Positive and Negative Emotions on Social Media During Stay at Home Phase

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ABSTRACT

This research concerns with language patterns to express the emotional condition on social media. The research objective is to explain the use of language on Twitter to represent the positive and negative emotions from personal status. To enrich the information about the psychological condition through the linguistic pattern on social media, Linguistic Inquiry, and Word Count is used to build a strong relationship between linguistics pattern with the psychological conditions of emotions. This study's data are in written form, such as words, phrases, and sentences collected from Twitter from June up to August 2020 during the pandemic stay at home phase. There are seven users in some countries which use English as their first or second language. The result shows that status updates observed mostly cover positive emotions compared to negative ones. It reflects some extent that the positive emotions outweigh negative emotions in life in general. Therefore, positive biases in status updates are only established if they are more positive than emotional life or even social settings.

Keywords: emotion, linguistic inquiry, social media, status update

1. INTRODUCTION

Since the millennial era, individuals tend to express their feelings, mood, emotional conditions, and opinions through social media in the form of a short text message [1]. Personal information and community interactions from many sources are provided in social media open access. Twitter is one of the open-access social media found by Jack Dorsey in 2006, which is still widely used by many people to share information, discuss, and even become one of the business media. More than 100 million people use Twitter and send 500 million tweets every day [2]. Twitter became one of the top 5 most visited sites by many people [3]. It points out that social media plays a crucial role in the lives of many people today, especially those aged between 18 to 29 [4].

Most people express their feelings, moods, and emotions in words, phrases, or sentences through their status on social media. Not surprisingly, when someone is sad, they will tend to use the more emotional and negative words in their status [5]. Conversely, they tend to use more expressive and more positive words when expressing happiness.

Emotions are puzzles for psychologists that cannot be interpreted exactly because they can occur simultaneously and relate to each other with different phenomena and constructions [6]. The psychological reality about emotions cannot be seen only from the language patterns used [7]. It is possible if the emotions and moods have the same construction but using the opposite word. Furthermore, emotions can have the same construction with different phenomena [8]. Therefore, the understanding of emotion cannot be interpreted literally and absolute.

Phenomenon and analysis of emotions and psychological conditions are very complex and quite complicated to identify. Coupled with the widespread use of social media among people who tend to express their emotions through a personal status on the internet, it provides innovations for psychologists and researchers to analyze someone's emotions and psychological conditions. The theory and application of LIWC (Linguistic Inquiry and Word Count) [9] and Computerized Text Analysis offered assistance to analyze the mental condition of the individual through computerized content effortlessly [10].

Some relevant studies are investigated to enrich the information regarding the use of the social media platform as the research subject. First is the study on Facebook [11][12][13]. Second is the study on Twitter [1][2][14][15][16]. According to those relevant studies on social media, the researchers classified it into a more specific category. First is the study related to

psychological conditions such as emotion, degree of depression, and mood, through language on social media [1][11][12][15][17]. The researchers also investigated the information related to linguistic aspects to identify emotion on Twitter [1][2][15][18].

Inside the psycholinguistics approach, several questions are appeared to gain rich information and a deep understanding of how the emotion is predicted by the language. Another question is whether or not the status always represents one's emotional condition. The positive and negative emotions can be investigated with Linguistic Inquiry and Word Count since it is a straightforward content investigation program that checks words in mentally significant categories. The findings also predicted the emotional and psychological condition of the Twitter user [2]. It shows that there are various psychological conditions making people want to share their emotions on social media.

Based on the previous studies listed above, some studies use language patterns to identify moods, emotions, gender, personality, age, and depression through social media. Especially with the rise of the current use of Twitter among adolescents to adults, there are many personal statuses or tweets representing someone's emotion. In this manner, the psycholinguistic approach would be an effective way to analyze this kind of subject. By utilizing the application and hypothesis of LIWC and Computerized Text Analysis, the rest would be straightforward for analysts to analyze the negative and positive emotions and feelings to someone's mental condition on social media, particularly during the current pandemic stay at home phase. Therefore, the difference in this study with others is about the object and focus of the research. This research investigated the user's emotions beyond their status on Twitter. This theory provides a vast dictionary with each word will have one or more categories [19].

