CHAPTER I

INTRODUCTION

1.1   Background

Kemahasiswaan Universitas Muhammadiyah Kalimantan Timur manage various scholarship for student, one of them is Kartu Indonesia Pintar Kuliah scholarship, KIP Kuliah offer financial fund for student with condition willing to finish college and maintaining grade, there are several process for determining KIP scholarship recipient, one of the process is where Kemahasiswaan UMKT need to estimate eligible student receiving scholarship based on 4 criteria, DTKS status, Family Condition, Family economy, House Condition, The problem may occur is to many scholarship applicant but scholarship quota is limited it's hard to choose eligible scholarship recipient among student applicant.

AHP method is multi-criteria decision making techniques that build hierarchy with different levels of importance to create weight with acceptable level of consistency, (Marfuah & Widiantoro, 2017). TOPSIS are multicriteria decision-making methods. (Ramadiani et al., 2018), the method is simple and easy to understand, efficient computation, and has the ability to measure the relative performance of the alternatives in the form of simple mathematics. (Meriani Catur Utami, 2017).

There is similar study by A. Wardana "Ahp-Topsis Pada Seleksi Penerimaan Bantuan Program Indonesia Pintar", using hybrid method ahp-topsis to determine kip scholarship recipient with 8 criteria and 5 alternatives, end result was ranking scholarship recipient 1-5 and the highest prefersion point was 0.5338, (Wardana, 2019). The next study was conducted by P. Hasan "Selection Of Scholarship Acceptance Using AHP And TOPSIS Methods" AHP-TOPSIS model to select recommendation students to get PPA scholarship based on 5 criteria, the results were students ranked 1-5 PPA scholarship recipients, (Hasan et al., 2019). The

caveat here was the difference between this study and previous study was the criteria was different and alternative quantity was different.

In this research AHP was used to establish weight value of all criteria set by UMKT student division, while topsis method used for ranking all alternative based criteria value set by ahp, the result were rank of KIP Kuliah scholarship recipient based on TOPSIS results, then find out if AHP method combine with topsis would fit to determine scholarship, judge based on method accuracy.

1.2 Problem Statement

Based on background to determine KIP Kuliah Scholarship the problem statement consist of as follows :

1. How to determine student recipients who deserve KIP Kuliah scholarship with AHP and TOPSIS in Kemahasiswaan UMKT.

2. How well AHP combines with the TOPSIS method model performs to determine student recipients, judged by model accuracy.

1.3 Research Objective

The main purposes of this research were to determine scholarship applicant in Universitas Muhammadiyah Kalimantan Timur, the list of objectives as follows :

1. To find how to determine KIP Kuliah scholarship recipients by using analytical hierarchy process and TOPSIS model in Kemahasiswaan UMKT.

2. Find the Accuracy of AHP TOPSIS method in this study.

1.4 Research Scope

There are known limitations or scope in this research to keep research on track, and there consist of :

1. This research only used AHP and the TOPSIS method.

2. This research only uses methods to determine the scholarship recipient and did not make the whole Decision Support system.

3. Recipient applicant data limited on the year 2022.