Understanding Behavioral Intention to Use Social Media Technology: Two Comparing Model, TAM and UTAUT

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Abstract— **This study has purpose to investigate behavioral intention to use social media technology using two model TAM and UTAUT. The proposed models were examined by 326 sample data from university students and reveal that all variables on TAM and UTAUT show their significantly direct effect among variables in the models. Hedonic motivation as main adding variable in the two model also proves the significantly direct effect on behavioral intention. By way of investigating the strong variables on previous related studies and employing the variables on the proposed model, the study reveals the prominent variables in user acceptance of social media technology including perceived usefulness, perceived ease of use, social influence, facilitating condition, and hedonic motivation. This study contributes to people who interests to the result of this study in revealing the prominent variables in research on user acceptance of social media. The recommendation of this study is the reducing or increasing user intention to use social media can be done by reducing or increasing the influence of factors or variables related to it.**

Keywords— user acceptance, social media, hedonic motivation, TAM, UTAUT

I. INTRODUCTION

Online technology adoption in the Centennial and Millennial generations can be divided into three categories including the adoption of social media technology, entertainment technology, and business technology. Entertainment technology is a technology used for entertainment purposes. Entertainment technology includes online games, online videos, online music, and online reading. Meanwhile, business technology was used for specific purposes such as online transportation, online booking, and online shopping. Social media technology is a technology used for interaction or communication purpose among people such as Line, WhatsApp, Facebook, Twitter, and Instagram.

Several previous studies separated hedonic motivation into perceived enjoyment and flow experience. In accordance with Harnadi [1] and Venkatesh [2], this study proposes hedonic motivation as a variable adding to TAM and UTAUT to predict

the adoption of social media technology. TAM is a model developed by Davis [3] and it's an improvement from the TRA and TPB models. UTAUT is a model developed by Venkatesh [4] and be updated by Venkatesh [2]. Both of the models were employed to gain understanding related to user acceptance of social media.

This study has purpose to understand user acceptance in using social media by means of employing two models TAM and UTAUT. Investigation of the user acceptance of social media technology was carried out on the university student community as respondents to obtain research data will be used to test the proposed model. The final model and its analyses contribute to decision makers in people education and all communities who interest to enhance user acceptance of social media technology.

II. PROPOSED MODEL AND HYPOTHESES

According to Venkatesh [2], hedonic motivation is the fun obtained from using technology. Hedonic motivation is important variable in entertain technology research naming online games [5], [6], [7]. These researches revealed that hedonic motivation has direct effect on behavioral intention in using entertain technology. As a result, this study proposes:

H1: Hedonic motivation has direct effect on behavioral intention to use social media

Perceived usefulness also has direct effect on behavioral intention in using e-learning system, and entertain technology [1], [4], [8], [9], [10]. As a result, this study proposes:

H2: Perceived usefulness has direct effect on behavioral intention to use social media

Several studies verified that Perceived ease of use also has direct effect on behavioral intention [1] [3], [4], [5], [6], [8], [10]. As a result, this study proposes:

H3: Perceived ease of use has direct effect on behavioral intention to use social media

According to Harnadi [1], social influence is the extent to which an individual perceives that important

others believe that he or she should use the technology. Several related studies recorded the significantly direct effect of social influence on behavioral intention [1], [2], [5], [7], [9], [10]. As a result, this study proposes:

H4: Social influence has direct effect on behavioral intention to use social media

Facilitating condition is the extent to which an individual believes that their technical infrastructure available to support use the technology [1]. The related previous studies proved that facilitating condition has direct effect on behavioral intention [1], [2], [5]. As a result, this study proposes:

H5: Facilitating condition has direct effect on behavioral intention to use social media
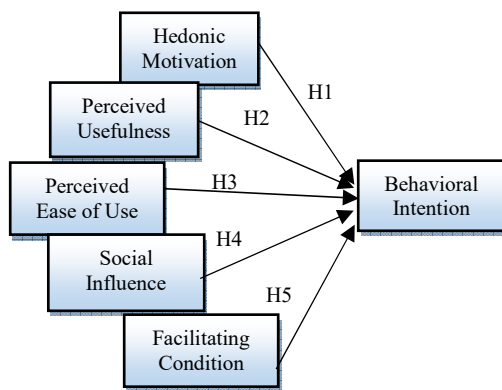

Figure 1.   Proposed Research Model

III.   PROPOSED COMPETING MODEL AND HYPOTHESES

In this study UTAUT and TAM are compared to provide a better understanding on user acceptance of social media. Two models were compared in their explanatory power and significance direct effect.

