. Hattori Bot. Lab. 44:147-176
- [9]. Tan, B.C. 2003. *Bryophyta (Mosses). A Handout Lecture of Regional Training Course on Biodiversity And Conservation Bryophytes And Lichen*. Bogor. Indonesia. Hal 65
- [10]. Jenie, U.A. 2006. *Koleksi Bryophyta Taman Lumut Kebun raya Cibodas*. Sidanglaya. UPT Balai Konservasi Tumbuhan Kebun Raya Cibodas. Hal 25.
- [11]. Gradstein, S.R. 2003. *Biodiversity and Ecology of Bryophyta of Tropical Rain Forest. A Handout Lecture of Regional Training Course On Biodiversity And Conservation of Bryophytes And Lichen*. Bogor. Hal 130
- [12]. Hasan, M dan Santanachote, K. 2003. *A Comparison of The Biodiversity on Moss Genera Between Cibodas Botanical Garden and The Nearby Forest of Mt. Gede Pangrango National Park*. Bogor. Indonesia. hal 83
- [13]. Zhu, R. L. dan So, M. L. *Mosses & Liverworts of Hongkong* jilid 1 dan 2. Heavenly People Depot. Hongkong. 1996.
- [14]. Holtz, I, S.R. Gradstein, J. Heintrichs and M. Kappelle. 2001. *Bryophyta Diversity, Microhabitat differentiation and distribution of Life From in Costa Rican Upper Montane Quercus Forest*. *Bryologist*. Hal 105: 334-348
- [15]. Damayanti, L. 2006. *Koleksi Bryophyta Taman Lumut Kebun Raya Cibodas*. LIPI. Bogor. Hal 20.

# Generate Synthetic Earthquake Using Etabs and NGA-West2

Yudit Agus Priambodo<sup>1</sup>, Marlina Kamis<sup>1</sup> and Amiruddin Hi Muhammad<sup>2</sup>

<sup>1</sup>Civil Engineering Department, Universitas Muhammadiyah Maluku Utara, Ternate, Indonesia

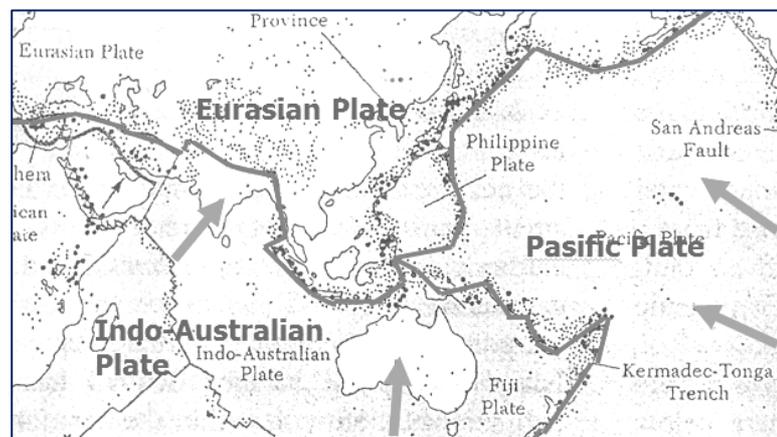
<sup>2</sup>Civil Engineering Department, Universitas Nuku, Tidore, Indonesia

**Abstract.** Scaling of ground motion is required for time history analysis for building structure design. NGA-West2 and Etabs are some of the software for this purpose. In this research will compare the result of scaling with NGA-West2 from Pacific Earthquake Engineering Research Center (PEER) and Etabs from Computers & Structures, Inc. (CSI). Use seven records of ground motion from PEER with the single period method will present application both of software. The comparison result of maximum absolute acceleration in time history analysis to target spectrum shows that NGA-West2 has well matched for MSE value under 20 than Etabs but for MSE value more than 20, Etabs is better with under 10% difference. From this research, we know when to use both of software to generate a synthetic earthquake.

**Keyword :** Synthetic, ETabs, NGA-West2

## 1. Introduction

Indonesia is a country located in the meeting area of three major tectonic plates, there are Eurasian, Indo-Australian, and Pacific. Interestingly these three plates meet in the province of North Maluku. Therefore, Indonesia has a high enough earthquake threat that civil engineers must correctly consider the effects of seismic loads in building design.



**Figure 1.** The meeting of three tectonic plates in Indonesia

Current seismic load analysis methods are the static equivalent method, response spectrum method, and time history method. The use of these three methods shall be governed by SNI 1726: 2012 code section 7.6 [1] of the analytical procedures in which the structural analysis used shall refer to Table 13. In this code, the limits of the use of procedures or methods of analysis are based on seismic design categories, structural systems, dynamic properties, and regularities.

Of the three analytical methods, time history analysis is the most accurate because both the static equivalent and response spectrum is a simplification of the time history analysis. [2] Nonlinear time history analysis is the most advanced tool for the study of structural response due to seismic load. [3] Nonlinear time history analysis is the most fixed procedure for calculating the seismic load. In its application, time history analysis requires recordings of ground motion from earthquakes that have occurred. With the recording of the ground motion, the building is loaded with a real earthquake and then studied the structure response.

The need for ground motion recordings can be obtained one of them on the website of Pacific Earthquake Engineering Research Center, abbreviated as PEER [4]. PEER provides a wide range of ground motion database in the world, especially major earthquakes that have occurred. However, in the application of time history analysis, the ground motion recordings cannot be directly used because they are not in Indonesia. This relates to the soil structure in Indonesia which is different from the place where the ground motion occurred. Therefore, SNI 1726: 2012 [1] chapter 11.1.3.1 and 11.1.3.2 mention that the ground motion shall be scaled in such a way that the average spectrum response value with damping of 5 percent of all ground motion corresponding to the site shall not be less than the response spectrum local design for the period range from  $0.2T$  to  $1.5T$ , where  $T$  is the natural vibration period of the structure in the fundamental vibration range for the direction of the analyzer response.

PEER [4] provides tools in searching for both scaled and unscaled ground motion. The tool is NGA-West2 that runs online. In addition, Computers and Structures Inc. or CSI [5] that produce analytics software such as Etabs also provide scaling tools especially since version 15.0.0. This version of Etabs provides two choices of scaling methods there are frequency domain and time domain method. With that option, the user can do a comparison of which method gives the best scaling. In 2015, Csiamerica launching video tutorial for synthetic earthquake generation for Etabs version 2015. In this video, explain that to generate a synthetic earthquake in Etabs, we can choose option matched to target spectrum in time history function. The structure model is a cantilever with 1.002 seconds of the fundamental period. There are two methods for scaling ground motion is given. First is frequency domain and second is time domain. We can use both of them to determine where the good match result.

Ground motion scaling based on time domain [6], which uses the Kramer method. This procedure is based on minimizing the difference between the spectrum of ground motion response and the target spectrum in terms of least squares. The methodology proposed here considers the Difference as the difference evaluated by the integral. A frequency domain matching methodology uses an actual record to produce a similar motion that matches almost perfectly a target (design) spectrum. In this method, an actual motion is filtered in a frequency domain by its spectral ratio with the design target spectrum. Fourier spectral amplitudes of an input motion are modified while the Fourier phases of that remain unchanged during the entire procedure. Preservation of phase characteristics is important for non-linear time domain analyses because the non-linear solution can be sensitive to the phasing of the individual time history. In order to keep the phases, one applies to the signal a real-only "transfer function" (i.e., with a zero-imaginary component), to rescale the Fourier amplitudes. The technique is repeated iteratively until the desired matching is achieved for a certain range of periods. The more iterations result in better compatibility with the target design spectrum [7].

The comparison result of absolute acceleration in time history analysis with the target spectrum for three ground motion record from PEER concluded that scaling using NGA-West2 for MSE value under 1 enough closer than Etabs result. Choosing scaling method is very important to influence for absolute acceleration result of the structure with seismic loading [8].

This study will compare the scaling results of ETABS and NGA-West2 software from PEER where both of them have the same options referring to ASCE code to define the target spectrum. Note that SNI 1726: 2012 also refers to ASCE 7-10 so both applications can be used by Indonesian civil engineers.

## 2. Methods

The procedure in this research is explained below :

### 2.1. Literature study

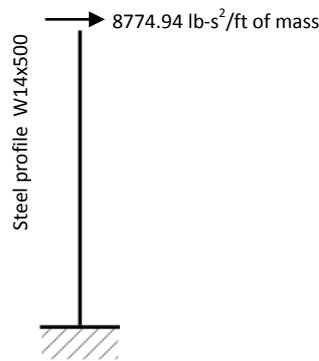
SNI 1726:2012 about scaling ground motion

- Procedure searching ground motion database unscaled using NGA-West2.
- Procedure to generate synthetic earthquake with Etabs v15.0.0 using option *Matched to Response Spectrum* in time history function.
- Procedure time history analysis with Etabs 2016 Evaluation.

### 2.2. Structural model

Making a structural model in Etabs 2016 Evaluation from Computers and Structures, Inc (CSI) for application the ground motion record. Structure model is the same as in Etabs video tutorial for

Synthetic Earthquake Generation. This model is a cantilever with at the end is given 8774.94 lb-s<sup>2</sup>/ft of mass and have 1.002 seconds of the fundamental period. The material is steel profile W14x500.



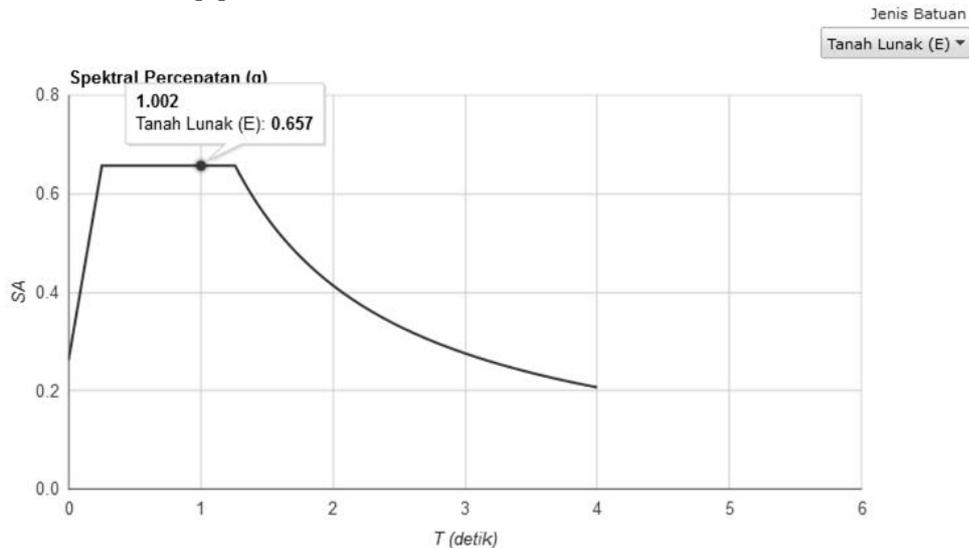
**Figure 2.** Structure model used

**2.3. The ground motion record**

Collect some ground motion record from NGA-West2 with magnitude 6-7 SR. This magnitude ever happens in Ternate in June 2016. The ground motion taken are have Minimize Mean Squared Error (MSE) close to zero and greater than one. Scaling method use a single period option with value 1.002-second corresponding fundamental period of the structure. The direction is select for H1 and suite average is arithmetic.

