

CHAPTER 1

INTRODUCTION

1.1 Background

The Olympics is an international sporting event that is held once every four years and has been around for 120 years, which includes summer and winter sports. attended by more than 200 countries and tens of thousands of athletes. Various kinds of athletes take part in the Olympics to win medals, there are gold, silver, and bronze medals. From old to young, men and women, lightweight and heavyweight, tall people and short people. The general opinion of people at the Olympics, in general, is that if short people take part in basketball competitions, they will not win medals. From there the problem can be found, the public stigma of short athletes if they participate in the basketball olympics will definitely lose or have trouble when competing, because the average height of basketball people is very high. This study will prove whether the stigma of society is true if the height of a basketball athlete can determine whether an athlete wins a medal or not.

The data used in the form of CSV and the CSV already available data on athletes such as the names of athletes, gender, age, height, weight, etc. From 1896 to 2016. To predict whether height has an effect or not in the Olympics, the BIRCH algorithm is processed through the python programming language. The final results, it will be seen whether the thoughts of people in the basketball olympiad are correct if the height in the basketball olympiad affects the results of winning medals or vice versa, the final result that will be displayed later will be in the form of visuals. From the explanation above, questions can arise which will be discussed below.

1.2 Problem Formulation

The stigma of people who think that athletes with short heights in basketball olympiads cannot win medals in matches, and from the background explanation above, the formulation of the problem to be solved in this study is:

1. Does a basketball athlete's height affect getting a medal, besides basketball, do other sports also affect an athlete's height to get a medal?
2. Can the BIRCH algorithm prove that height and medal are related and how does it perform?

1.3 Scope

From the formulation of the problem that has been mentioned above, this research also has limitations, the limitations used are:

1. The data used are 120 Olympic years taken at Kaggle, for the Olympic year used is from 1896 to 2016.
2. The algorithm used is the BIRCH algorithm for the clustering process and the deterministic regression algorithm to fill in the missing data.
3. The programming language used is Python, the library used is NumPy, pandas, sklearn, matplotlib, missingno.

1.4 Objective

The main purpose of this research is to see if height is related to medal achievement because many people think that a basketball athlete's height affects winning medals. By using the BIRCH algorithm to find the results true or false if height is the main factor in the victory of a basketball athlete.