
Opinion to Emotion Mining: A Sentiment Analysis towards Super Typhoon Ompong**Dr. Albert Vinluan**

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ABSTRACT

Twitter as one of the microblogging websites has gained its popularity due to ease sharing of contents in various forms, which include text, images and links. Social media users post and share real time messages about their opinions or comments on a variety of topics, express their typhoon. The Super typhoon Ompong has been considered as powerful typhoon that struck the Island of Luzon September 15, 2018. It has been the strongest typhoon to strike Luzon since Typhoon Megi in 2010. With this, many tweets have been generated expressing people's real time reactions and opinions whether it is positive, negative or neutral regarding this phenomena. Owing to the increasing high coverage and impact of Twitter, opinions of people on some issues and their emotion towards the super typhoon ompong were shared through social media can be significantly influenced. It is in this context, that the researchers conducted this study to perform the opinion to emotion mining based on the sentiment analysis towards super typhoon ompong were data was generated and collected through a post and message on twitter. Specifically, it sought to

determine the sentiments before, during and after the landfall; and perform data visualization using word cloud.

Keywords: *Opinion Mining, Emotion Mining, Ompong,*

Introduction

Sentiment Analysis is a growing area in Natural Language Processing (NLP) with research ranging from document level classification [1] to learning the polarity of words and phrases [2] [3]. It is often referred to the general method of extracting polarity and subjectivity from semantic orientation, which refers to the strength of words and polarity text or phrases [4]. Sentiment mining as one of the important aspects of data mining, important data can be mined based on the positive or the negative senses of the collected data. It also known as Opinion Mining, which refers to the use of natural language processing, text analysis and computational linguistics to identify and extract subjective information in the source materials. Here

are the source materials refer to the opinions or review or comments give in various social networking sites [5]. Emotion mining is also using similar technologies but is concerned with detecting and classifying writers emotions towards events or topics [16]. Emotion classification allows us to identify the feelings of individuals towards specific events [14].

Literature Review

Recently, twitter has also become popular venue among scientist to conduct research studies from various perspectives. For instance, Lee et al. investigated the Twitter usage behavior of journalist [6]. In another study, the tsunami warning in Padang Indonesia and reactions among twitter users have been examined [7]. A study by Crannel et al. investigated Twitter usage behaviors of cancer patients [8]. They found that cancer patients described and explain their feelings about their diseases openly and candidly on twitter.

Similarly, Neppali et al. investigated the use of sentiment analysis on Twitter for extracting information in emergency cases. They analyzed the Twitter users' sentiments in affected locations during Hurricane Sandy They also presented location-based sentiments changes [9].

Sentiment analysis in microblogging platforms has also been drawing attention from researchers focusing on different languages Tellez et al. performed a sentiment analysis study in Spanish language and analyzed text transformations using Support Vector machines as classifiers [10]. From text classification perspective, Liao et al. performed sentiment

analysis on 30,000 Chinese microblogs and they classified messages into negatives, neural and positive categories [11]. Using movie data, Khan et al. examined the sentiments of 50,000 movie reviews [12].

Methodology

The researchers was collected the data through post and message on twitter and perform the opinion to emotion mining based on a sentiment analysis towards super typhoon ompong.

Specifically, it sought the following: 1) determine the sentiment before, during and after the landfall; and 2) perform the data visualization using word cloud.