**2.4. Time history function and response spectrum function**

Make time history function in Etabs of the ground motion record above. Make response spectrum function of Ternate for the soft soil to get a target spectrum. This data is taken from website Desain Spektra Indonesia [9].



**Figure 3.** Spectrum response of Ternate for soft soil

**2.5. Ground motion scaling**

Conducting ground motion scaling using Etabs 2016 Evaluation with two methods there are frequency domain and time domain.

**2.6. Analysis**

Perform a Time History analysis with Etabs 2016 Evaluation for multiple ground motion recordings. Displays the maximum absolute acceleration result of all Time History analysis and spectrum target value on the fundamental period of the structure in tabular and figure.

### 3. Results and Discussion

Perform a Time History analysis with Etabs 2016 Evaluation for multiple ground motion recordings. Displays the maximum absolute acceleration result of all Time History analysis and spectrum target value on the fundamental period of the structure in tabular form and discusses it.

#### 3.1. PEER ground motion record data

The ground motion recorded data taken from PEER via NGA-West2 is shown in Table 1. This data is for magnitude 6-7 SR. the scaling method uses Minimize Mean Squared Error (MSE). The search results show 100 pieces of recordings but take 7 pieces of recording with MSE value between 0.01 - 30.853 according to the search results from NGA-West2.

#### 3.2. Analysis

From the result of modal analysis using eigenvalue method, the fundamental period of the structure is 1,002 seconds. The acceleration of the target spectrum for the period seen from the response spectrum for Ternate city is 0.657g or 6442.97mm/s<sup>2</sup> (g = 9806.65 mm/s<sup>2</sup>). The name of the analysis is given in Table 2.

Next, direct integration of time history analysis using the Hilber-Hughes-Taylor method. The results of the analysis are shown in Fig. 4 - 17 in the form of maximum absolute acceleration result of the structure and Table 3 - 5 is the comparison of maximum absolute acceleration result with the target spectrum.

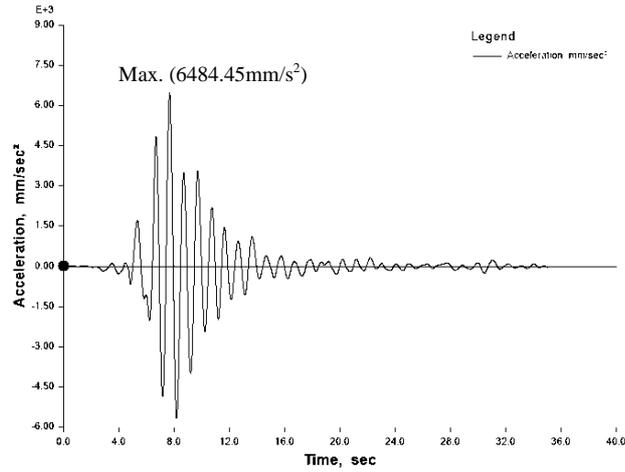
**Table 1.** PEER ground motion database

No	Mean Squared Error	Scale Factor	Earthquake Name	Station Name	Magnitude
1	0.2454	0.9989	"Imperial Valley-06"	"El Centro Array #7"	6.53
2	1.0025	3.0877	"Imperial Valley-06"	"Brawley Airport"	6.53
3	5.0228	11.3621	"San Fernando"	"Port Hueneme"	6.61
4	10.3618	39.5904	"San Fernando"	"Wheeler Ridge - Ground"	6.61
5	15.6829	64.1663	"San Fernando"	"San Diego Gas & Electric"	6.61
6	22.7943	78.6787	"Parkfield"	"San Luis Obispo"	6.19
7	33.5179	447.3742	"Helena_ Montana-02"	"Helena Fed Bldg"	6

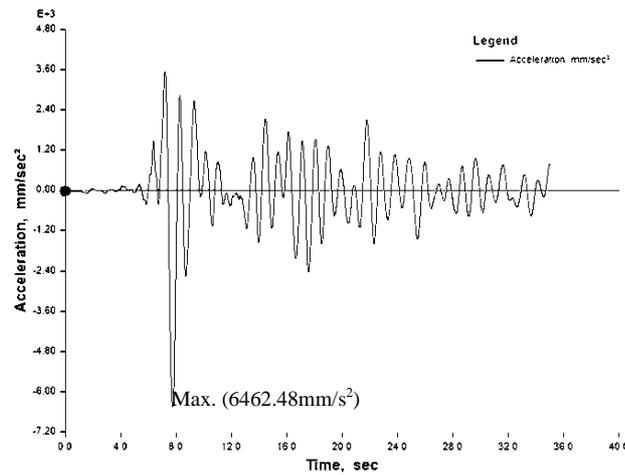
**Table 2.** Analysis name for time histroy analysis

No	NGA-West2	Etabs Eval with FD	Etabs Eval with TD
1	TH NO 1 NGA-West2	TH NO 1 E FD	TH NO 1 E TD
2	TH NO 2 NGA-West2	TH NO 2 E FD	TH NO 2 E TD
3	TH NO 3 NGA-West2	TH NO 3 E FD	TH NO 3 E TD
4	TH NO 4 NGA-West2	TH NO 4 E FD	TH NO 4 E TD
5	TH NO 5 NGA-West2	TH NO 5 E FD	TH NO 5 E TD
6	TH NO 6 NGA-West2	TH NO 6 E FD	TH NO 6 E TD
7	TH NO 7 NGA-West2	TH NO 7 E FD	TH NO 7 E TD

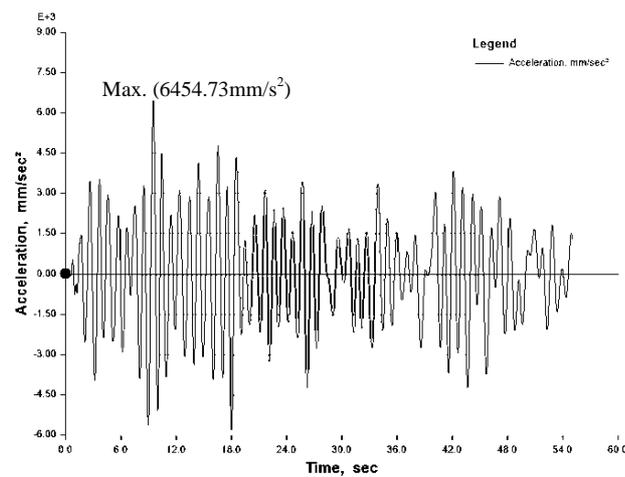
Information : FD(frequency domain); TD(time domain)



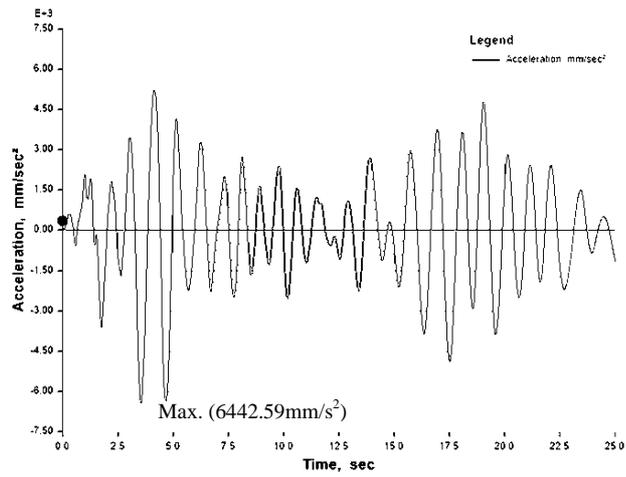
**Figure 4.** Maximum absolute acceleration of TH NO 1 NGA-West2



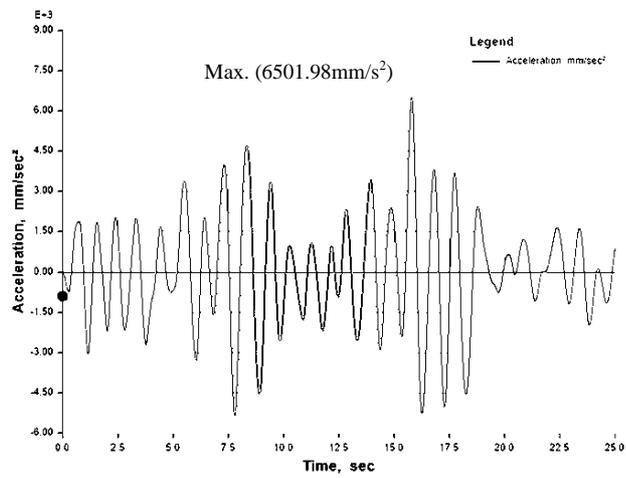
**Figure 5.** Maximum absolute acceleration of TH NO 2 NGA-West2



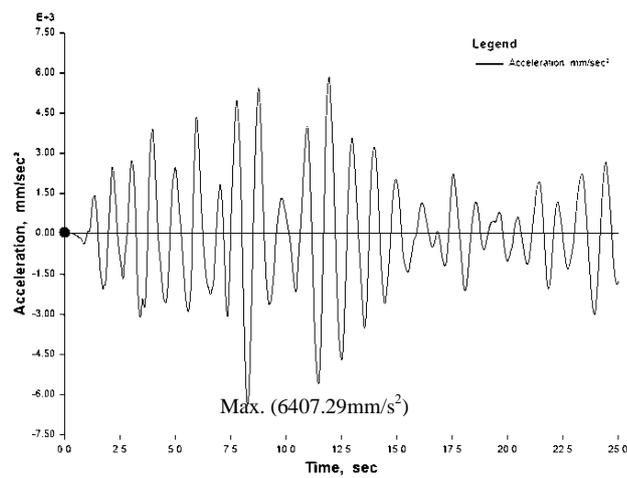
**Figure 6.** Maximum absolute acceleration of TH NO 3 NGA-West2



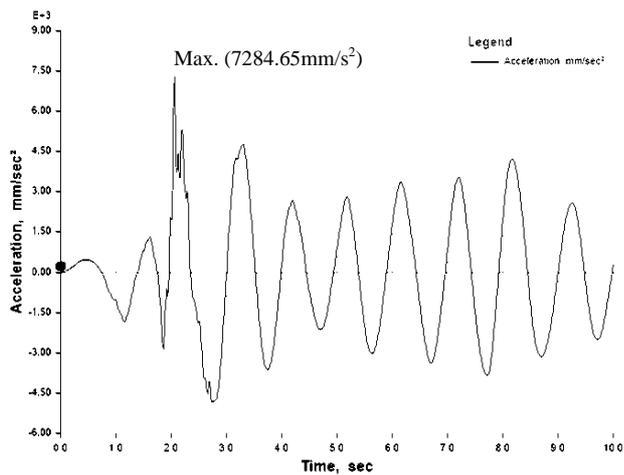
**Figure 7.** Maximum absolute acceleration of TH NO 4 NGA-West2



