

# INTRODUCTION

The rapid development of information and communication technology in the world is inseparable from web service providers that offer diverse information. This information, which leads to an increase in data, The increasing need for data and information encourages people to develop new technologies so that data and information processing can be done easily and quickly, one of which is in terms of using social media applications, mostly in the form of text data, can be a highly potential source to be further explored[1]. In this paper, we look at one popular platform called X and build a model to classify "X" into positive and negative sentiments[2]. X is one of the popular social media platforms worldwide. It is a web-based platform that allows users to share short messages. X also has a significant influence in shaping public opinion and has become an important source of news in the digital era. Messages or posts conveyed by users can contribute to enhancing responses and efforts in facing disasters. This research will focus on the sentiment analysis of natural disasters.

Natural disasters are disasters that can cause great losses to life, the environment, and property. Most of them are caused by extreme natural phenomena that cannot be completely avoided. With the right understanding, planning, and action, the impact can be minimized, and humanity can be better prepared to deal with it. Some of these natural disasters are earthquakes, floods, and eruptions of Mount Merapi.

1) Earthquakes are geological phenomena that occur when energy stored in the earth's crust is suddenly released, causing vibrations on the earth's surface.

2) Flooding is a natural phenomenon caused by the evaporation of water that exceeds the normal capacity of a river, lake, or watershed.

3) The eruption of Mount Merapi is a natural phenomenon that occurs on the island of Java, Indonesia, involving the release of gases, lava, and volcanic material. The impact can vary from small to large scales, significantly affecting the life and wealth around it. The study focuses on the analysis of tweets related to the eruption of Mount Merapi on social media platform X, which is key to understanding social dynamics during and after natural disasters. With the main goal of classifying the positive and negative sentiment of the tweets, with the hope of providing in-depth insights for future disaster response and risk management efforts.

However, considering the overwhelming number of posts, manual analysis becomes a very difficult task. One method that can be used to manage these posts is by transforming them into useful messages to enhance their usability by applying sentiment analysis.

Sentiment analysis is the process of automatically understanding and managing textual data to obtain information, by leveraging sentiment analysis and automating these interactions, you can

definitely dig into various fragments of your business clients and improve your understanding of sentiment in these segments[3]. One of the Machine Learning methods that can be used in sentiment analysis is the Naïve Bayes algorithm. Naïve Bayes is a classification method based on statistics and Bayesian theorem. It relies on the assumption of feature independence. In sentiment analysis, it is used to differentiate sentiments in tweets (positive, negative, or neutral) by using the text within the tweets as the main features[4].

The objective of this research is to categorize data from Twitter into meaningful categories that can be utilized to direct aid to specific locations. Additionally, the government can use this data to assess positive and negative sentiments that emerge on Twitter during disasters. This sentiment analysis can provide insights into the general state of the population, enabling the government to be more responsive to the needs of its citizens. Furthermore, the identification of specific categories such as water supply and evacuation routes represent a novel approach in detecting and understanding the community's situation during disasters, thereby enhancing disaster response and management strategies. Just like categorizing data samples is in research[5].

The study[6] using the Modified Naïve Bayes classification can classify academic performance by research activities better than decision trees and regular Naïve Bayes, 96.15% and 94.23%, respectively. Nevertheless, the results of this study conform to the initial classification for university research office level before being submitted to the respective national education authorities for further evaluation. This research provides deeper insights into the classification of tweets containing hate speech by X users in Indonesia.