CHAPTER I INTRODUCTION

I.1 Background

Technological developments are currently developing rapidly so that various innovations have sprung up in various fields in Indonesia, one of which is the telecommunications sector. In the field of telecommunications, the development is much faster with the emergence of various smartphone models that have been widely circulated. In line with technological developments, public sentiment or opinion is getting wider and more freely expressed in various media. Sentiment can be a big potential for companies who want to know the feedback from the public on the brand their trade. The brand has been considered as one of the most valuable intangible assets and brand management is an important priority for the management of a company or organization (Accurate, 2021). An interesting problem in the analytical sentiment of Samsung and Vivo is that the many smartphone models on the market provide diverse opinions to consumers and require a lot of time. There are many Samsung and Vivo product reviews with very many levels, such as handling big data. Classifying product reviews based on customer sentiment into positive and negative sentiments provides a better orientation for reviews. Based on Figure 1.1, it can be seen that based on the previous quarter, Samsung, which placed first in the second quarter of 2019, was ranked third in the second quarter of 2020, while Vivo, which was ranked fifth in the second quarter of 2019, became the first winner in the second quarter of 2020 (TribunPekanbaru,2020).

Indonesia **Smartphone** Market Share by Sales (%)	Q2 2019	Q2 2020
VIVO	7.8%	21.2%
OPPO	17.5%	20.6%
SAMSUNG _Counterpoint_	27.0%	19.6%
XIAOMI	21.9%	17.9%
REALME	7.6%	13.6%
OTHERS	18.3%	7.1%
TOTAL	100%	100%

Figure 1. 1 Market Share Smartphone Indonesia

In this research, the Smartphone products to be discussed are Vivo and Samsung. Vivo is one of the HP brands that are familiar in Indonesia. First released in 2009, its products continue to innovate in terms of the best quality hardware and software. Currently, Vivo excels in the mid-budget class with the best display and camera in its class. Meanwhile, Samsung is a sizable smartphone company. In every innovation, Samsung always produces quality products and is suitable for consumption by the wider community.

The use of social media Twitter quickly caught the attention of the Indonesian people, where the contents themselves were personal matters where one person shared stories, opinions, complaints, activities to selected people. Twitter experienced rapid growth and quickly gained popularity worldwide until January 2013. There were more than 500 million registered users on Twitter. The use of social media Twitter promptly caught the attention of the Indonesian people, where the contents themselves were personal matters where one person shared stories, opinions, complaints, activities to selected people. Many comments from Vivo and Samsung customers on Twitter can be used to find out what people think about the quality of the smartphone, such as the battery heats up fast, slow, limited camera features, insufficient memory, and so on. Customer opinions will describe their views on the quality of smartphones and influence the opinions of others so that they can change their thinking about the quality of smartphones. Sentiment analysis is very useful for analyzing comments on Twitter to be translated into something more meaningful and is needed in filtering public opinion and classified into positive, negative, and neutral classes. One of these was done by smartphone companies that are busy with Indonesian people, namely Samsung and Vivo, on social media because the two companies experienced an increase in sales at Vivo in 2021 and a decrease in sales at Samsung in 2020.

The problem that arises is that there are too many user comments and similarities, so it is difficult to categorize and analyze user comments. Then Two smartphones with the biggest brands, namely Samsung and Vivo. Many have experienced problems from lack of memory to store data and also camera features. A lot of customers who use two of these smartphones complain about the lack of memory

and also the lack of features on the camera that are not good. Therefore, here the author wants to identify and inform from customer reviews who are trying to complain about the two smartphones they use to provide suggestions and input for Samsung and Vivo. The purpose of sentiment analysis is to find patterns in an article, whether it has a positive or negative opinion. Therefore we need an algorithm that can manage the data based on the similarity to know the tendency of comments in conducting sentiment analysis.