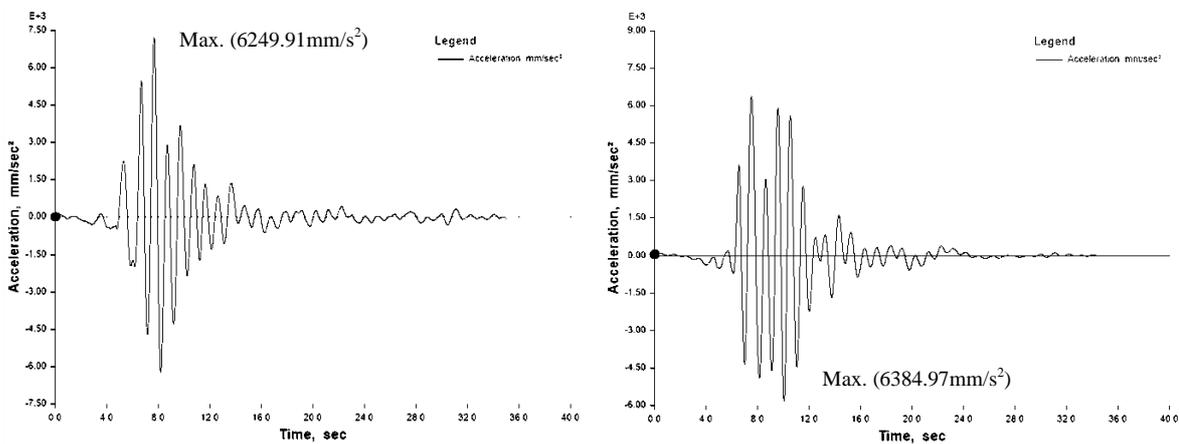
**Figure 8.** Maximum absolute acceleration of TH NO 5 NGA-West2



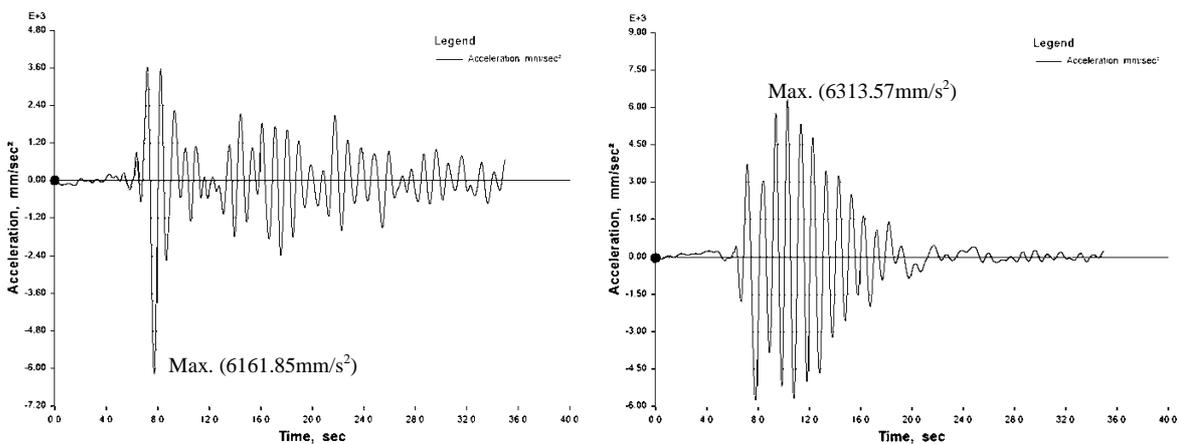
**Figure 9.** Maximum absolute acceleration of TH NO 6 NGA-West2



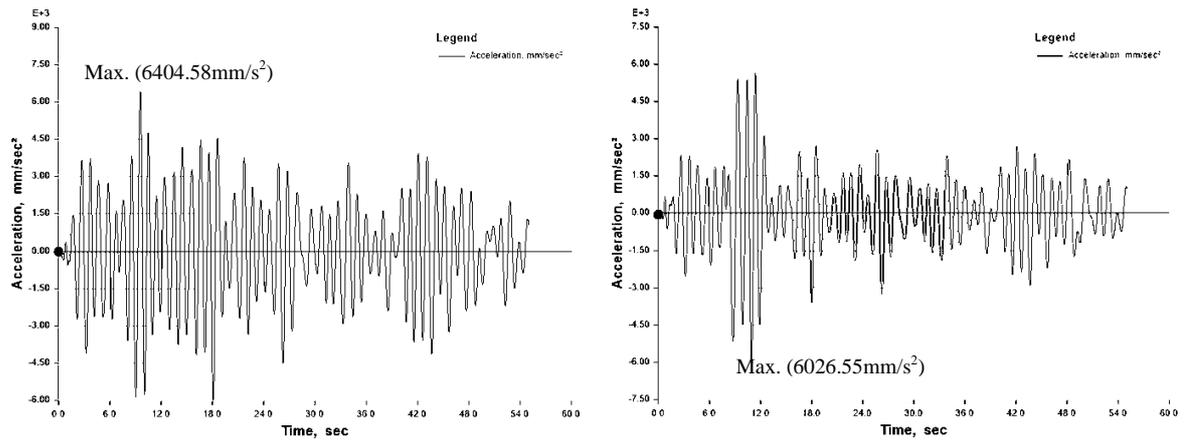
**Figure 10.** Maximum absolute acceleration of TH NO 7 NGA-West2



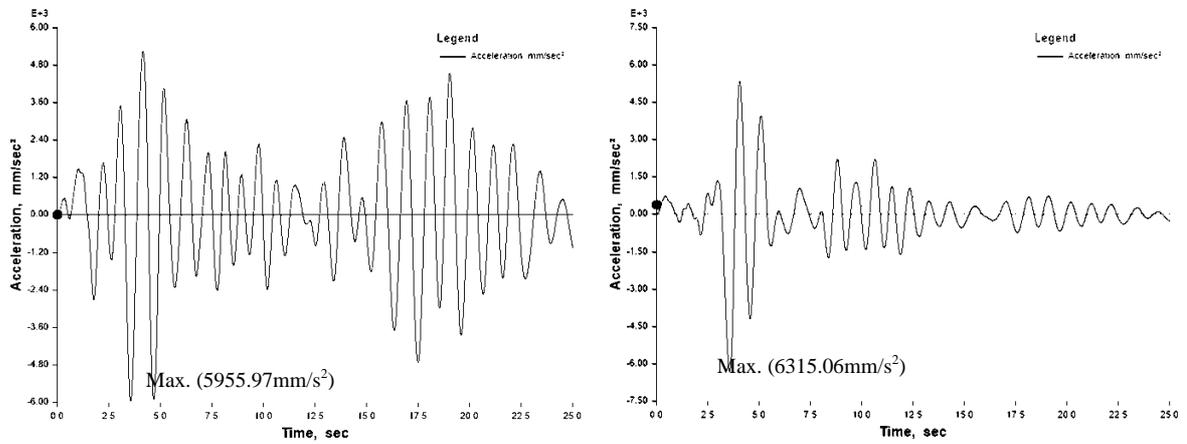
**Figure 11.** Maximum absolute acceleration from left for TH NO 1 E FD and TH NO 1 E TD



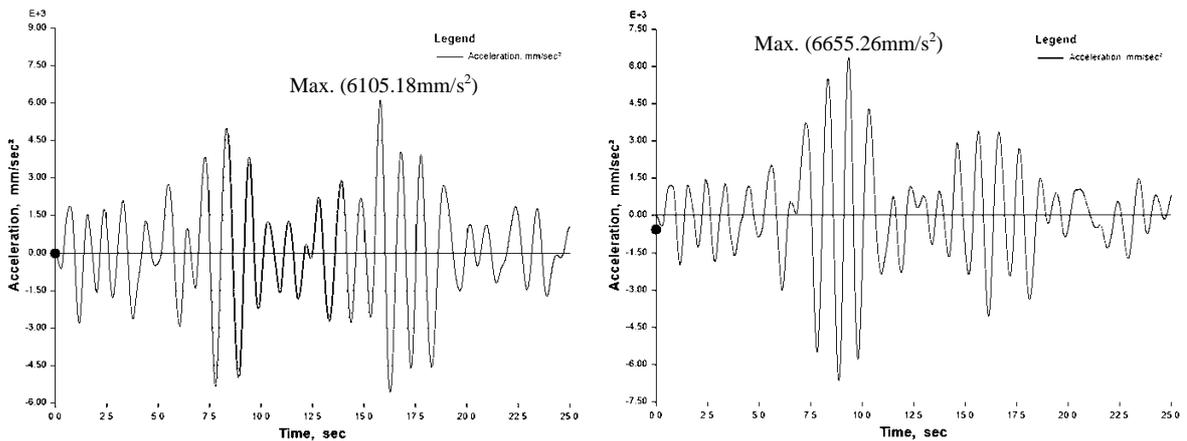
**Figure 12.** Maximum absolute acceleration from left for TH NO 2 E FD and TH NO 2 E TD



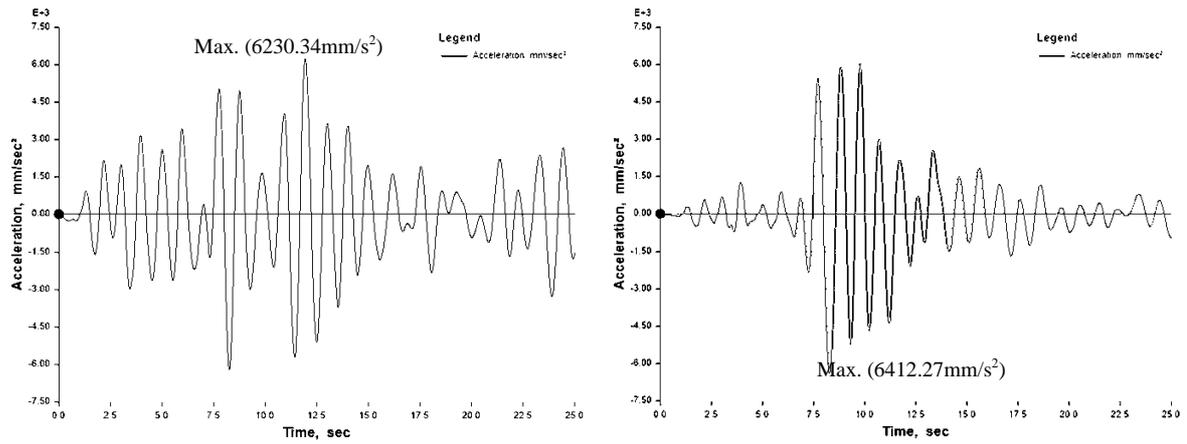
**Figure 13.** Maximum absolute acceleration from left for TH NO 3 E FD and TH NO 3 E TD