Perceived ease of use also has direct effect on perceived usefulness according to Smeda [11], Davis [3], Lee [5], Wu [8], and Martin [9]. As a result, this study proposes:

H6: Perceived ease of use has direct effect on perceived usefulness

Perceived usefulness defined as the extent to which an individual believes that using the technology will help them to gain personal benefits [1]. The studies conducted by Davis [3], Lee [5], and Smeda [11] verified that perceived usefulness has direct effect on Attitude. As a result, this study proposes:

H7: Perceived usefulness has direct effect on attitude

Perceived ease of use is the degree to which an individual believes that using the technology will be relatively ease of effort [5]. The studies conducted by Davis [3], Lee [5], and Smeda [11] proved that perceived ease of use has direct effect on Attitude. As a result, this study proposes:

H8: Perceived ease of use has direct effect on attitude

Attitude is individual judgment of carrying out a behavior and predisposes users' behavioral intention [5]. In the e-book and online games adoption, attitude has direct effect on behavioral intention [12], [5], [7], [11]. As a result, this study proposes:

H9: attitude has direct effect on behavioral intention to use social media
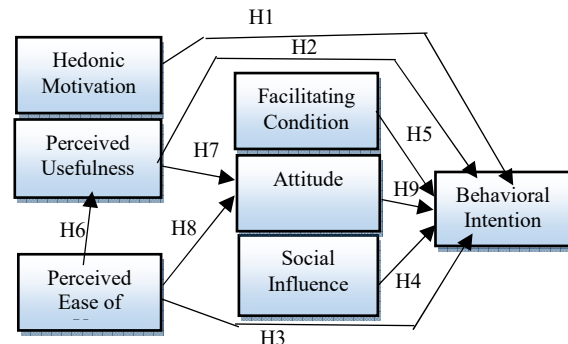

Figure 2.   Proposed Competing Research Model

IV.   METHODOLOGY

This study was designed following the procedures: developing model and questionnaire; data preparation and preliminary analysis; final model analysis and development; and interpreting of findings and conclusions. The proposed model was summarized from related previous literatures and examined using sample data from respondents. Firstly, the questionnaire was tested on 5 respondents to get input for improvement. This step was taken to improve the questionnaire and strengthen the reliability and validity of the final questionnaire. The 450 questionnaires were distributed and 350 returned. The 326 of sample data were useful for analyzing after they pass the filtering of the completeness and duplicating of filling out the questionnaires.

The sample data was analyzed statistically by SmartPLS including validity and reliability analyses, correlation analysis using path coefficient, and causal effect analysis to test the significantly effect among variables in the hypotheses. The result of this examination is a final model and discussed to get insight in user acceptance in using social media.

V.   FINDINGS AND DISCUSSION

A.   Characteristic of Respondents

The respondents in this study are user of social media in age range of 15 - 25 years old. The characteristic of respondent of the study is shown in Table 1. According to Table 1, the most of respondents are male (70%) and younger people in age range of 15 – 20 years old (69%). They are social media users with half of them (50%) experience 7 years or above, consuming time almost 13 hour per day (52.8%), and most of them (69.6%) waste below 4 time per day. Instagram and Line are most favorite

(70%) comparing with WhatsApp, Facebook, and Twitter.

TABLE I.   CHARACTERISTIC OF RESPONDENTS

Total Responden (n=326)		
Age:		
15 - 20	225	69%
20 - 25	101	31%
Gender:		
Male	228	70%
Female	98	30%
Experience (years)		
>= 7	164	50%
1 - 7	162	50%
Time per Day		
1 - 12	154	47.2%
> =13	172	52.8%
Hour per time		
1 - 4	62	69.6%
>= 5	99	30.4%
Type		
Line	134	41.2%
Instagram	94	28.8%
WhatsApp	49	15%
Facebook	29	9%
Twitter	20	6%

There are 3 statistical analysis carried out in this study including analyzing of measure model, structure model, and hypothesis.

B.   Measure Model and Competing Model Analyses
Testing Validity of Model and Competing Model

The analysis of loading factor of the model and competing model are shown in Table 2 and 4.

TABLE II.   THE VALUE OF THE LOADING FACTOR FOR MODEL

	BI	FC	HM	PEU	PU	SI
FC1		0.916				
FC2		0.890				
HM1			0.899			
HM2			0.929			
HM3			0.930			
I1	0.910					
I2	0.874					
I3	0.921					
PEOU1				0.813		
PEOU2				0.809		
PEOU3				0.853		
PU1					0.902	
PU2					0.928	
PU3					0.928	
PU4					0.727	
SI1						0.791
SI2						0.919
SI3						0.860

On Table 2 until 15, the variables and its notation are described as follows: hedonic motivaton (HM), perceived usefulness (PU), perceived ease of (PEOU), social influence (SI), facilitating condition (FC), Attitude (Att), and behavioral intention (BI).