This research will enrich the empirical finding on the variety of language patterns to express social media's emotional condition. The research objective is to explain the use of language on Twitter to represent the positive emotions from personal status. Besides, it aims to explain the use of language on Twitter to represent the negative emotions from personal status. To enrich the information about the psychological condition through the linguistic pattern on social media, Linguistic Inquiry, and Word Count can build a strong relationship between linguistics pattern with the psychological conditions of emotions in more detailed calculations.

2. METHOD

In this study, the researchers focused more on the type of qualitative research in document studies. It uses qualitative methods that function to understand of the phenomenon that is happening [20]. This study focused on the type of qualitative research in document studies.

It focuses on the analysis or interpretation of written material based on the context.

In this case, the researchers want to analyze and interpret written statues on Twitter to determine the positive and negative emotions experienced by the user through a psycholinguistic approach. The researchers selected some accounts on Twitter based on some criteria. The accounts must be active during the pandemic stay at home phase and the account users use English in their statuses. The tweets cover several issues, including the coronavirus issues. Then the researchers classified the status in several emotional modes, such as positive and negative emotions.

2.1. Instrument

This research was carried out starting from the data search process, data collection, up to the process of analyzing the data and concluding the research results. In this study, the researchers also used instruments in the form of books and journals to look for some references to psycholinguistics and language use in social media. Tool such as smartphone media were used to access and monitor the activities of Twitter users.

2.2 Data and Data Source

The data of this study are in written form, such as words, phrases, and sentences. The data were collected from Twitter. The participants will be taken randomly and confirmed active Twitter users from June up to August 2020. The researchers took the account in English. There are about seven users in some countries which use English as their first or second language.

2.3 Data collection

In this study, the data were fully taken from Twitter. The process of data collection involved several stages. The first step is identifying users who use English as their first or second language. The second is making sure that they are active for several months from August up to June 2020. The third is collecting the personal status, excluding retweets and replies. Fourth, from the personal status that has been collected, it is classified based on words, phrases, and sentences that could indicate the emotional condition they experienced.

2.4 Data Analysis

After the data collection process, the researchers analyzed the data in several stages. The first step is classifying the positive and negative emotions contained in words, phrases, and sentences. In the second step, the researchers analyzed the linguistic patterns using the theory of Linguistic Inquiry and Word Count (LIWC) [9]. In the third step, the researchers began to describe Twitter users' emotional state and the final step is drawing conclusion.

3. RESULTS AND DISCUSSION

3.1 @dzewde

This study's first account is Daniel Zewde (@dzewde), who comes from Indianapolis, US. This account does not post many photos or videos so that it is under the criteria of the object in this study which focuses on linguistic patterns in personal status. There are 26 personal statuses of Zewde from June to August 2020. The results obtained are 14 statuses, including positive emotions and 12 states expressing negative emotions. This account often mentions several other accounts in its posts to strengthen the status or written statement. Like the status written on June 29, which in that status he mentioned another account (@doraborasays) to strengthen the status made, namely about his past experiences - "Hey, @doraborasays ... remember that time we broke into someone's house during Driver's Ed? Lololol."

The word "broke" in this status does indicate a negative word, but then there is an abbreviation "LOL", which indicates something funny, even the word "Lol" has been repeated three times for "Lololol". He wants to remind others of something that was considered funny or ridiculous when he entered someone's house during Driver's Ed, which was done together with a friend (@doraborasays). The status sentence is classified as an expression of positive emotions as the word "broke" refers to a ridiculous story that the account owner and his friends had committed.

For measuring the manual analysis above, this study has used the traditional LIWC analysis, which calculates the data into the percentage of each LIWC category, such as social words, negative and positive emotions, analytic, etc. According to the traditional LIWC analysis, the percentage of positive emotions is higher than negative emotions. The average of positive emotions is about 4,57 from 4,1 data and the average of negative emotions is 2,10 from 1,8 data. Therefore, the results obtained from the manual analysis are related to calculations from traditional LIWC analysis in which the overall data taken from 2 June 2020 to 17 August contain more positive emotions than negative emotions.

