CHAPTER 1

INTRODUCTION

1.1 Background

Education in general has the meaning of a life process in developing each individual to be able to live and carry out life (Alpian et al., 2019). The process of organizing academic activities is at the forefront of an educational institution. in this case is the University. Universities are required to be able to organize the educational process in a professional manner because the role and responsibility of universities are very large, especially in printing the nation's next-generation (Sumarsono et al., 2021).

Students become one of the most vital assets for a higher education institution in this case, students as consumers who enjoy educational services from academic need to get consideration whether they are satisfied or dissatisfied with the services provided because one of the ways to increase learning motivation is to provide a good educational services quality to students. Quality educational services will have an impact on their satisfaction and of course, will indirectly affect their learning motivation. As stated by Sumarsono (2021), if students are satisfied with the campus services they receive, they will be more active in attending lectures, as well as in participating in other student activities. On the other hand, if students are dissatisfied with the services they receive, they will not be motivated in various activities on campus.

Student satisfaction is an important factor in realizing student achievement in both academic and non-academic fields. Research on student satisfaction is very important because several studies on this problem have been discussed using various methods, such as the research conducted by (Saragih et al., 2021) using the C4.5 Algorithm method, (Sari et al., 2019) using the Naive Bayes Algorithm methods, and (Sodik & Ma'sum, 2021) using Fuzzy Service Quality Method.

Universitas Muhammdiyah Kalimantan Timur (UMKT) is a university that always follows educational progress, developing knowledge and technology that can

increase student awareness of the quality of service provided. Because The quality of service in the world of education is very important, it can help agencies in providing the appropriate quality of service with what students expect. And the Department of Public Health is one of the study programs at UMKT that has accreditation B, with a total of 854 active students. Measurement of student satisfaction is an activity that should be carried out periodically to find out what level of service has been provided. If the service is bad, then the University is obliged to be able to improve services. By knowing the level of student satisfaction, the University can improve service if it is not good and further improve service if the level of satisfaction is good.

To determine the level of student satisfaction, can be done with classification techniques using the C4.5 algorithm. The C4.5 Algorithm is a decision tree classification algorithm that is widely used because it has major advantages over other algorithms. The advantages of the C4.5 Algorithm are that it can produce a decision tree that is easy to interpret, has an acceptable level of accuracy, and is efficient in handling discrete and numeric type attributes (Taufiq & Yudihartanti, 2019), reinforced by the statement of Ferdian Harryanto & Hansun (2017), who said that the C4.5 Algorithm is the strongest Algorithm for the decision tree-making process when compared to other algorithms such as ID3, C5.0, and CART. The C4.5 algorithm has been widely applied in solving problems in several fields, such as from research (Irmayansyah & Firdaus, 2019) in the economics field, (Sasmita et al., 2021) in the social field, and (Aidi Saputra et al., 2020) in the education field.

Based from previous research shows that the C4.5 Algorithm is efficient and widely used in several fields. And the results from the analysis can be a reference for evaluating what needs to be considered and prepared for further actions to increase student satisfaction because in UMKT previously, there had never been a measurement of student satisfaction at the study program level. Therefore in this research, the researcher wanted to conduct an analysis at the study program level.

So based on the problem above, In this research wanted to analyze student satisfaction with offline learning performance with data mining techniques using the C4.5 Algorithm, which later in the future can help provide solutions for what type of service the most influential on satisfaction students so that these services can be upgraded to improve service quality.

1.2 Problem Statement

Student satisfaction with the quality of campus services they receive will certainly have an impact on the level of learning motivation and also have an impact on learning achievement.

Based on the background above, the problem to be discussed is to analyze student satisfaction with offline learning performance with data mining and using the C4.5 algorithm method at the Universitas Muhammadiyah Kalimantan Timur.

1.3 Research Objectives

The main objectives of this research is to analyze student satisfaction with offline learning performance with data mining and using the C4.5 algorithm method at the Universitas Muhammadiyah Kalimantan Timur, and split into several objects there are:

1. Collecting data using a questionnaire with the context of student satisfaction.
2. Perform validity and reliability tests to establish suitable parameters.
3. Processing valid data with the c4.5 Algorithm.
4. Evaluate performance.

1.4 Research Scope

Limitation of the problem used in this study to focus on solving problems that have been formulated, namely:

1. The scope of this research is only in the Department of Public Health 2019 generation semester 6.