Based on Table 2, the convergent validity of the model is confirmed by outer loading value for each indicator is on 0.7 or more.

TABLE III.   AVERAGE VARIANCE EXTRACTED (AVE) VALUE OF MODEL.

	Average Variance Extracted (AVE)
BI	0.814
FC	0.816
HM	0.845
PEU	0.681
PU	0.766
SI	0.737

Furthermore, the average variance extracted (AVE) value of the model are confirmed by values above 0.5 in Table 3.

TABLE IV.   THE VALUE OF THE LOADING FACTOR FOR COMPETING MODEL

	Att	BI	FC	HM	PEU	PU	SI
Att1	0.954						
Att2	0.940						
FC1			0.916				
FC2			0.890				
HM1				0.899			
HM2				0.929			
HM3				0.930			
BI1		0.910					
BI2		0.874					
BI3		0.921					
PEOU1					0.808		
PEOU2					0.819		
PEOU3					0.848		
PU1						0.891	
PU2						0.917	
PU3						0.921	
PU4						0.756	
SI1							0.791
SI2							0.919
SI3							0.860

For competing model, the convergent validity is confirmed by outer loading value for each indicator is on 0.7 or more in Table 4. There are two indicators

naming Att3 and FC3 no be passed with outer loading value below 0.7 and removed from the next analysis.

TABLE V.   AVERAGE VARIANCE EXTRACTED (AVE) VALUE OF COMPETING MODEL

	Average Variance Extracted (AVE)
Att	0.897
BI	0.814
FC	0.816
HM	0.845
PEU	0.681
PU	0.764
SI	0.737

The average variance extracted (AVE) value of model and competing model are confirmed by values above 0.5 in Table 3 and 5. Consequently, the confirmation showed by Table 2 -5 establish that model and competing model pass the convergent validity test.

Other test for discriminant validity must be conducted for model and competing model using fornell-larcker criterion and the result is shown in Table 6 and 7.

TABLE VI.   FORNELL-LARCKER CRITERION VALUES OF MODEL

	BI	FC	HM	PEU	PU	SI
BI	0.902					
FC	0.570	0.903				
HM	0.517	0.473	0.919			
PEU	0.534	0.678	0.436	0.825		
PU	0.480	0.339	0.347	0.339	0.875	
SI	0.488	0.421	0.391	0.400	0.513	0.859

Table 6 shows the fornell-larcker criterion value of the model.

TABLE VII.   FORNELL-LARCKER CRITERION VALUES OF COMPETING MODEL

	Att	BI	FC	HM	PEU	PU	SI
Att	0.947						
BI	0.575	0.902					
FC	0.475	0.570	0.903				
HM	0.701	0.517	0.473	0.919			
PEU	0.527	0.535	0.676	0.436	0.825		
PU	0.409	0.481	0.344	0.354	0.349	0.874	
SI	0.413	0.488	0.421	0.391	0.401	0.516	0.859

Meanwhile, Table 7 shows the fornell-larcker criterion value of the competing model. Table 6 and 7 confirm that all variables have greatest value if compared by itself. Consequently, all models pass the discriminant validity.

Testing Reliability of Model and Competing Model

Reliability refers to consistency and stability of an indicator. The measurement of reliability must be conducted by composite reliability dan cronbach's alpha. Table 8 and 9 show the composite reliability dan cronbach's alpha values for each construct.

TABLE VIII.   THE VALUE OF COMPOSITE RELIABILITY AND CRONBACH'S ALPHA OF MODEL

	Cronbach's Alpha	Composite Reliability
BI	0.885	0.929
FC	0.775	0.898
HM	0.908	0.942
PEU	0.766	0.865
PU	0.894	0.928
SI	0.820	0.893

According to Table 8 and 9, all constructs for model and competing models confirm the composite reliability values above 0.7. Consequently, all models pass the reliability test.

TABLE IX.   THE VALUE OF COMPOSITE RELIABILITY AND CRONBACH'S ALPHA OF COMPETING MODEL

	Cronbach's Alpha	Composite Reliability
Att	0.885	0.946
BI	0.885	0.929
FC	0.775	0.898
HM	0.908	0.942
PEU	0.766	0.865
PU	0.894	0.928
SI	0.820	0.893

C. Structural Model and Competing Model Analyses

The next step of statistical analysis of the model and competing model is testing of structural model. This step must be conducted to analyze the structural relationship among measured variable and other variables. Structural model analysis is divided into path coefficients dan coefficient of determination.