3.2 (@jennylynnfisch

The second account in this research is Jenny Fischer (@jennylynnfisch) from New York, US. There are 31 personal statuses of Fischer from June and August 2020. These personal tweets are then classified into positive emotions and negative emotions. Then from the overall status, the results obtained are 24 statuses categorized as positive emotional outbursts and 7 statuses categorized as negative emotional outbursts. Most of the tweets contain positive vibes and motivations aimed at people who follow them on Twitter. Furthermore, this account also frequently discusses recent issues regarding Black Lives Matter, which had become a trending topic in the last few months.

Based on the identification between content and style words, several words are included in negative emotions, including the words "shot", "tragedy", and "fight". Several other words fall into the category of positive emotions such as the word "better", "justice", "demanding". In this case, positive emotions and negative emotions appear simultaneously in a sentence. Classification of these words cannot be used as a reference in determining categories of positive emotions or negative emotions in a sentence. Therefore, it is necessary to analyze it contextually in the whole sentence. So what is meant by the status made on August 25, 2020 is about the story of a Wisconsin man named Jacob Blake who was shot by police seven times at his back in front of his three children. This man has a better view of a tragedy, but it turns out that this man's story ends ill-fated. After telling a fragment of Jacob Blake's story, the owner of this account (@jennylynnfisch) gave a kind of quote to continue to fight for good and justice whenever and wherever. Thus, contextually this status contains elements of positive emotions. The positive emotions in this sentence are about how the account owner gives an example of an event and takes the positive side that can be taken from the event. Therefore, the words "shot", "fight", and "tragedy" do not mean negative emotions as they only serve as a complement to a story told by the account owner.

The traditional LIWC analysis showed that the percentage of positive emotions is higher than negative emotions for measuring the manual analysis above. The average of positive emotions is about 4,57 from 6,2 data and the average of negative emotions is 2,10 from 1,7 data. Therefore, the results obtained from the manual analysis are related to calculations from traditional LIWC analysis in which the overall data taken from 2 June to 30 August 2020 contains more positive emotions than negative emotions.

3.3 @maddieheaps

The third account in this study is Maddie Heaps (@maddieheaps) from \San Diego, California. Compared to the two previous accounts, this account is super active in using Twitter social media. Almost every day, this Twitter account shows its existence in the form of personal status, retweet, or replay. This account can create personal status more than three times a day. This account is also active in voicing its aspirations in various recent issues such as black lives matter, feminism, COVID, and all issues concerning sports.

There are 117 personal statuses written in the account (@maddieheaps) from June to August 2020. As previously explained, this account is more active in expressing its condition and what is happening on Twitter compared to some previous accounts. In one month, this account can write up to 30 Tweets or even more. The owner of this account also often posts several photos and videos related to what is trending or is being

experienced at the time. Not infrequently, the written status is also related to each other with a tweet before or after. An example is a tweet made on June 29, 2020. The first status made was "Do the best you can today. Be the best you can today. And give yourself some grace through your struggles. " Then a few hours later, another status followed but still on the related theme, namely "Your mental health is worth taking care of." If we pay attention, the two statuses have the same correlation and theme, namely mental health matter and how to love yourself in any condition and whatever.

Of the 117 tweet posts, 81 statuses were categorized as status containing positive emotions and 36 statuses were categorized as negative emotions. An example of positive emotion is "Some 24-year olds in relationships: getting married, having babies Me and my boyfriend: still high-fiving after we fart at the same time wE aRe ALL oN DIFfeREnT pATHs." (17 August 2020). Several words fall into the category of negative emotions, namely the word "old" and the word "different" and the rest are words that fall into the category of positive emotions such as the words "relationship", "married", "having". After classifying the type of content and style of words, the status sentence needs to be analyzed as a whole. Therefore, this status's meaning is that the account owner feels happy and comfortable with his marriage, running for 24 years, and has been blessed with a child. It continues to run smoothly even though the two have their respective differences. Therefore, this status is included in the category of positive emotions even though it contains words that contain negativity.