Result

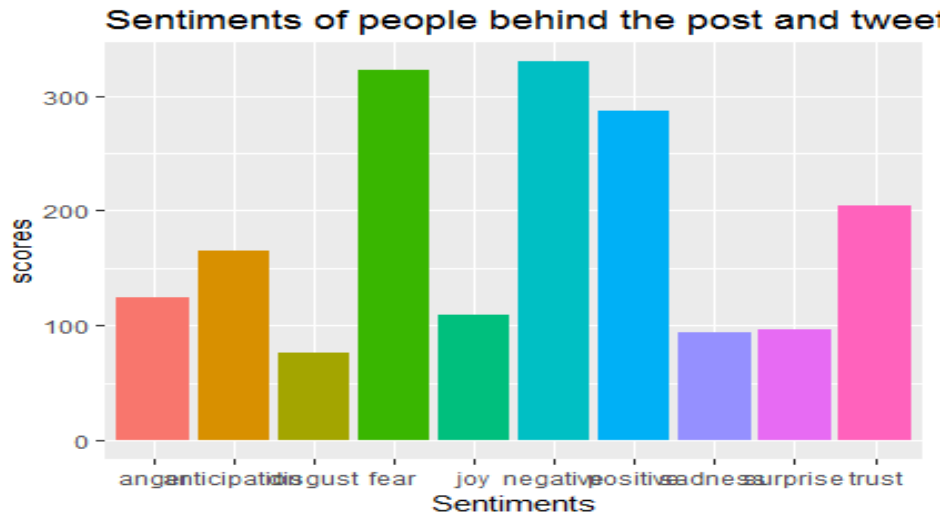


Fig. 1: The sentiment analysis behind the post and tweets on twitter.

The figure 1 of the sentiment analysis behind the post and tweets on twitter shows the scores of each bar. Each bar represents the different emotion based on the different opinion on twitter. From the figure itself, it shows the first five sentiments that has the higher scores. These are negative, positive, fear, trust and anticipation[12].



Fig. 2: Word Cloud

The figure 2 of word cloud shows the number of words under each sentiments. Aside the negative and positive that normally projected of the researchers, we just look which among[13].

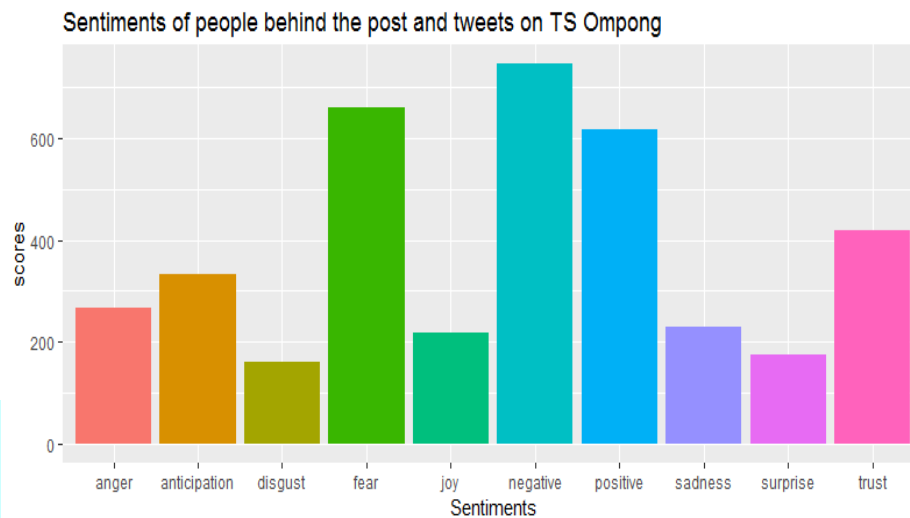


Fig. 3:

Before the landfall of Super Typhoon Ompong

The figure 3 of before the landfall of super typhoon ompong shows the score of each sentiments. Still negative, positive and fear has a higher scores among others[14].

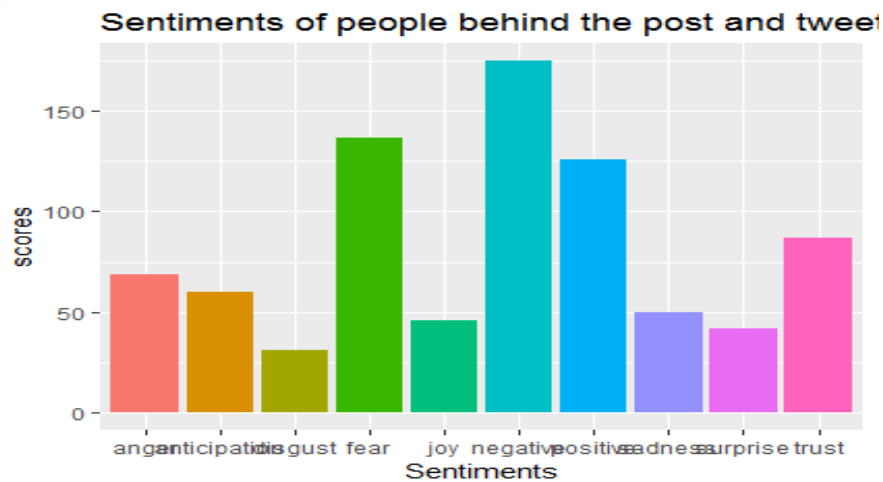


Fig. 4: During the landfall of Super Typhoon Ompong

The figure 4 of during the landfall of super typhoon ompong shows the scores of each sentiments. In this figure, it shows that there is quite similar from the figure 1.