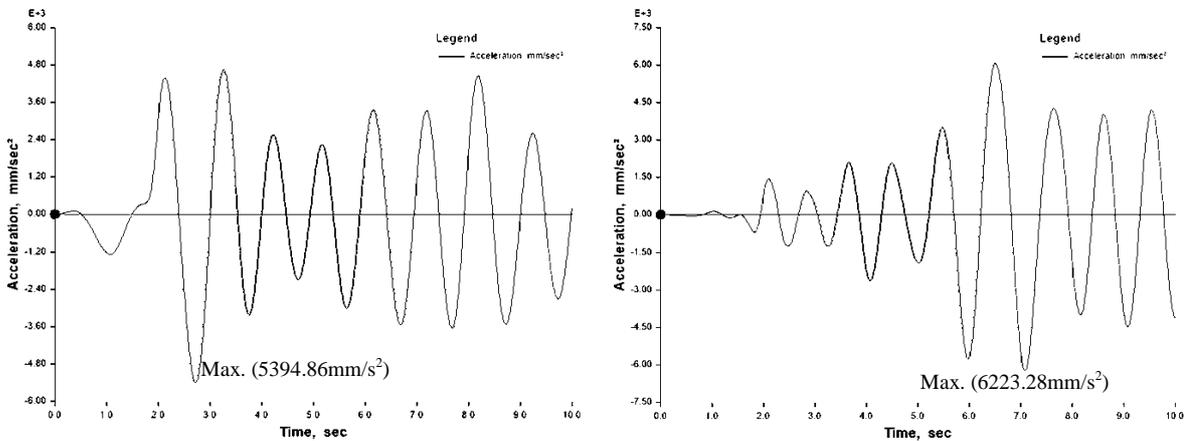
**Figure 14.** Maximum absolute acceleration from left for TH NO 4 E FD and TH NO 4 E TD



**Figure 15.** Maximum absolute acceleration from left for TH NO 5 E FD and TH NO 5 E TD



**Figure 16.** Maximum absolute acceleration from left for TH NO 6 E FD and TH NO 6 E TD



**Figure 17.** Maximum absolute acceleration from left for TH NO 7 E FD and TH NO 7 E TD

**Table 3.** Maximum absolute acceleration and difference from target spectrum for MSE with NGA-West2

Analysis Name	MSE	Scale Factor	Absolut Acceleration (mm/s <sup>2</sup> )	Target spectrum (mm/s <sup>2</sup> )	Difference from target spectrum (%)
TH NO 1 NGA-West2	0.2454	0.9989	6484.45	6442.97	0.64%
TH NO 2 NGA-West2	1.0025	3.0877	6462.48	6442.97	0.30%
TH NO 3 NGA-West2	5.0228	11.3621	6454.73	6442.97	0.18%
TH NO 4 NGA-West2	10.3618	39.5904	6442.59	6442.97	0.01%
TH NO 5 NGA-West2	15.6829	64.1663	6501.98	6442.97	0.92%
TH NO 6 NGA-West2	22.7943	78.6787	6407.29	6442.97	0.55%
TH NO 7 NGA-West2	33.5179	447.3742	7284.65	6442.97	13.06%

**Table 4.** Maximum absolute acceleration and difference from target spectrum for frequency domain with Etabs

Analysis Name	Absolut Acceleration (mm/s <sup>2</sup> )	Target spectrum (mm/s <sup>2</sup> )	Difference from target spectrum (%)
TH NO 1 E FD	6249.91	6442.97	3.00%
TH NO 2 E FD	6161.85	6442.97	4.36%
TH NO 3 E FD	6404.58	6442.97	0.60%

TH NO 4 E FD	5955.97	6442.97	7.56%
TH NO 5 E FD	6105.18	6442.97	5.24%
TH NO 6 E FD	6230.34	6442.97	3.30%
TH NO 7 E FD	5394.86	6442.97	16.27%

**Table 5.** Maximum absolute acceleration and difference from target spectrum for time domain with Etabs

Analysis Name	Absolut Acceleration (mm/s <sup>2</sup> )	Target spectrum (mm/s <sup>2</sup> )	Difference from target spectrum (%)
TH NO 1 E TD	6384.97	6442.97	0.90%
TH NO 2 E TD	6313.57	6442.97	2.01%
TH NO 3 E TD	6026.55	6442.97	6.46%
TH NO 4 E TD	6315.06	6442.97	1.99%
TH NO 5 E TD	6655.26	6442.97	3.29%
TH NO 6 E TD	6412.27	6442.97	0.48%
TH NO 7 E TD	6223.28	6442.97	3.41%

According to Table 3 shows that scaling results using NGA-West2 with the Minimize Mean Squared Error (MSE) method gives a fairly close result with the difference to the target spectrum. For MSE below 20 gives the difference below 10% while for MSE = 30 gives a difference of 13%. The scaling results using Etabs 2016 Evaluation in Tables 4 and 5 give a larger gap than the NGA-West2 results but still below 10% for the seven earthquake records using time domain method. For frequency domain method, Etabs 2016 Evaluation result for MSE = 30 gives a difference of 16.27% of the target spectrum. Here it appears that for MSE greater than 20 then scaled generated by NGA-West2 is less accurate while the result of Etabs 2016 Evaluation is stable under 10% if using time domain method. The choice of scaling method affects the result of the maximum absolute acceleration of structure due to seismic load. From this research, we can know when the proper use of software between Etabs and NGA-West2 in determining synthetic earthquake.

#### 4. Conclusion

The maximum absolute acceleration comparison of time history analysis of the spectrum target for the seven earthquake recordings from PEER shows that NGA-West2 is close to MSE values below 20 compared to Etabs but if the MSE value is more than 20 then the result of Etabs is more accurate. From this research, we can know when the proper use of software between Etabs and NGA-West2 in determining synthetic earthquake.

Need further study for earthquake recording is enough to be able to see satisfactory results from the software comparison between NGA-West2 from PEER and Etabs from CSI.

#### References

- [1]. SNI 1726 2012 *Tata cara perencanaan ketahanan gempa untuk struktur bangunan gedung dan non gedung* (Jakarta: Badan Standarisasi Nasional)
- [2]. Mwafy A M and Elnashai A S 2001 Static Pushover Versus Dynamic Collapse Analysis of RC Buildings *Engineering Structures* **Vol.23** pp 407–424
- [3]. Chopra A K and Goel R K 2001 *A modal pushover analysis procedure for estimating seismic demands for buildings* Pacific Earthquake Engineering Research Center (California: College of Engineering University of California Berkeley)
- [4]. PEER 2010 *Users Manual for the PEER Ground Motion Database Web Applicatio* (Berkeley: California PEER Ground Motion Database)

- [5]. Computers and Structures Inc 2015 ETABS - 19 Synthetic Earthquake Generation: Watch & Learn <https://www.csiamerica.com/products/etabs/watch-and-learn>
- [6]. Fahjan Y M, Ozdemir Z and Keypour H 2007 *Proc. Int. Conf. The 5<sup>th</sup> International Conference on Seismology and Earthquake Engineering Design Spectra* (Teheran: Iran)
- [7]. Ozdemir Z and Fahjan Y M 2007 *Proc. Conf. 6th National Conference on Earthquake Engineering* (Istanbul: Turkey)
- [8]. Priambodo, Y.A., 2017, *Proc. Seminar Nasional Keteknikan (Sintek) Universitas Khairun* 15-17 november (Ternate: Indonesia) pp 127-131
- [9]. Puskim PU 2011 Desain Spektra Indonesia [http://puskim.pu.go.id/desain\\_spektra\\_indonesia\\_2011/](http://puskim.pu.go.id/desain_spektra_indonesia_2011/)

# Campus Intellectual Product Business Development Program (PPUPIK): Utilization of Herbs as Phytobiotic in Broiler Chicken

Yusri Sapsuha<sup>1</sup>, Yunus Syafie<sup>1</sup>, Nur Sjafani<sup>1</sup> and Hasriani Ishak<sup>2</sup>

<sup>1</sup>Animal Husbandry Study Program, Agriculture Faculty at UNKHAIR, Ternate

<sup>2</sup>Mathematics Education Study Program, FKIP at UNKHAIR, Ternate

Email : yus\_ara01@yahoo.co.id

**Abstract.** The implementation of PPUPIK Organic Broiler aims at maximizing the use of agricultural and fisheries wastes in North Maluku area as feed for broiler in order to minimize the feed costs as well as utilizing herbs such as turmeric (*Curcuma domestica*), Java ginger (*Curcuma xanthorrhiza* Roxb), nutmeg leaves (*Myristica fragrans* Houtt) and clove (*Syzygium aromaticum* L) as phytobiotic in place of antibiotic to allow the production of healthy, safe-to-consume organic broiler chickens. The extensive use of antibiotic results in residue in animal husbandry products. The resistance of pathogenic microbe in humans to antibiotic has been the main health issue in the society. Animal husbandry industry should reduce the use of antibiotic in their production animals and find another alternative in controlling diseases to replace the use of antibiotic. Herbs can be used as a phytobiotic in place of antibiotic. The activity results show that the use of agricultural and fisheries wastes as well as herbs in feed can increase the broiler chicken's productivity and reduce production costs.

**Keywords:** PPUPIK, organic broiler, phytobiotic, antibiotic, feed

## 1. Introduction

The increasingly greater demand to fulfill the need for animal protein should be followed by adequate availability of this animal protein itself. Broiler chicken as a foodstuff from which protein can be obtained is demanded to have abundant availability so that the people's need for protein can be fulfilled. However, it is hard to realize it for the price of broiler chicken ration is expensive and tends to fluctuate, thus there is a need for an effort to utilize non-conventional ration materials to be broiler chicken rations.

The raw material of poultry rations basically competes with human needs. This results in an increased ration price and becomes an obstacle for newly emerging people's animal husbandry. One effort to deal with this obstacle is to utilize non-conventional ration materials which can easily be found around animal husbandry area. Leaves of white leadtree (*Leucaena leucocephala*), moringa (*Moringa oleifera*) and quick stick (*Gliricidia sepium*) are those leaves from leguminosae plants commonly found in North Maluku. Also commonly found there are fish wastes and other agricultural wastes.

Leguminosae belongs to those plant and shrub species the livestock animals cannot reach. The utilization of leguminosae plants as poultry ration materials requires human help. The leaves of these plant species can be processed into leaf flour to enable its consumption by broiler chicken. Despite the limited leaf flour addition to the ration formulation, it is still expected that it can improve the production cost efficiency.

From a nutrition analysis, it is found that the crude protein content of leaves of white leadtree (*Leucaena leucocephala*), moringa (*Moringa oleifera*) and quick stick (*Gliricidia sepium*) respectively are 9.05%, 13.05% and 11.03% (Sapsuha and Sjafani, 2007). Based on this nutrition potential, quantitatively the flour of leaves of white leadtree (*Leucaena leucocephala*), moringa (*Moringa oleifera*) and quick stick (*Gliricidia sepium*) can be used as ration materials for broiler chicken.

