

SENTIMENT ANALYSIS OF FILIPINOS AND EFFECTS OF EXTREME COMMUNITY QUARANTINE DUE TO CORONAVIRUS (COVID-19) PANDEMIC

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Abstract

The start of the Extreme Community Quarantine in the Philippines last March 2020 became the intervention of the government to slow down the spread of the coronavirus or more commonly known as COVID-19. The Pandemic was interfering many operations in the world which brought challenges to all affected countries which includes the Philippines. This study aims to reveal the sentiment of the Filipinos in the effect of extreme community quarantine caused by COVID-19 Pandemic particularly Luzon. It aims to gather the tweets of Twitter users in the Philippines in Luzon areas. This research also analyzes the effect of extreme community quarantine and other effects of the Pandemic to personal lifestyle based on the tweets of the users. Natural Language Processing is one of the methodologies to determine the sentiment of users from extracted tweets. Opinions are treated as data for analysis. A qualitative approach was also used in determining the effects of the extreme community quarantine in the Luzon area. The sentiment reveals that most of the Filipinos encountered several problems concerning extreme community quarantine. The general sentiment shows that one basic needs are affected regarding the food supply and support from the government. It is concluded that most of the twitter users in Luzon have negative sentiment over COVID-19, while some users are speaking about the positive effects, it was miscredited to the coronavirus instead of crediting to the decision such as community quarantine, lockdown and social distancing. It is concluded that negative sentiments increase over time, and it is expected that negative sentiments among twitter users increases. It is recommended that intervention should be done based on the requirement of the Filipinos who encounter problem in the food shortage and everyone should support to flatten the curve in order for the operations and life back to normal. This study also aims to provide recommendations in the future.

Keywords: Sentiment Analysis, Coronavirus, COVID-19 Pandemic

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INTRODUCTION

The Pandemic which is known as COVID-19 was interfering many operations in the world which brought challenges to all affected countries (Chen et al., 2020; Fauci et al., 2020; Hageman, 2020; Heymann & Shindo, 2020; Sun et al., 2020; Velavan & Meyer, 2020). Coronavirus threatens most part of the world, even the rich countries such as the United States of America and Italy, there is around 2%-5% mortality rate of the new virus. Lockdown in Wuhan, where is the former epicenter of the virus was implemented in order to slow down the transmission of the disease (Wu et al., 2020).

The business sector, families and the masses are not excluded in the effect of the Pandemic. Luzon in the Philippines imposes an extreme community quarantine all over the area that creates huge adjustments to the constituents of the country. While the cure in the virus is not yet available, slowing down the virus is the intervention that the government is doing (Wu et al., 2020).

The effects of the disease have been felt all over the world. The challenging times have left most of the family to suffer due to no work, no pay policy that is imposed by some small companies. In the Philippines, the country leader has extended the lockdown of the country's main island of Luzon, including Manila, until the end of April which was suppose to due in the Mid of April, while it is uncertain that the lockdown could be extended, the effects still continuous. There is no known effect of the coronavirus in any factor, but the decision which is based on slowing the transmission may have a positive effect. While there is a favourable situation happening in the world (Child, 2020), it should not be credited to the deadly coronavirus but should be credited to the decision by the authorities. Pre-prints and

research publications regarding coronavirus also increase (Kupferschmidt, 2020a, 2020b). There is also skyrocketed used of Video Conferencing application that helps others to learn about the new trends in technology. Zoom, Google Meet, are just a few of the video-conferencing app that has seen a massive rise in downloads since quarantines were imposed around the world, which is now being used by millions for work and social gatherings (Wakefield, 2020).

Research Objective

This study aims to reveal the sentiment of the Filipinos in the effect of extreme community quarantine caused by COVID-19 Pandemic. It aims to gather the tweets of Twitter users in the Philippines. This research also analyzes the effect of the Filipino sentiments due to extreme community quarantine and other effects of the Pandemic to personal lifestyle.

Scope and Delimitation

The study is limited to the extracted tweets of Filipino people with several keywords searched. The tweets are also limited in the Philippines, where it is one of the ASEAN countries that has been affected by the coronavirus. Twitter tweets are the only source of the data, and other social media platform are not included.