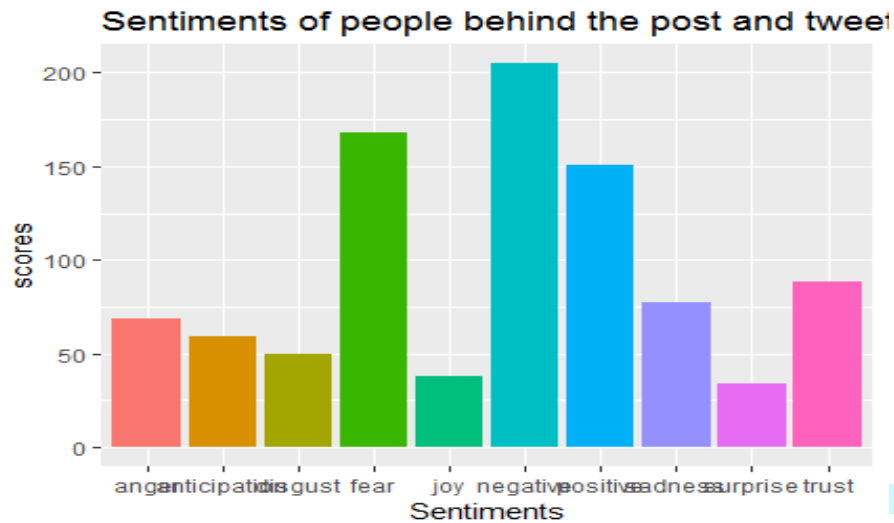


Fig. 5: After the landfall of Super Typhoon Ompong

The figure 5 of after the landfall of super typhoon ompongs shows the score of each sentiments. In this figure, nothing different among the sentiments except of Joy and Surprise. There is a little changes from the first two figures above[15].

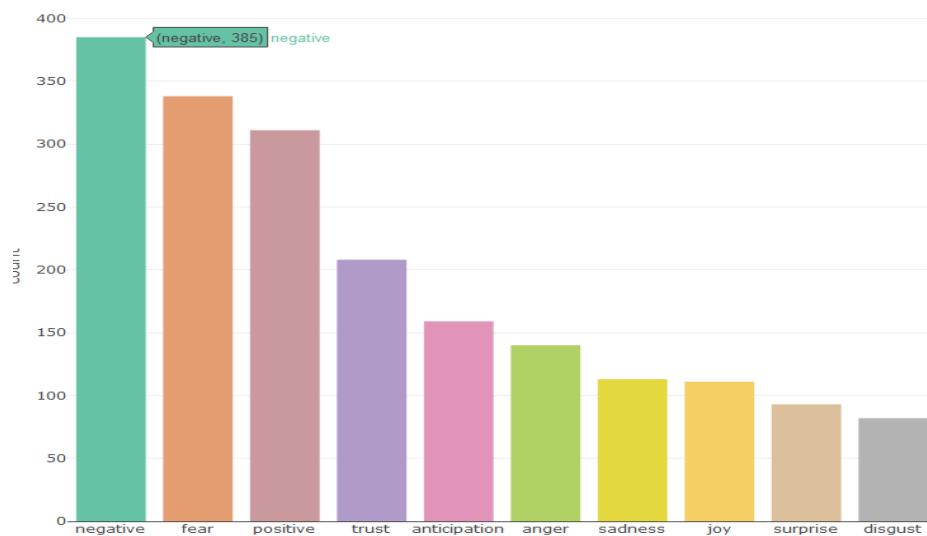


Fig. 5: Visualization of Sentiments

The figure 5 of visualization of sentiments shows the higher score of sentiment, which is negative and lower score of sentiment of disgust[16].

Discussion/Conclusion

The study of opinion to emotion mining, a sentiment analysis towards super typhoon ompong, the researchers findings are as follows:

1. The first five sentiments which has the higher scores are negative, fear, positive, trust and anticipation.
2. The word cloud shown are the words falls of each sentiments. Aside the negative and positive of opinion to emotion mining, there are words that fall of each sentiments.
3. Comparing the before, during and after the landfall of super typhoon ompong, there is a little changes particularly of surprise and disgust sentiments.

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