Path coefficients

Testing of path coefficients is used to determine accepted or not the hypothesis. Testing of path coefficients of model and competing model are shown in Table 10 and 11.

TABLE X.   PATH COEFFICIENTS VALUE

	BI	FC	HM	PEU	PU	SI
BI						
FC	0.236					
HM	0.212					
PEU	0.158					
PU	0.201					
SI	0.139					

Based on Table 10 and 11, all path coefficients confirm no values below 0.1 or negative. Its mean that, all hypotheses of the model and competing model can be accepted.

TABLE XI.   PATH COEFFICIENTS OF COMPETING MODEL

	Att	BI	FC	HM	PEU	PU	SI
Att							
BI							
FC		0.237					
HM		0.212					
PEU	0.437	0.157				0.349	
PU	0.257	0.198					
SI		0.140					

Coefficient of Determination

Coefficient of Determination (R²) is calculated to find out the accuracy of proposed model in the study. R² value explains how much the ability of independent variable to explain variants of its latent variable. The interpretation of the values can be classified into three effect level including small, medium, and large. Table 12 and 13 show the R² value for the factors in the model and competing model respectively.

TABLE XII.   R SQUARE AND R SQUARE ADJUSTED VALUES OF MODEL

	R Square	R Square Adjusted
BI	0.493	0.485

R² values in Table 12 and 13 confirm the large size with value more than 26%.

TABLE XIII.   R SQUARE AND R SQUARE ADJUSTED VALUES OF COMPETING MODEL

	R Square	R Square Adjusted
Att	0.335	0.331
BI	0.492	0.484
PU	0.122	0.119

D. Hypothesis Analysis

The hypothesis analysis is conducted using two-tailed test. The test is done by comparing p-values and significantly value 5%. The analysis using SmartPLS results mean, standard deviation, t-statistics, and p-values. The analysis is used to determine the accepted or rejected of hypothesis based on comparison of p-values and significantly value 5%. The hypothesis will be accepted if p-values below 5% and rejected if conversely.

TABLE XIV.   HYPOTHESIS TEST RESULT OF MODEL

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	P Values	Hipotesa
FC -> BI	0.236	0.233	0.073	0.001	accepted
HM -> BI	0.212	0.212	0.059	0.000	accepted
PEU -> BI	0.158	0.161	0.065	0.016	accepted
PU -> BI	0.201	0.201	0.056	0.000	accepted
SI -> BI	0.139	0.141	0.057	0.014	accepted

Based on the results in Table 14 and 15, all hypotheses of model and competing model confirmed accepted.

TABLE XV.   HYPOTHESIS TEST RESULT OF COMPETING MODEL

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	P Values	Hipotesa
FC -> BI	0.237	0.234	0.074	0.001	accepted
HM -> BI	0.212	0.212	0.059	0.000	accepted
PEU -> Att	0.437	0.437	0.053	0.000	accepted
PEU -> BI	0.157	0.158	0.067	0.019	accepted
PEU -> PU	0.349	0.351	0.050	0.000	accepted
PU -> Att	0.257	0.257	0.051	0.000	accepted
PU -> BI	0.198	0.199	0.057	0.001	accepted
SI -> BI	0.140	0.141	0.057	0.014	accepted

VI. CONCLUSION

This study is technology adoption research delivering two insights including predisposition and behavior in using technology and adoption of social media application. According to characteristic of respondents in this study, the respondents are younger people and male, have long experienced and spend a lot of time in using social media, and prefer to use Instagram and Line. There are conclude that the behavior in using social media among younger people has become their daily activity for a long time since they were in elementary school

The investigating adoption of social media technology in this study is conducted through proposing model and competing model based on UTAUT and TAM respectively. The hypotheses are tested through calculating the relationship among

variables in the models including hedonic motivation, perceived usefulness, perceived ease of use, attitude, social influence, facilitating condition, and behavioral intention to use social media.

The analyzing of measure model, structure model, and hypothesis of model and competing model confirm that the model and competing models pass all steps above and the all hypotheses in the proposed models are accepted. There are conclude that hedonic motivation, perceived usefulness, perceived ease of use, social influence, facilitating condition are prominent variables in social media adoption research.

Therefore, this study recommends that to reduce or increase their intention to use social media, it can be done by reducing or increasing the influence of factors related to it.

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