The utilization of phytobiotic as *Natural Growth Promoters* or NGPs have been identified as an effective alternative for antibiotic. Phytobiotic as NGPs has been extensively developed as *feed additive*, immunities, to increase performance and highly effective in improving digestive tract health

(Panda *et al.*, 2009). Not many have researched the utilization of phytobiotic in ration as a probiotic candidate. This research is conducted aiming at discovering the potential combination of nutmeg powder and clove as phytobiotic to serve as probiotic candidate which is isolated from broiler's digestive tract and to eventually produce probiotic to improve broiler's productivity and quality and to serve as NGPs.

Phytobiotic is a feed additive obtained from a plant's derivative product used in livestock animal feed in order to improve this livestock animal's performance (Windisch *et al.*, 2008). The active substance from medicinal plants is generally found in secondary metabolite form. One medicinal plant usually produces more than one secondary metabolites (**phytoalexins**, organic acid, essential oil and antioxidant), it is possible for one medicinal plant to have more than one pharmacological effects. The combination of several active substances shows higher work effectiveness as compared to the use of single active material (Ulfah, 2006).

The use of additive of nutmeg (*Myristica fragrans* Houtt) fruit flesh flour (Utami, 2011) gives positive response to broiler chicken's performance at different cage density, and according to US *Food and Drugs Adminsitrative* (FDA), nutmeg oil is known as GRAS (*Generally Recognized As Safe*), which is used as essential oil, oleoresin (free of solvent), and natural extract (including distillate) (CFR, 2005), and due to the pharmacological potential it has, nutmeg oil is used as antibacterial material (Ojechi *et al.*, 1993).

Broiler chicken is one livestock animal with high ability in converting the ration it consumes into meat. This allows quick fulfillment of people's need for animal protein. The extensive use of antibiotic leads to residue in the animal husbandry product. The resistance of pathogenic microbe in humans to antibiotic has been the main health issue in the society. The animal husbandry industry should reduce the use of antibiotic (Conway and Wang, 2000) in production animal and find another alternative in controlling diseases to replace the use of antibiotic. Probiotic can improve individual health and unlike antibiotic, probiotic does neither produce residue nor resistance (Lopez, 2000).

In this PPUPIK program, a programmed broiler chicken maintenance and feeding management system is implemented, where the feed is formulated from the flour of leaves commonly found in North Maluku area as well fish wastes as the source of protein and wastes from other agricultural products. Since these methods have not been performed by farmers in general, it is therefore expected that the implementation of proper maintenance method and balanced feeding will result in more quality guaranteed productivity of broiler chicken as compared to those produced by farmers in general. These maintenance method and balanced feeding can be broken down into as follows:

1. Quality feed from agricultural industry wastes and utilization of leaf flour.
2. Low-fat safe organic broiler meat free of chemical residues resulting from the use of antibiotic and other drugs.
3. Quality organic fertilizer.

## **2. Method of Implementation**

### **2.1. Raw Materials**

#### **a. Broiler DOC**

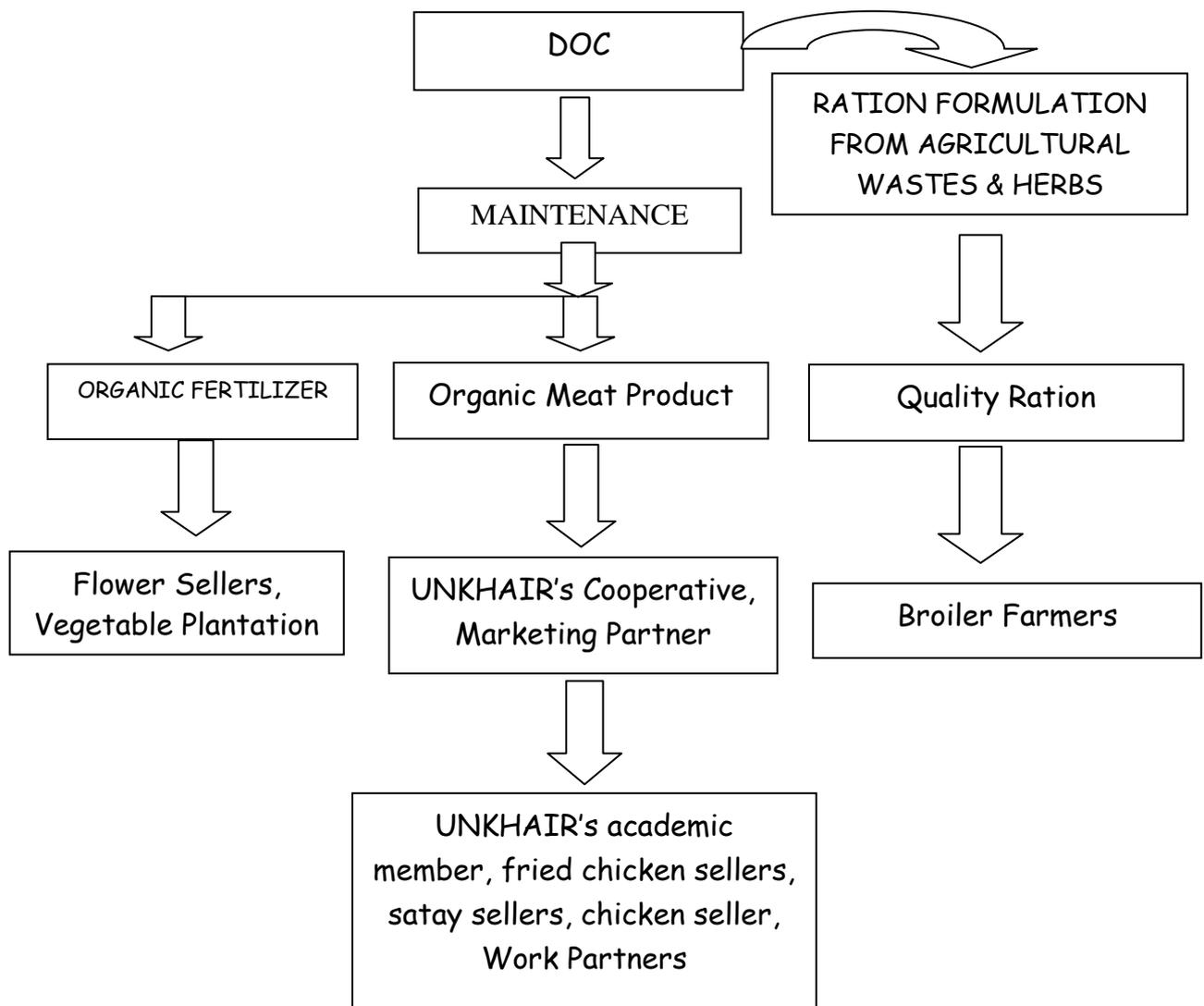
The DOCs used in this program are day one broiler chicken (DOC) whose sex is not distinguished (*unsex*) obtained from UD. Tani Satwa as the Work Partner in this project.

#### **b. Concentrate**

Concentrate is needed as the raw material of feed to prepare the ration of tofu dregs, cassava dregs, corn, coconut cake, bran, premix (micro mineral and vitamins A, D, and E). These materials are commonly found in the society around the campus.

### **2.2. Production Process**

The broiler chickens are kept in an elevated cage of 1000 chickens capacity. The tools used include feeding and drinking supplies, medical devices, feed and animal livestock scales, shovels, forks, broomsticks, ropes and water pumps. In the first year, 5,000 DOCs will be kept for 5 periods where each period has 1000 DOCs. The production process of this IbIKK (IbIKK or PPUPIK) can be seen in Figure 1.



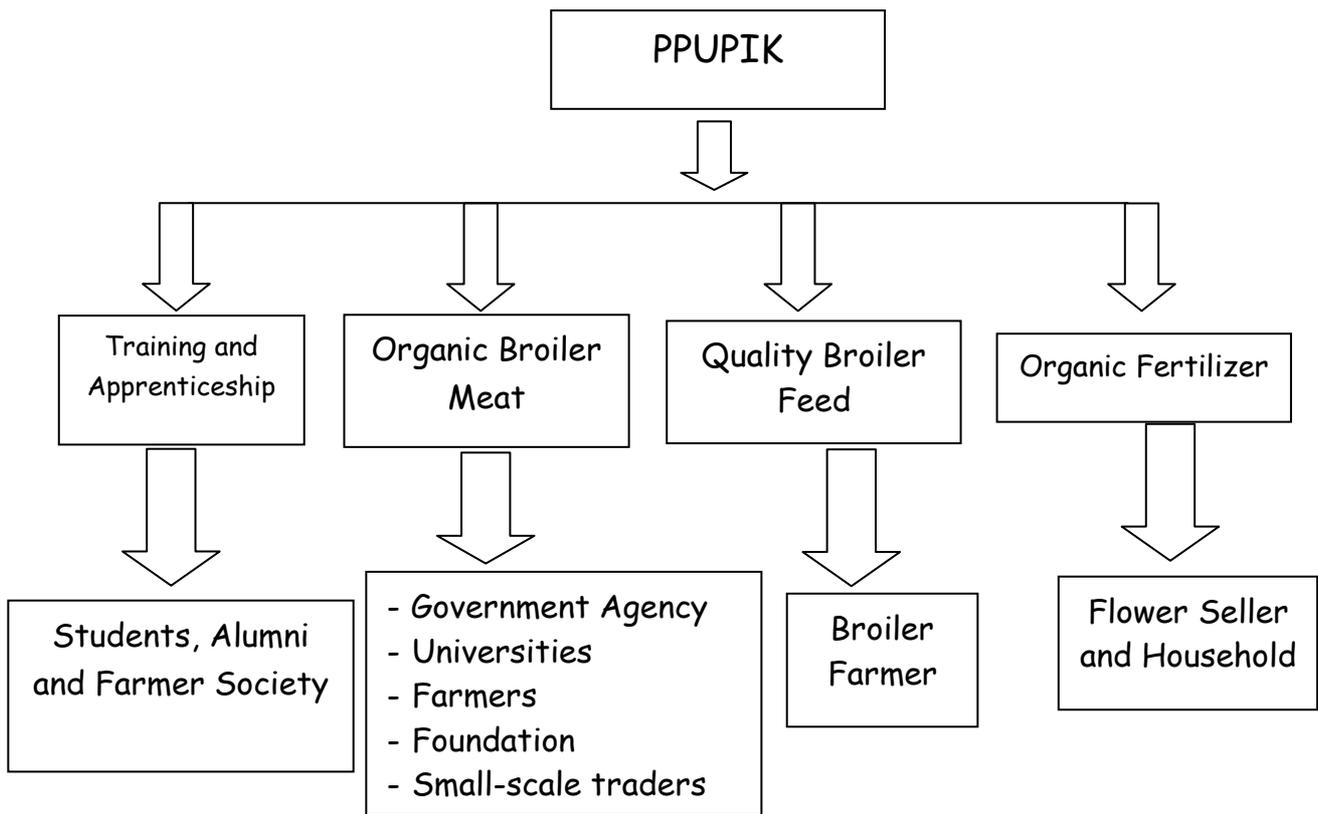
**Figure 1.** Flow Chart of PPUPIK Organic Broiler Production

### 2.3. Marketing

The broiler products are marketed to:

1. Livestock collectors and traders in Ternate Municipality (work partners). These collectors and traders sell them to the people in Ternate Municipality and other cities in North Maluku Province (Halmahera, Tidore Municipality, Sula Islands Regency and so forth).
2. Fulfill special demand from Khairun University's academic members, hotel/café/restaurants in Ternate Municipality.
3. Trainings for alumni or surrounding people which constitute indirect marketing targets of this program, particularly those who later are interested to follow it up by running a business in organic-based broiler husbandry.
4. The secondary products of this program in the forms of organic fertilizer is marketed specifically to individual (flower sellers, household).