Similar Studies

Coronavirus affects most of the operations, not just in the Philippines but all around the affected countries in the world. Sentiment analysis serves as an excellent avenue to determine the situation. The news may be late in providing sentiments of netizens, but social media provide insights about what they feel at the moment (Q. Liu et al., 2020). Students are in the digital age whom the majority use social media. It was burse out that most students are expecting class suspensions. Institutions are closing

down and switching to an alternative mode of instructional delivery (De Guzman & Pastor, 2020; Pastor, 2020), and many educators saw the importance of technological competencies, such as the use of the online platform as an advantage (Ventayen, 2019).

In the previous outbreak of MERS-CoV, a three are more than 6 million tweets were analyzed with the keyword "MERS" and 32 other health topics. Researcher used trends in MERS sentiment scores using a piecewise regression model. The study identified a significant increasing trend in MERS sentiment scores and concluded that sentiment analysis studies suggests that Social Media Monitoring (SMM) that could serve as a supplementary tool for traditional infectious disease surveillance. The sentiment scores could reflect real-time public opinions and emotions related to any outbreak or pandemic (Dai & Charnigo, 2018).

Business sectors in the epicenter and other country are also affected where most of the business encounter financial problems due to effects of the coronavirus pandemic (Hasanat et al., 2020; Hoque et al., 2020). While there no known cure for the virus, most of the scientist in the field is on the rush on finding a way to cure and stop the pandemic (Casella et al., 2020; Hageman, 2020; Rodriguez-Morales et al., 2020). Airlines are facing recession and problems due to disruption of operations. Several airline temporarily lay off employes in order to ease the situation (Cruz-Pacheco et al., 2020; Josephs, 2020; Psztor & Sider, 2020; Sider & Mann, 2020).

The Significance of the Study

This study aims to aid on what intervention should be used in to help those who are affected with the extreme community quarantine. This study utilized sentiment analysis through natural language processing, and data are from social media micro-blogs correctly extracted tweets from Twitter which is one of the most popular social networks. Due to most opinionated data recorded in digital form for analysis, Sentiment analysis systems are being applied to help authorities to make a decision based on the sentiment (B. Liu, 2012; Pang & Lee, 2008).

METHODOLOGIES

Natural Language Processing is one of the methodologies in order to determine the sentiment of users from extracted tweets. Opinions are treated as data for analysis. This paper Analyze tweets over a period of certain time from the date of lockdown the Luzon area until the 3rd week. It monitor social media mentions of coronavirus and COVID-19 and automatically categorize by sentiment. Qualitative research approach was also used in order to extract the content of the negative and positive sentiments of the users.

Research Design

In this research, the researcher presents an approach to exploring twitter data by extracting data from a tool. The researcher's approach attempts to automatically analyze large volumes of twitter comments with respect to what was commented on positively or negatively. A qualitative approach was also used in this research paper in order to discuss the sentiment of the users.

Data Collection and Text Preparation

Rapidminer was used to extract tweets from Twitter with several keywords and hashtags used, such as #covid-19, #ecq, #lockdown, and others. Most of the tweets are filtered based on location, which is the Philippines as the limitation of the study. The gathered tweet was extracted in the spreadsheet for future analysis.

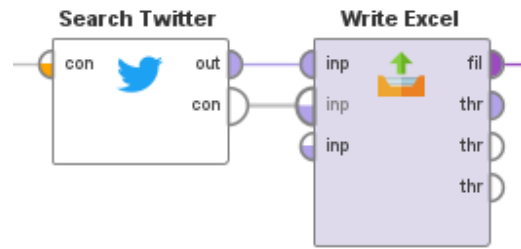


Figure 1 shows the Data Collection

Sentiment Detection and Sentiment Classification

AYLIEN Sentiment Analysis API was used in order to determine the sentiments of the tweets. It was also used several data visualization guide in for the purpose of presentation.

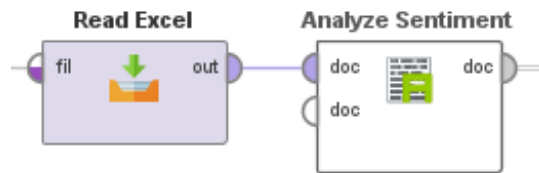


Figure 2 Shows the Sentiment Detection

Due to the limitation of Rapidminer in gathering tweets, the researcher utilize other methods in order to gather tweets in a certain duration (Sistilli, n.d.).

PRESENTATION OF RESULTS

Social media use in the times of lockdown is increasing, and more people are experiencing more time in social media than before due to more time at home. The tweets have been extracted in 3 Tuesday of the weeks starting on the date of the lockdown.