The classification algorithm used is the K-Nearest Neighbor algorithm. The K-nearest neighbor algorithm (k-NN or KNN) is a method for classifying objects based on the learning data closest to the thing. In the learning phase, this algorithm only performs feature vector storage and classification of learning data. In the classification phase, the same features are calculated for the testing data. The distance from this new vector to all learning data vectors is calculated, and the closest k numbers are taken. The newly classified points are predicted to be included in the most classification of these points. KNN will group the calculation results with the training data with the most relatives in the specified range value. The distance between training data and test data is calculated using the Euclidean equation.

Based on research in 2017 regarding Sentiment Analysis on Twitter Data using KNN and SVM, from this study, it is known that the accuracy value of KNN is 84.32%, and the accuracy value of SVM is 77.97% (Rezwanul et al., 2017). Based on research conducted by previous researchers, researchers took the object of research regarding Samsung and Vivo customer reviews on the brand's Twitter account. In this study, the process started from collecting data using the Twitter API, which was taken on May 5, 2021, until July 22, 2021. After the data has been collected, the next process is to do manual labeling, then do data preprocessing, which consists of case folding, tokenization, stopword removal, stemming, and in the classification process using the K-Nearest Neighbor algorithm because it has

a high level of accuracy in sentiment analysis classifier. The author decided to conduct a sentiment analysis using the KNN algorithm.

I.2   Problem statement

Based on the explanation that has been described in the background above, the problems to be taken are as follows:

1. How to apply sentiment analysis with using the KNN algorithm?
2. How is the accuracy of the KNN algorithm?
3. How can sentiment analysis provide information about Samsung and Vivo Smartphones?

I.3   Research objectives

The research objective of this final project aims to:

1. To determine the results of the sentiment analysis on vivo and Samsung products.
2. To find out how to apply sentiment analysis using the KNN algorithm.
3. To find out what the public thinks about Vivo and Samsung products.

I.4   Research scopes

Research Scopes in Sentiment Analysis of Samsung and Vivo Smartphone Products is:

- Using data from social media twitter from May 5, 2021, until July 22, 2021.
- Using the K-Nearest Neighbor (KNN).
- The aspects used in this final project are Camera, Price, and Memory.

I.5   Research benefits

Based on this research, it has the following benefits:

- For the Community: a consideration for choosing a smartphone to use.

- For companies: to find out what the public thinks about their products in order to improve product quality for the better.
- For Universities: Become a journal reference regarding sentiment analysis on smartphone products Using KNN algorithm.

I.6   Writing System

This research is described by systematic writing as follows:

Chapter I   Introduction

This chapter contains a description of the context of the problem, research background, problem formulation, research objectives, research limitations, research benefits, and writing systematics.

Chapter II   Literature Review

This chapter contains literature relevant to the problems researched and discussed the results of previous studies. Part the second discusses the relationship between the concepts that are the subject of research studies and a description of the research contribution.

Chapter III   Research Methodology

This chapter describes the research steps in detail including: formulating research problems, formulating hypotheses, developing research models, identifying and operationalizing research variables, designing data collection and processing, conducting instrument testing, designing data processing analysis.

Chapter IV   Analysis and Collection Data

This chapter describes the steps taken in data analysis and collection, but for research that focuses on designing information systems/applications, the naming of this chapter follows the stages of implementing the algorithm used in research. For other types of research can also adjust the naming of this chapter.

Chapter V   Implementation and Testing

In this chapter, the results of the design, findings, analysis and data processing are presented. In addition, this chapter also contains validation or verification of the results of the research, so that these results have really solved the problem. Sensitivity analysis can also be used in this chapter to find out more about how the research results can be applied both specifically to the research context and in general in similar contexts. In addition, other evaluation methods can be applied to validate the TA results as needed.

Overall this chapter discusses in detail the results of the research and its reflection on the research objectives. For research that focuses on sentiment analysis on the use of Samsung and vivo smartphone products, the naming of this chapter follows the stages of applying sentiment analysis used in the study.

Chapter VI   Conclusion and Suggestion

This chapter describes the conclusions of the research conducted and the answers to the research questions presented in the introduction. Research suggestions are presented in this chapter for further research.