The percentage of positive emotions has always been higher than negative emotions. However, based on the traditional LIWC analysis above, the emotional tone obtained from June to August 2020 tends to fluctuate. The highest emotional tone is in June, which is 78.2 data, and the average of positive emotions is about 4.57 from 4.8 data while the negative emotions are 2.10 from 2.0 data. In contrast, the lowest Emotional tone was in July 2020 with an average number of positive emotions, namely 4.57 from 3.5 data and negative emotions of 2.10 from 2.3. This case means that the account holder expresses his emotional state more often in June than in August and July. However, the overall results obtained from the traditional LIWC analysis and manual analysis still show that this account's personal status contains more positive emotions than negative emotions.

3.4 @chelle_latrice

The fourth account in this research is Chelle (@chelle_latrice) from Chicago, USA. This account is also an active account on Twitter, which has joined since March 2013 and has twenty-six thousand followers. In a day, this account can make Tweet posts up to five times a day, making emotional conditions easier to analyze periodically from day to day. Based on

the provisions of the date set in this study, tracing in this account can only be done until 29 July 2020.

There are 83 statuses made from 29 July to 29 August 2020. Many slang words, acronyms, and abbreviations are used in the status. Compared to some previous accounts, this account rarely uses hashtags and makes tweet posts about recent issues. The owner of this account is also quite expressive. The results obtained 43 status containing positive emotions and 40 status containing negative emotions. To clarify the classification of the categories, one example of status that contains positive emotions is as follows: "My biggest flex is I can get anything I want BY MYSELF." (11 August 2020). In the status made on August 11, 2020, there are no words that contain negative emotions. When examined as a whole, the meaning of this status is that the account owner feels proud of himself because he can get whatever he wants with his flexibility. Therefore, this status very clearly shows positive emotions.

An example of negative emotion is "Hate when kids wake up crying, like damn you won't even give today a chance." (3 August 2020). The word "hate" and the word "damn" in the sentence refer to negative emotions. Furthermore, if examined as a whole, the purpose of this status is that the account owner is disturbed by the sound of a small child crying when he wakes up which does not seem to allow him to rest in peace for even one day. Therefore, the Tweet post falls into the negative emotion category.

Based on the traditional LIWC analysis, the percentage of negative emotions is higher than positive emotions. In contrast to research in several previous accounts, the percentage of positive emotions is always higher than negative emotions. In this account, for the first time, there is a discrepancy between manual analysis and the results of the traditional LIWC analysis. In August, the average result of positive emotions is 2.10 out of 3.4, while the average of negative emotions is 4.57 out of 6.8. In July, the average result of positive emotions was even 0.0 out of 0.0 data and the average result of negative emotions was 4.57 out of 6.8 data. Thus, from the traditional LIWC analysis results, it can be concluded that the percentage of positive emotions is very low compared to negative emotions.

3.5 @ thillll

The fifth data in this study is Kobe Bean (@thillll) from Greenville, US. This account has been joining Twitter since March 2014 and already has 1,083 followers. There are 31 personal statuses written by Kobe Bean from June 1 to August 29, 2020. Of the 31 personal statuses, 18 statuses contain positive emotions and 13 data that contain negative emotions. The statuses made in this post tend to be short sentences and not too detailed so that they are quite difficult to interpret. During the status classification process, several abbreviations were also found which were often used in

writing status, such as "rn" written in the status "As discouraged as I am rn, I can't give up just yet!" on June 21, 2020. The word "rn" in that status stands for the phrase "right now". The owner of this account is also less expressive in expressing his emotional state in status, for a while, he was only active in retweeting a few Tweet posts from several accounts he followed.

An example of positive emotion is "God be right on time." (12 July 2020). The Tweet post, which was made on July 12, 2020, is included in the status category that contains positive emotions. Based on the content and style words above, there are no words that indicate negative emotions. The word "right" clearly shows positive emotions, then supported by other words such as "god" and "time". If interpreted as a whole, then the meaning of this status is that God's plan will come at the right time. Thus the status can be classified in the category of positive emotions.