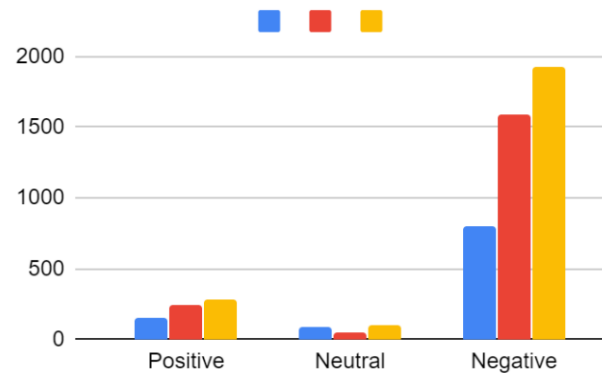


Figure 3 Sentiment Analysis

Based on the Figure, it is obviously shown that most of the sentiment of the users is Negative. In the first week of lockdown, there are 76.81% negative sentiments, followed by 84.71% and 83.42%, respectively. While there is a slight difference between the second week and the third week, the result still shows that the number of negative sentiments increases overtime. As shown in Figure 3, Blue represents the first week, and yellow represents the third week.

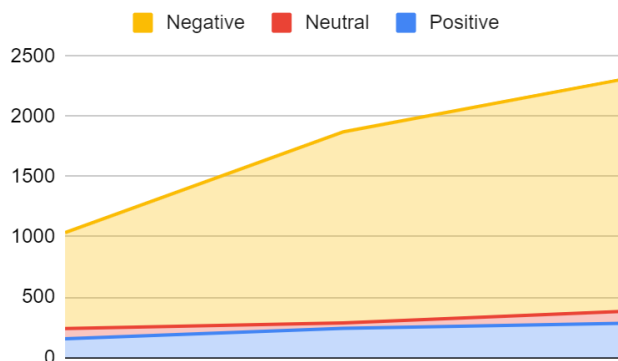


Figure 4 Trendline

Most of the twitter users in Luzon showed that negative emotions such as anxiety, depression, and indignation increase, while the scores of positive emotions and life satisfaction decreased. Some students who plan to take engineering in the college (Camara, 2020) has negative sentiment if the studies still pursue. The study agrees with recent studies regarding sentiment analysis of the users (Li et al., 2020).

The trendline of the negative sentiments also increases as the lockdown becomes longer. COVID-19 outbreak was first reported in Wuhan, China, and reached boundaries such as the Philippines. Coronatracker predicted the increase and trendline of negative comments regarding coronavirus (Amira et al., 2020).

DISCUSSIONS

Emotions continue to run high as the number of COVID-19 cases steadily increases in the Philippines, with the people of Luzon divided in terms of their response towards the enhanced community quarantine (ECQ) measures. Some citizens continue to praise the president for the measures implemented to contain the crisis, but a growing number of netizens are telling a different side of the story online. And as the lockdown on the island of over 57 million residents continues, so does the increase in the number of residents expressing discontent over what they see as unfair restrictions and incompetence in the part of the president.

For example, recent developments in events involving several influential politicians have triggered outrage from many in the public, resulting in a drastic increase in negative reactions from netizens on various social media platforms. On Twitter, the hashtags #OUSTDUTERTENOW and #OustDuterte went trending in the country (Rappler, 2020; Twitter, 2020a), particularly in the NCR region, as thousands of netizens called out the president for what they perceive to be unjust and inhumane measures implemented under ECQ policies (Yap, 2020).

Some citizens have also raised doubts regarding the veracity of the COVID-19 data being released to the public. Speculations regarding the factuality of the reported numbers arose after a Luzon-based journalist posted on social media screenshots of his conversations with several frontline hospital workers who have been allegedly restricted by their respective hospital management teams from divulging the real COVID-19 death count. Uploaded along with these images was a screenshot of a letter from a hospital in Quezon City requesting for more body bags due to the unprecedented increase of COVID-19 deaths. The topic Arnold Clavio, the journalist who has revealed the controversial information, is now trending on social media. The images he uploaded have sparked skepticism for many in Luzon regarding the transparency of the Department of Health in its COVID-19 updates, as well as fears that Luzon might become the next Wuhan in the Philippines if these speculations are proven true (Gotinga, 2020).