The marketing plan scheme is presented in Figure 2.



**Figure 2.** PPUPIK Marketing Plan Scheme

### 3. RESULT AND DISCUSSION

#### 3.1. General Condition of Organic Broiler Husbandry

This organic broiler project in Khairun University is performed within the Khairun University environment, at the Husbandry Laboratory of Animal Husbandry Study Program of Agriculture Faculty to be precise. The distance from the organic broiler cage to the classroom of Agriculture Faculty is around 500 meters. The organic Broiler cage is approximately 0.50 ha in wide, consisting of two 2 cage unit of 1000 chicken capacity and a production room.



**Figure 3.** Organic Broiler Cage

This PPUPIK project has added a physical building of organic broiler cage for 1000 chickens (Figure 3). Most facilities in the organic broiler cage complex at this Animal Husbandry laboratory

have not been used optimally. This can be seen from the fact that the cage had been built since 2005. Most of these broiler cages are still vacant despite its twice renovations in 2009 and 2013.

### 3.2. Number of broiler livestock

This PPUPIK Organic Broiler project has been commenced early January 2016. Until May 2018, 14 periods of maintenance (6 periods of maintenance each year) have been completed at a production capacity per period of maintenance of 2000 chickens. The detail on the number of broiler livestock for the maintenance period (January 2016 to May 2018) can be seen in Table 1.

**Table 1.** Data on number of broiler livestock during January – September 2017 period.

No.	Maintenance Year	Number of DOCs	Number of dead DOCs during maintenance	Total Broiler harvested	Organic Mortality Percentage (%)
1.	2016	6101	87	6014	1.43
2.	2017	8159	153	8006	1.87
3.	2018	6102	97	6005	1.57
<b>Total</b>		<b>20,362</b>	<b>337</b>	<b>20,025</b>	<b>1.65</b>

Based on Table 1, it can be seen that until May 2018, the total number of organic broilers kept until their harvest is 20,025 chickens divided into those periods in 2016 (6014 chickens), 2017 (8006 chickens), and 2018 until May Mei 2018 (6102 chickens).

During their maintenance, it is found that the mortality of broiler chicken is very low (under 2%). This indicates that during this PPUPIK project using herbs as phytobiotic the broiler chicken's performance has been excellent. Kartasudjana and Suprijatna (2006) add that the poor performance shown by broiler chickens is influenced not only by the maintenance factor, rather it is also influenced by the DOC's quality. Furthermore, the ideal temperature for broiler chickens is 23°–26°C. This factor also influences the broiler chicken's growth (Fadilah, 2004).



**Figure 4.** Broiler Chicken Maintenance

During their maintenance, the broiler livestock are given the feed which has been added with clove leaf flour and nutmeg fruit powder at a percentage of 2% of the total feed. This feeding of clove leaf flour and nutmeg flesh flour as phytobiotic aims at improving the broiler livestock's productivity. As reported by Sapsuha, et al (2015), the feeding of clove leaf and nutmeg leaf each 2% and their combination can increase the weight gain of broiler livestock.

In addition to feeding of clove leaf flour and nutmeg flesh flour, during the term of project, *Lactobacillus* sp bacterial isolation from broiler chicken's intestine is added to the drinking water at 1 ml in 1000 ml. It is done for the production efficiency purpose. As suggested by Sapsuha *et al.* (2015), treatment group R1, i.e. with an addition of 1 ml *Lactobacillus* sp bacterial isolation from broiler chicken's intestines to drinking water, shows the highest weight gain at 1401 gr/chicken, and the lowest one is found in treatment group R0 or control group with a mean of 1251.0 gram/chicken.



**Figure 5.** Organic broiler carcass

During the term of PPUPIK project (from 2016 to 2018), the amount of organic broiler carcass sold is 20,025 chickens for Rp. 35,000.00/chicken. Thus, the total sales of organic broiler carcass is Rp. 700.875.000.

### 3.3. Organic Fertilizer

The organic fertilizer produced is named Pupuk Organik-IBO Plus. The production process begins after the organic broilers are harvested. The first production process of this organic fertilizer was in 2016 and produced 1200 kg fertilizers. Currently the fertilizer production process is regularly commenced after the harvesting of organic broiler. The average production of fertilizer is 750 kg, and in September 750 kg fertilizer is under production process.

The fertilizer production process is done using such raw materials as broiler chicken's litter at 90%, rice bran at 10% plus EM4. All these materials are stirred evenly and added with EM4 which has been diluted at 1:20 ratio with water. After all materials are evenly stirred, it is covered tarpaulin and plastic to make it air-tight. This mixture is let idle for 3 weeks (28 days).

The fertilizer packaging uses plastic of 5 kg size. The mean price of this fertilizer is Rp 1500 per kg in the fertilizer production site. Until May 2018, the total fertilizer produced is 8,550 kg, with its total sales value of Rp. 12,825,000. The data on fertilizer sales during the term of PPUPIK project can be seen in Table 2.

**Table 2.** Sales of Pupuk Organik-IBO Plus until May 2018

Number	Year	Production (kg)	Price (Rp)
1.	2016	1,800	2,700,000
2.	2017	4,500	6,750,000
3.	2018	2,250	3,375,000
<b>Total</b>		<b>8,550</b>	<b>12,825,000</b>



**Figure 6.** Organic Fertilizer

## 4. Conclusion and Suggestion

### 4.1. Conclusion

1. The use of herbs as phytobiotic can be used in broiler feed to minimize the feed costs as well as to reduce the use of antibiotic.
2. The maintenance of broiler livestock is done for three years with a total number of organic broilers which have been harvested until May 2018 is 20,025 chickens for Rp. 35,000/chicken and a total amount of sales of organic broiler amounting to Rp. 700,875,000
3. The total organic fertilizer produced during the maintenance (January 2016 – May 2018 period) is 8,550 kg with a total sales value of Rp. 12,825,000

### 4.2. Suggestion

The use of herbs as flour (clove leaves and nutmeg fruit) as phytobiotic in the place of antibiotic needs to be performed in animal husbandry industry, particularly broiler livestock in order to reduce the antibiotic residues in the products being produced.

## References

- [1]. Conway, P.L. and X. Wang. 2000. Specifically targeted probiotic can reduce antibiotic usage in animal production. *Asian-Aus. J. Anim. Sci.* 13.Supp : 358 – 361.
- [2]. Fadilah. 2004. *Beternak Ayam Broiler*. Penebar Swadaya. Jakarta.
- [3]. Lopez, P., C. Sanchez, R. Badle, and C. Nerin. 2005. Solid-and vapor-phase antimicrobial activities of six essential oils: Susceptibility of selected foodborne bacterial and fungal strains. *J. Agr. FoodChem.*53: 6939 – 6946.
- [4]. Panda, A.S.R. Rao, and M. Raju. 2009. Phytobiotics, a natural growth promoter Poultry International pp: 10 -11.
- [5]. Sapsuha, Y., E. Endrawati, A. Salim. 2015. Pengaruh Penggunaan Daun Pala (*Myristica fragrans Houtt*) dan Daun Cengkeh (*Syzygium aromaticum L*) Terhadap Konsumsi, Pertambahan Bobot Badan dan Konversi Ransum Ayam Broiler. Laporan Penelitian Dosen Muda (belum dipublikasikan). Lembaga Penelitian dan Pengabdian pada Masyarakat (LPPM) Unkhair, Ternate.
- [6]. Sapsuha, Y dan Sjfani. 2007. *Teknologi tepung daun sebagai industri pakan berbasis sumber daya tanaman lokal di Maluku Utara*. Laporan Penelitian Dosen Muda (belum dipublikasikan). Lembaga Penelitian dan Pengabdian pada Masyarakat (LPPM) Unkhair, Ternate.
- [7]. Ulfa, M. 2006. Potensi Tumbuhan Obat Sebagai Fitobiotistik Multi Fungsi Untuk Meningkatkan Penampilan dan Kesehatan Satwa di Penangkaran. *Media Konservasi*. 10 (3): 109 – 114.
- [8]. Utami, S. 2011. Pengaruh Penggunaan Daging Buah Pala (*Myristica fragrans Houtt*) Pada Kepadatan kandang Yang Berbeda Terhadap Kinerja Ayam Broiler. Tesis Fakultas Pasca Sarjana, Universitas Gadjah Mada, Yogyakarta.
- [9]. Windisch, W.K. Schedle, C. plitzner, and A. Kroisnayr. 2008. Use of phytogetic products as feed additives for swine and poultry. *J. Anim. Sci.* 86: E140 – E148.

# Local wisdom and conservation effort of momoa bird (*Eulipoa wallacei*) in Galela coastal communities, North Halmahera, Indonesia

Zeth Patty<sup>1</sup>, Febrina Olivia Akerina<sup>2</sup>, Zakarias Dilago<sup>3</sup>, Ariance Yeane Kastanja<sup>4</sup>, Nonice Manikome<sup>5</sup>

<sup>1</sup> Faculty of Science, Technology and Health, Hein Namotemo University, Jl. Kompleks Pemerintahan Villa Vak I Tobelo, Maluku Utara, Indonesia  
E-mail: Zetho\_amq@yahoo.com

<sup>2</sup> Faculty of Science, Technology and Health, Hein Namotemo University Jl. Kompleks Pemerintahan Villa Vak I Tobelo, Maluku Utara, Indonesia  
E-mail: feraakerina@gmail.com

<sup>3</sup> Departement of Silviculture, Perdomaiaan Halmahera Polytechnic, Jln. Trans Halmahera, Desa Wari Ino Tobelo, Maluku Utara, Indonesia  
E-mail: Zakariasdilago@gmail.com

<sup>4</sup> Faculty of Science, Technology and Health, Hein Namotemo University Jl. Kompleks Pemerintahan Villa Vak I Tobelo, Maluku Utara, Indonesia  
E-mail: Kyeane@yahoo.com

<sup>5</sup> Faculty of Science, Technology and Health, Hein Namotemo University Jl. Kompleks Pemerintahan Villa Vak I Tobelo, Maluku Utara, Indonesia  
E-mail: nicemanikome@yahoo.com

**Abstract.** The research was conducted in Galela and North Galela, North Halmahera. The aims of this research were to know 1) the existence of Momoa bird and form of local wisdom to protect its existence; and 2) how the society protects the Momoa bird as a conservation effort. The respondents were divided into 3 groups as follows: the location owners, the egg`s diggers and the local community. The owner`s location and the egg diggers determined by the snow ball method, meanwhile for the local community using simple random method. Local wisdom information was collected by focus group discuss method and other data were collected by structured interviews using questionnaires. The results showed that local wisdom for Momoa bird protection has been known since 1910, but is disappeared. The results showed that 67.69% of the respondents did not know that the Momoa bird is endangered animal; even 73.86% of the respondents did not know that there was local wisdom to protect the Momoa bird; and there are 80% of respondents initiated to support if local wisdom is rearranged to protect the Momoa bird. Meanwhile, the egg`s diggers and village leadership apparatus should be involved in local wisdom arrangement of preservation of the Momoa bird.