An example of negative emotion is "I lost a family member last night, and am in the process of gaining a new family member today. It's bittersweet, but it's another reminder to not let life pass you by. " (9 June 2020). Here, some words contain positive emotions and some words that contain negative emotions. The words "lost," and "bittersweet," in the sentence indicate negative emotions. While the words "family", "gaining", and "reminder" are words that indicate positive emotions. When viewed from the number of words between negative emotions and positive emotions, the words that contain positive emotions are more than words that contain negative emotions. However, the number of words cannot be used to categorize the status into negative emotions or positive emotions. Therefore, these sentences need to be analyzed as a whole to determine the category of emotions contained therein. So what is meant by this status is a feeling of sadness because a family member has passed away and the account owner tries to strengthen himself and look for new family members. He also provides a piece of motivation so as to not miss or waste the life he is living. By writing this status, the owner of this account expects sympathy and empathy from their followers and those around them for the grief that is being experienced. If we look at the word content again, the words "lost" and the word "bittersweet" is strong enough words to identify feelings of sadness experienced by the current account owner who is in a state of grief. Therefore, this status belongs to the category of negative emotions because of the grief experienced by the account owner so that he expects empathy and sympathy by writing the status.

The percentage of positive emotions in this account is higher than negative emotions. The average of positive emotions is about 4,57 from 3,0 data and the average of negative emotions is 2,10 from 2,2 data. Therefore, the results obtained from the manual analysis are related to calculations from traditional LIWC analysis in which the overall data taken from 1 June to

29 August 2020 contains more positive emotions than negative emotions.

3.6 @Rasiq07

Rasiq (@ Rasiq07) is the sixth account chosen as one of the objects in this study. This account has joined Twitter since August 2018 and has 4,318 followers. This account is also active in retweeting or replaying several other accounts and often expresses its opinion about recent trending issues.

The results obtained are 58 personal statuses written from June 1 to August 28, 2020. Of these statuses, 44 statuses indicate positive emotions and 14 statuses indicate negative emotions, where the number of positive emotions is more than negative emotions. The owner of this account is a religious person, most of the statuses made are religious-related and several times quoted verses from the Koran and hadiths. This account also frequently retweets and replays everything related to religion.

The positive emotions appear in the following example: "The greatest & most virtuous day in the entire lunar calendar is the day of An Nahar (The day of Eid) Eid Mubarak. #EidMubarak #EidAlAdha "(31 July 2020). Here several words indicate positive emotions and there are no words that indicate negative emotions. The words "greatest", "most", "virtuous" are some of the words which indicate positive emotions. Overall, this status's meaning is that the account owner feels delighted and excited in welcoming the Muslim holiday, Eid Adha, which falls on July 31, 2020. Moreover, this account owner also uses the hashtags #EidMubarak and #EidAlAdha which to celebrate the holiday on Twitter and include more viewers. Thus, this status is included in the status of positive emotions.

An example of negative emotions is the status: "Missing wrong messes up my whole mood" (13 July 2020). The word "missing" and the word "messes" are words that very clearly indicate an overflow of negative emotions. In this status, there are no words that indicate positive emotions. If interpreted as a whole, the meaning of this status is that the account owner feels in a very messy mood because he has left one of his prayer routines, so this Tweet post is included in the tweet category that expresses the negative emotions that are being experienced at that time.

The traditional LIWC analysis showed that the percentage of positive emotions is higher than negative emotions. The average of positive emotions is about 4,57 from 3,2 data and the average of negative emotions is 2,10 from 2,5 data. Therefore, the results obtained from manual analysis are related to calculations from traditional LIWC analysis in which the overall data taken from 1 June to 28 August 2020 contains more positive emotions than negative emotions.

3.7 @ *rishipuff*

The seventh data in this study is an account named Rishi (@rishipuff) from Northwestern, US. The owner of the account is an American Indian who works as a comedian and YouTuber based in America. This account already has 9579 followers and has joined Twitter since August 2014.