But data integrity is not the only concern of Filipinos in Luzon; food shortage has become a pressing issue as well. With most business operations temporarily put on hold because of the quarantine and a huge number of employees suddenly out of jobs as a result, the risk of running out of food has become very real. This is true especially among the more than 17 million Filipinos living below the national poverty line, a substantial number of which live in Luzon (Rivas, 2019). While the government has repeatedly assured the public that there is a sufficient supply of food and other necessities, concern over the lack of funds to buy adequate food continues. Many are hoarding goods in panic, thinking they might run out of essentials if they do not stock up. And some have taken advantage of the crisis by overpricing essential items such as face masks, alcohol, and personal protective equipment (PPE) despite the price freeze instituted by the Department of Trade and Industry for items like these.

Under the ECQ guidelines, the government has restricted much of the people's movements, affecting many of those in the lower-income class whose earnings are mostly just enough to get them through one day at a time. Citizens categorized under this category, for example, are public utility vehicle drivers who mostly rely on their daily earnings to feed themselves and their families—with little cash left for savings. With the quarantine measures in place, these individuals have lost access to their means of living. Out of desperation, some family heads have risked arrest—breaking quarantine rules and regulations to try to earn a living despite the COVID-19 threat. Others, with the support of urban poor groups, have taken their grievances to the streets, crying out for a solution to the financial crisis brought about by the pandemic. The government has strongly responded to these actions, citing arrest and even death when the situation called for it as punishment for individuals who continue to violate the quarantine measures for social distancing. The public is again divided on these disciplinary measures, with many crying out against what they view as dictatorial. In fact, the hashtag #SolusyongMedikalHindiMilitar has been trending online for some time now, particularly in the National Capital Region (Twitter, 2020b).

There is also a growing dissatisfaction over the alleged unequal distribution by government officials of relief goods and monetary assistance. A financial assistance program spearheaded by the government has recently been started, under which almost 18 million households categorized under low-income earners are targeted to receive emergency subsidy during the quarantine. While government agencies assigned to distribute relief funds to qualified recipients state that they are doing what they could to help the most vulnerable sector, complaints regarding delays and alleged discrepancies in the government's relief efforts continue to make noise on social media. Local officials in some areas have been bombarded with negative comments, with their constituents questioning the delays in the relief distribution efforts. Some citizens have expressed worries that they are being overlooked by their local officials despite being on the list of qualified recipients for government assistance. Others are wondering out loud whether they'll ever receive any of the promised funds. And in some places, citizens are expressing disappointment, citing that the cash they've received under the government's relief program offers only temporary relief at best.

More and more citizens are now airing their frustrations over the seeming helplessness of the present situation. People are venting their pent-up emotions online as the outbreak continues on a global scale—disrupting all sense of normalcy. Adding to the people's growing list of concerns is the new reality that the present outbreak is still beyond science. Worries over the country's lack of testing kits, PPEs, medical equipment, hospital

beds, quarantine spaces, and frontline health workers among others, continue to linger in people's minds. And with much uncertainty looming over when things will be back to normal, and with no definite end to the COVID-19 outbreak clearly in sight, the people of Luzon continue to make do with what resources they have to make their voices and grievances heard online, where they feel the government can hear them out best.

Coronavirus is still a hot topic in the social media all around the globe. Despite the negative sentiments of the social media users, most of the positive sentiments of the users is about sharing the possible hope and cure for the coronavirus, and users share prayers and hoping for a cure that eliminates the coronavirus.

CONCLUSION

It is concluded that most of the twitter users in Luzon have negative sentiment over COVID-19, while some users are speaking about the positive effects of the pandemic, it was miscredited to the coronavirus instead of crediting to the decision such as community quarantine, lockdown, and social distancing. It is concluded that negative sentiments increase over time, and it is expected that negative sentiments among twitter users increases. Despite the negative sentiments of the twitter users in Luzon, there are increasing number of social media users. When it comes to the effects of Lockdown in Luzon, most of the users experience food shortage and worrying about the possible situation in the future. Most of the users are also looking for possible governmental help that could help them to ease the situation. The sentiment and effects of the coronavirus and the lockdown correlates with each other that users are looking for possible solution in order to survive.

RECOMMENDATION

While the pandemic is still on its occurrence, it is recommended that continuous study should be conducted in order to determine the sentiments of constituents in the Philippines. The data could help those who need the data in order to provide intervention or support to the sentiment of the users. The data would assist policymakers in developing actionable policies and help clinical practitioners provide timely services to affected populations. It is also recommended that future studies related to the sentiment of users around the world could be conducted to provide solution for global perspective.

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