**Keywords:** *Momoa bird, local wisdom, coastal communities, conservation, Galela,*

## 1. Introduction

Indonesia is a tropical country that has natural biodiversity of fauna species, especially for bird species diversity. Indonesia has about 1.500 species of the world`s 8700 species of birds; it puts Indonesia on the third rank after Colombia and Brazil who has 1.531 bird species. However, the bird`s life was threatened by human activities like hunting and destruction on their habitat. In North Maluku, Halmahera Island is the main island that covers the largest part of wild life, with 210 species of birds. There are 26 species of endemic birds reported in the Maluku Islands, 24 of which are located in North Maluku (Sapsuha, 2013). Momoa bird (*Eulipoa wallacei*) is an endemic bird in Maluku and North Maluku, namely Halmahera, Meiti, Ternate, Bacan, Buru, Boano, Seram, Ambon, and Haruku. This species lives in tropical mountain forests at an altitude of 750-1650 meters but spawn on sandy beaches exposed to sunlight (Saiya, Verboom, & Heij, 2016).

The biggest threats of biodiversity matters are habitat destruction or loss, and the best way to protect biodiversity is to preserve and maintain habitat. Currently, habitat destruction is generally a result of fulfilling the needs of human life. Nevertheless, human interest regarding to nature somehow can cause to maintain a preservation culture to conserve nature itself. The existence of protected species that have cultural value sometimes gives advantages on the conservation of species concerned (Warsito & Yuliana, 2007). Galela people exploit birds and eggs as a protein source for daily consumption and as a source of income. The biggest threat of momoa birds' existence in their habitat is human activity such as destruction, overexploitation, and egg retrieval excessive that can reduce the number of bird populations, habitat quality and environmental fragmentation in the nesting location (Sapsuha, Sjafani, Albaar, & Ishak, 2017).

Excessive destruction of habitat and exploitation has placed Indonesia in the country with the longest list of endangered species in the world include 126 bird species, 63 mammals and 21 reptiles. If not managed properly, the birds of Momoa (*Eulipoa wallacei*) will be extinct as well as other fauna (Astirin, 2000). The other major issue on the existence of Momoa bird is the habit of the local community who uses birds and eggs as a source protein for daily consumption and livelihoods. The biggest threat to the survival of Momoa bird egg retrieval is excessive, potentially reducing the number of bird populations and accelerate the degradation of habitat and environmental degradation in nesting sites (Sapsuha et al., 2017). The study of Patty & Dilago indicates similar conditions related to this matter that the numbers of bird eggs which have collected each day for sale and consumption are in range of 4-25 eggs per collector, however, these still dependent on the diggers' location.

Even though the previous studies conducted on momoa birds have been reported, somehow there is no information about the social conditions, local wisdom and willingness of momoa bird conservation. Therefore, this research has focused on the existence of local wisdom, the willingness of momoa bird conservation and society's initiative to conserve the momoa bird. Another Research on local wisdom has been conducted on the island of Haruku, Maluku Province, but in North Maluku only conducted in Simau Village. This research more focused on the existence of local wisdom as well as the willingness and effort of the community to bring out the conservation of momoa birds with a wider location covering 7 villages in 2 sub-districts in Galela region. The research purpose is to know 1) the existence and the form of local wisdom about momoa bird protection and, 2) how society enthusiasm to conserve the Momoa bird.

## 2. Momoa Bird Status

Momoa bird population status was protected by Ministerial decree of Agriculture of the Republic of Indonesia number 757/Kpts/Um/1979 dated on December 5, 1979, but there is no decree to protect its location or eggs in Galela, North Halmahera, from extinction (Sapsuha et al., 2017). The present status of the bird on the IUCN (International Union for Conservation and Nature) list is 'vulnerable to extinction' (Saiya et al., 2016). Momoa bird (*Eulopia wallacei*) has spread over several islands, i.e. Halmahera, Meiti, Ternate, Bacan, Buru, Boano, Seram, Ambon and Haruku. The species lives in tropical mountain forests at an altitude of 750-1650 metres but lay their eggs on sun-exposed sandy beaches

Heij & Rompas, (1999), describe the shape of the momoa bird as follows: The front of the head and neck is grayish, greenish brown; back head is light brown; neck and back top is greenish grayish with black; the center of the back, wings and external nets of some dark castaneous tertiary and most of the edge of the slate colored fur; upper tail feathers, chest and stomach are gray; small feathers, tertiary and brownish-green chocolate tails; the middle of a clean white stomach; black, brown, or spotted on the outside web is partially constrained by grayish white. The beak is yellow Beak; horned or black legs. Length 330 mm, 190 mm wings. This bird is different from other types of megapodes because of the diversity of color, a peculiarity that causes a lot of attention



**Figure 1 and 2 .** Momoa Bird in Mamuya Village (photo: M.J. Latupapua)

The egg's color, (Heij & Rompas, (1999) explain that the eggs` color are generally "rust-red", or like dark meat and honey-colored eggs. Further, they also explained that the longer in the hatching, the eggs` color will be more fade. They also explained that the momoa birds do not exhibit sexual dimorphism. Generally in the literature there is limited information and mostly based on the cursory observations and catching of the birds. Furthermore, this kind of bird is timid and hard to find. This fact is proved by a collection of museums consisting of only female animals, which has collected from spawning sites, indicating that little information can be found about its main habitat, therefore, the assumption is momo birds are inhabitants of tropical mountain forests, likewise on the case of other megapodes species (Heij & Rompas, 1999).



**Figure 3.** Momoa egg size with egg laying chicken (Photo: Z. Patty)

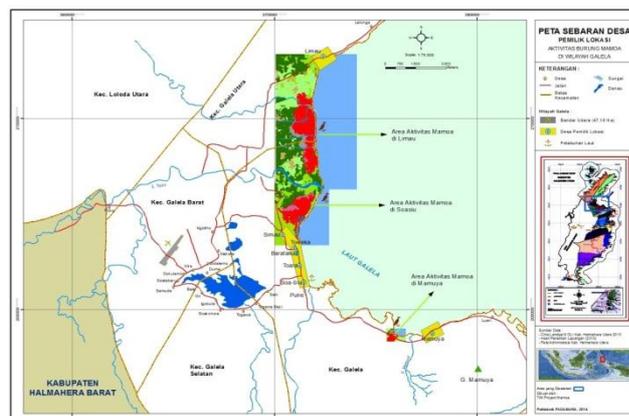


**Figure 4.** Momoa eggs wrapped with pandanus leaves (Photo: Z. Patty)

### 3. Methods

#### 3.1. Study area

This research was conducted in Galela and North Galela, district of North Halmahera. Based on pre-survey and previous study, we determined our research location by designed in which can be states that it is the momoa bird's egg-laying habitat as in the following villages: Barataku, Towara, Toweka, Limau, Simau, Mamuya and Soasio. The locations of these villages are shown in Figure 4.



**Figure 4.** Survey area map

### 3.2. Data collection and analysis

Respondents were divided into 3 groups as follows: landowner, egg diggers and the local communities. Determination of respondents on landowners and egg diggers using snowball method, on the other hand for local community using simple random method. Data was collected from structured interview using a questionnaire. There are 14 respondents for landowner, 9 for egg diggers, and 42 respondents for local communities who live around momoa bird habitat. Data on the existence of local wisdom were collected through focus group discussions (FGD) with landowners and egg diggers, while data on knowledge and enthusiasm to protect the momoa birds was collected through in-depth interviews with questionnaires. Based on the interview data, we analyzed descriptively, both qualitative and quantitative and analysis data is showed in table or graphic.

## 4. Result and Discussion

### 4.1. Location Overview

The research area is located in Galela and North Galela sub-district, part of North Halmahera District, and located in coastal areas. Wide area of Galela sub-district administratively is 138.7 km<sup>2</sup> and North Galela is 255.3 km<sup>2</sup>. Thus, the area of both sub-districts is 394 km<sup>2</sup>. Currently, Galela sub-district consists of 7 villages, while North Galela sub-district consists of 12 Villages. Generally, villages in Galela and North Galela sub-districts are classified into swadaya village categories, except for the Simau Village in Galela sub-district belonging to the swakarya village. The mainland areas of Galela and North Galela sub-districts are dominated by lands with wavy topography to mountain slopes of >8%. Topography is one of the decisive factors in land conformity assessment, which is related to slope and altitude factors from sea level. Galela and North Galela is an area of tropical islands (Anonymous, 2013)

### 4.2. Profiles of household respondents

**Table 1,** Definition and descriptive statistics of respondent households D and

Variables	Mean	Std. dev.	Min-max values
Age Respondent	47.69	10.883	24 -76
Sex Respondent	.91	.292	
Household size (number of family members)	5.12	1.709	2 - 10
<b>Household education</b>			
number of schooling child	2.08	1.229	0 - 5
Elementary students	1.51	1.091	1 - 4
Junior high students	1.11	1.161	1 - 4
high school students	1.05	1.067	1 - 5
college student	.57	.809	1 - 3

Source: primary data, processed

### 4.3. Local wisdom to conserve momoa birds

The result of interviews showed that the form of local wisdom related to the existence and protection of Momoa bird in Galela and North-Galela sub district are available in the form of village law and customary rules that have existed since long time ago. In addition, based on the interviews, there used to be a rule in the Barataku Village created in 1910 by the parents of Djuba family named “Tete Djuba”. The rules regulated:

- 1) Prohibition to cut trees surrounding the momoa birds egg-laying`s location
- 2) Prohibition to carry light or making fire at night at the egg-laying`s location.
- 3) Prohibition for fishing in spawning season at surrounding area of egg-laying`s location, fishing will be allowed after spawning season;
- 4) People who enter or fishing at egg-laying`s location must do “Ngase” or give contribution to village apparatus or landowners.

According to an interview with Haji Solahudin Haler from Limau Village, the same rule applied in Limau and existed until 1980. Some points were regulated in village rules as follows:

1. Villagers were prohibited to pass at the egg-laying's location of momoa bird during afternoon to morning time (between 18:00 PM to 06:00 AM)
2. If the villagers were caught at catching momoa birds, they will be punished based on customary law namely, first was money penalty (undetermined price) and second based on sharing agreement of the amount of eggs-harvest per night.