The results obtained were 40 personal statuses from 1 June to 31 August 2020. Of the 40 statuses, 17 status contained positive emotions and 23 status contained negative emotions categorized based on manual analysis. This account is the second account in which the number of negative emotions is higher than the number of positive emotions according to the classification and manual analysis. Several times, the status made in this account is a status with a comedy theme. Still, the function of this status is not only for entertainment but as a form of opinion and protest on several related issues.

An example of positive emotion is as follows "I'm so glad Dev Patel minds his business and doesn't post to the internet cause if he has any fucked up opinions, I don't want anybody to tell me about them." (9 August 2020). In this status, some words contain positive emotions and some words that contain negative emotions. The word "glad" in this status represents a word that contains positive emotions. Meanwhile, the word "fucked" is a word that represents negative emotions. However, these two words are not sufficient to represent a status sentence in a category of positive or negative emotions. Therefore, we need to interpret this status as a whole. The word "fucked up" refers to the account owner's sense of indifference to opinions and affairs about Dev Patel. Meanwhile, the word contradicts the word "glad" indicating positive emotions because they feel happy not seeing Dev Patel's activities on social media. It indicates positive emotions because the essence of this status is the happiness experienced by the account owner. After all, Dev Patel doesn't post anything on social media and is busy with his personal affairs. The account owner is also not interested in knowing Deva Patel's opinion and doesn't want anyone to tell him about it.

Negative emotion appears in the following example "seeing two white people in target kiss with their masks on was a good reminder that love is fundamentally stupid as fuck" (28 June 2020). There are two contradictory words. There are the word "Good" and "love" which indicate positive emotions, while the words "stupid" and "fuck" indicate negative emotions. Therefore, it is necessary to do an overall analysis of the sentence. The words "good" and "love" in the sentence describe the phenomenon or incident experienced by the account user seeing two people kissing using masks. Meanwhile, the words "stupid" and "fuck" are expressions of resentment in status because they think it is stupid based on love. Hence, the overall status that is written is an expression of the annoyance experienced by the account user because he saw two people kissing using their masks.

The percentage of positive emotions is higher than negative emotions. The average of positive emotions is about 4,57 from 2,8 data and the average of negative emotions is 2,10 from 2,7 data. The results obtained based on the analysis of the traditional LIWC show different results from the manual analysis. Based on the manual analysis, the status indicated negative emotions are higher rather than positive emotions. Therefore, the results obtained from the manual analysis are unrelated to calculations from traditional LIWC analysis in which the overall data taken from 1 June to 31 August 2020 contains more positive emotions than negative emotions.

Overall, the tendency of showing positive emotions than negative emotions occurs in six out of seven data observed in this study. It is as shown by the result of the computation using Linguistic Inquiry and Word Count. This result confirms that the status on weekends mostly appears in positive emotions [21] and the study that shows positive emotions in online chatting communities [22]. This phenomenon occurs on Twitter and Facebook, where more positive emotions appear in the posts [23]. Positive emotions outweigh negative emotions in life in general. Therefore, positive biases in status updates are only established if they are more positive than emotional life or even social settings.

However, this study only involved a small sample and relied on comparing general impressions of the seven accounts chosen. The finding also does not distinguish status updates based on gender or age. Besides, the result is specific to the status observed during a certain period, namely the stay at home phase, which cannot be generalized to the emotions that appear on different occasions.

4. CONCLUSION

The popularity of social media today greatly affects everything that many people do. In terms of communicating, social media also show a person's character and emotional appeal. The role of emotions in social media has been the subject of research and media attention for the last few years. The emotional profile of status updates on Twitter as the focus of this study performs the users' self-presentation. The status updates observed in this research appeared during the COVID-19 pandemic stay at home phase. Emotion is the most central topic that varies from negative to positive. However, in the tweets during the pandemic, the statuses mostly cover positive emotions compared to negative ones. It is as shown by the result of the computation using Linguistic Inquiry and Word Count. It reflects some extent that the positive emotions outweigh negative emotions in life in general. Most of the Twitter users in this study sometimes tend to be more enthusiastic in writing status with positive

emotions. In addition, when they are in bad condition they tend to use wise quotes or positive motivational sentences to divert the mood they are experiencing. Therefore, positive biases in status updates are only established if they are more positive than emotional life or even social settings.

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