The rules that existed in Barataku and Limau Villages were valid until 1960s but no longer exist now. Unfortunately, the survey showed that only 26.15% of the communities, especially the landowners and egg diggers knew the rules that once existed, while others have never known the existence of that local wisdom. Data of respondents' knowledge and understanding related to the existence of rules can be seen in Table 2.

**Table 2.** Respondent's distribution based on the knowledge and approval of the existence of the rules concerning the momoa bird.

	<b>Description (%)</b>	<b>Percentage</b>
1.	Know bird Momoa is protected	
	Yes	32.31
	No	67.69
2.	Know there are rules	
	Yes	26.15
	No	73.85
3.	Agree to be made new rules	
	Agree	72.31
	Disagree	4.62
	No Response	23.08

*Source: primary data, processed*

The data show that 67.69% respondent do not know that the momoa bird is a protected species of wildlife, even lack of knowledge of momoa bird's protection rules. Only 32.31% are knowledgeable about the rule, particularly landowners, egg diggers and their families or relatives. However, proper knowledge on wildlife species on the one hand could enable public to better appreciate and enjoy wildlife, on the other hand could encourage public to protect and conserve it, particularly for the threatened species. By the absence of such knowledge affected to public satisfaction on wildlife maybe low even zero notably to unknown / nameless species by the public. As a matter of fact, economic and other values recognized by the public dealing with unknown wildlife species tend to be lower than otherwise. Furthermore, increased appreciation of wildlife, especially threatened species, leads to greater support for their conservation and increases the memberships of organizations that help protect and conserve wildlife (Wilson & Tisdell, 2005).

For drafting of new rules to be part of village's regulation or other local rules, most respondents agree and support those matters, except to 3 respondents who stand to disagree. The rest of respondent are abstainer consider that the affairs of momoa birds should be handled by the village apparatus or the landowner. The biggest support provided by the community is very important for the sustainability of momoa birds. Wilson & Tisdell, (2005) emphasize that without public support for bird conservation in Australia many bird species will continue to disappear. An understanding of the extent of the public's knowledge of birds, and which species are likely to be supported by the public given their current knowledge, is useful in addressing some of these threats.

#### Rules share of momoa eggs

The rules on egg sharing apply among families, owners and eggs diggers have validated since Tete Djuba passed away. Normally the momoa eggs share by families by way of sharing in turns between families, which they call "arisan telur" (social gathering) among families, while egg shared between the owner and the egg diggers is usually done when the owner empowers the egg diggers to collect the Momoa eggs at the site. Usually the eggs are shared between the owner and the egg

diggers, if the collected eggs are even numbered, but if the odd number, the diggers will get more one grain. Distribution of respondents by how to distribute eggs can be seen in the Table 3 bellow:

**Table 3.** Distribution of respondents by how to distribute eggs

No.	Description	Percentage (%)
1	Yes	52,17
2	No	47,83

*Source: primary data, processed*

The interview results show that 52.17% of respondent still share the eggs collected, and the others is no longer. This condition is very dependent on the agreement of egg diggers and landowners, usually some landowners assign eggs diggers, while the other owners are directly involved in collecting the Momoa eggs.



**Figure 5 and 6 .** Interview activity in Mamuya Village  
(Photo: Patty, Z)

#### **4.4. Willingness of conservation implementation**

Knowledge of conservation is collected by interviewing respondents of landowners, egg diggers and villagers. Interviews result show that 69.23% of respondent had ever heard the term of “conservation”, and only 30.77% of respondents who have never heard about it. On the one hand, even though a lot of respondents have heard this term, it turns out that only 13.85% of respondent who understand the meaning of the term “conservation”, and on the other hand, 86.15% of respondent do not understand the meaning of the term, including the landowners and eggs diggers of Momoa bird.

However, after brief explanation, 80% of respondents were willing to take part in conservation efforts. On the vice versa there are 1.54% of respondent refused to take a part and the rest of 18.46 % did not make any choice (abstain). In addition, the difference opinion about the conservation issue, the communities also have different opinion about the most entitled parties as conservation implementers.

The most entitled parties to carry out conservation efforts, interview results showed that 27.69% of respondents in the study site considered the village leadership apparatus together with the villagers is the most entitled to implement the conservation of Momoa birds. 13.85% respondent assume the landowner together with village leadership apparatus and villagers being the most entitled to implement the conservation of momoa bird species, while 18.46% of the respondents did not response and thought that during this time the Momoa birds are more taken care of by the landowner, so they have no right to interfere. Although public opinion is quite varied, however, some parties such as landowners, including eggs diggers and village leadership apparatus and villagers are the most entitled to conservation, whether jointly or by each party. This option because the location is owned by certain families but its existence as part of the village area.

Cooperation among the various parties above, become important for preservation of momoa birds. This is support the opinion of Saiya et al. (2016) which states that to preserve those endemic birds, cooperation is needed from various parties, but the active role of local community is the most important because of local people are people who live side by side with the endemic birds.

To involve the community such as the landowners, the diggers and villagers, need to consider the crucial factors that will determine the success of efforts to preserve the momoa bird, some aspects need to be considered such as the different level of community education, socioeconomic conditions of society, culture and customs. In dealing with those factors above before come to communities' involvement in society conservation program should be preceded by society development related to and dealing with the differences aspects of every social condition at grass root level as mention above. Counseling and mentoring programs are two important things in community development, by those preceding program various materials of social development can be submitted to the society, in addition, mentoring efforts should be done in order to guide the society to formulate rules, programs and plans are needed by the village related to their roles and participation in conservation of Momoa bird species will be done by proper information.

#### Risk and compensation

On the economic aspect, the main factor to be dealt is income. Related with conservation efforts, the landowners and the egg diggers will certainly lose a percentage of their income that received from selling of Momoa eggs. In this case, even though they consented to implement the conservation of momoa bird species, some respondents, owners and diggers have not understood the conservation impact toward their loss from the selling of Momoa eggs.

The results of the interview found that 73.91% of respondent from the landowners and the egg diggers understood that the implementation of momoa bird conservation could be impacted to reduce the number of eggs harvested and consistent in reducing their income from selling the momoa eggs.

Although number of people who understands that they should reduce the number of eggs is quite large, but about the number of eggs and income that should be reduced, some respondent has different opinion. The results also showed that 47.83% respondents really understood the benefits and consequences of the momoa bird conservation implementation agree to take only half number of eggs of total number they usually found. While respondent who approved the reduction of eggs by third part is about 8.70%. Furthermore, 21.74% of respondent agree for quarter of the egg reduction, because they did not want to lose the income from the considerable number of eggs. The remaining, 21.74% of respondent argued that whatsoever amount of eggs should be reduced they will obey depend on the outcome of drafting rules prepared, if the momoa bird conservation efforts are implemented. The loss income risk in the communities due to the conservation efforts of the momoa bird species needs to be concerned by the conservation implementers, including the local governments, in doing so when conservation efforts can be considered for local governments to grant compensation or incentives to landowners and diggers who will lose their usual income. Provision of compensation or incentives may be granted based on Government Regulation Number. 8 of 1999 on the Utilization of Wild Plants and Animals. The regulation has been regulated on the provision of incentives for communities in the effort to conserve the types of plants and wildlife that are located around the community site. In addition, the responsibility for providing incentives to communities is also emphasized in the national strategic conservation directive of 2008 - 2018, states that the government needs to provide awards and incentives to members or groups of traditional or local communities that conserve species and maintain traditional wisdom (Anonymous, 1999).

These incentives can be made by involving landowners and diggers as part of conservation management. Landowners and diggers can live with their usual activities as collecting eggs in this case but at the same time maintain conservation purposes. The collected eggs will be handed over to conservation site managers, and they get an incentive worth of eggs that are delivered at the same price if they sell to the market. Thus, owners and diggers involved in conservation do not risk lose their income because of conservation of the Momoa bird species.

## 5. Conclusion

The research concluded that the people in Galela and North Galela sub-districts used to have local wisdom about the protection of momoa birds, which applied almost identically to all villages surveyed. The community also supports a rearrangement that can protect the life of momoa birds, by concerned to the existence of landowners and egg diggers who have been trying to protect momoa birds for so long. To protect the momoa birds, the local government is also urged to pay attention to social values in the community and grant the compensation for all those who suffer from loss of income due to the implementation of the momoa bird conservation efforts

## ACKNOWLEDGEMENTS

We would like to thank the Local Government of North Halmahera Regency which has supported funding for this research. We are also grateful to the apparatus in the 7 villages and villagers who have accepted us during carrying out the data collection at research area. Finally, we thank to all the colleagues who have supported us to finish this paper.

## References

- [1]. Sapsuha Y. Physical quality of the eggs of Mamo bird (*Eulipoa wallacei*). JITP. 2013;2(3):167–74.
- [2]. Saiya HG, Verboom WC, Heij CJ. Vocal communication between Molucan Megapodes (*Eulipia wallacei*). Yogyakarta; 2016.
- [3]. Warsito H, Yuliana S. Keanekaragaman jenis burung di Saribi, Numfor Barat, Papua: beberapa catatan. Penelitian Hutan dan Konservasi Alam. 2007;IV(6):553–60.
- [4]. Sapsuha Y, Sjafani N, Albaar N, Ishak H. Karakteristik sarang dan penetasan telur Burung Mamo (*Eulipoa wallacei*) di Galela Kabupaten Halmahera Utara. Jurnal Agripet [Internet]. 2017 Apr 1;17(1):38. Available from: <http://jurnal.unsyiah.ac.id/agripet/article/view/6873>
- [5]. Astirin OP. Problems of biodiversity management in Indonesia. Biodiversitas, Journal of Biological Diversity [Internet]. 2000;1(1):36–40. Available from: <http://biodiversitas.mipa.uns.ac.id/D/D0101/D010107.pdf>
- [6]. Heij CJ, Rompas CFE. Ekologi Megapoda Maluku (burung Momoa , *Eulipoa wallacei* ) di Pulau Haruku dan beberapa pulau di Maluku , Indonesia. second. Rotterdam / Ambon: Meidoornsingel 75, NL-3053 BK Rotterdam Belanda; 1999. 162 p.
- [7]. Anonymous. Buku putih sanitasi Halmahera Utara. 2013.
- [8]. Wilson C, Tisdell C. Knowledge of birds and willingness to support their conservation: An Australian case study. Bird Conservation International. 2005;15(3):225–35.
- [9]. Anonymous. Peraturan Pemerintah Republik Indonesia Nomor 8 Tahun 1999 tentang Pemanfaatan Jenis Tumbuhan dan Satwa Liar. 8 Tahun 1999 Indonesia: Sekretariat Kabinet RI; 1999 p. 1–16.



ADRI 17<sup>th</sup> INTERNATIONAL CONFERENCE

# Proceeding **17<sup>th</sup> IC**

**Ternate, 23-24 April 2018**



ISBN 978-602-50037-6-9



9 786025 003769