

COVID-19

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[AP1-E2-3-02] Catching Public Opinion of COVID-19 Pandemic in Korea and Japan: Social Network Mining on Twitter

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Keywords: COVID-19, Social Network Mining, Public Opinion

Physical and psychological stress of general public has been accumulated since new COVID-19 confirmed cases continuously occur. This study aims to analyze the perceptions and emotions of the public on COVID-19 in Korea and Japan. Therefore, this study is to analyze the frequency of using words in Korean and Japanese tweets in COVID-19, and the change in their interest. A cross-sectional study was conducted in this paper to analyze Twitter posts from February 1 to April 30 in Korean and Japanese citizens. Python 3.7 library was used to perform this collection. After collecting data, we used Kr-Wordrank, Heat diagram, Word cloud, Rank flowchart analysis in Korea and frequency analysis in Japan. The number of tweets collected was 1,470,673 in Korea and 4,195,457 in Japan. The word trend for every 5 days from February 1st to April 30th in Korea and Japan. The result of Word Cloud, In Korea, 'COVID-19', 'Shinchonji', 'Mask', 'Daegu', and 'Travel' showed as frequent words. In Japan, 'COVID-19', 'Mask', 'Test', 'Impact', and 'China' were identified as high-frequency words. We divided into four categories, Social Distancing, Prevention, Issue, and Emotion on Rank flowchart. In Emotion categories, 'Overcome' and 'Support' increasing from February in Korea. In Japan, 'Wor-ry' and 'Anxiety' decreased from April 1st. We observed that people's interests in economy were high in both countries which showed their worries on economic downturn by COVID-19.

Therefore, focusing policies toward economic stability is considerable. Although interests in prevention increased since April in both countries, it showed that general public began to relieve their worries on COVID-19. Therefore, it is necessary to keep emphasizing their compliances with the COVID-19 precautions.

Catching Public Opinion of COVID-19 Pandemic in Korea and Japan: Social Network Mining on Twitter

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Abstract

Physical and psychological stress of general public has been accumulated since new COVID-19 confirmed cases continuously occur. This study aims to analyze the perceptions and emotions of the public on COVID-19 in Korea and Japan. Therefore, this study is to analyze the frequency of using words in Korean and Japanese tweets in COVID-19, and the change in their interest. A cross-sectional study was conducted in this paper to analyzed Twitter posts from February 1 to April 30 in Korean and Japanese citizens. Python 3.7 library was used to perform this collection. After collecting data, we used Kr-Wordrank, Heat diagram, Word cloud, Rank flowchart analysis in Korea and frequency analysis in Japan. The number of tweets collected was 1,470,673 in Korea and 4,195,457 in Japan. The word trend for every 5 days from February 1st to April 30th in Korea and Japan. The result of Word Cloud, In Korea, 'COVID-19', 'Shincheonji', 'Mask', 'Daegu', and 'Travel' showed as frequent words. In Japan, 'COVID-19', 'Mask', 'Test', 'Impact', and 'China' were identified as high-frequency words. We divided into four categories, Social Distancing, Prevention, Issue, and Emotion on Rank flowchart. In Emotion categories, 'Overcome' and 'Support' increasing from February in Korea. In Japan. 'Worry' and 'Anxiety' decreased from April 1st. We observed that people's interests in economy were high in both countries which showed their worries on economic downturn by COVID-19.

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Keywords:

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Introduction

As for April 30, 2020, the incidence rate of COVID-19 in Korea and showed downwards, thanks to several responses of both governments [1]. However, physical and psychological stress of general public has been accumulated since new confirmed cases continuously occur. It is reported that psychological counseling has been increased after emerging COVID-19, due to depression and excessive stress [2]. Previous studies also pointed out the possibility of distress and psychological fatigue of general public the possibility that general population would get distress and psychological fatigue would be high when the government intensified its regulation [3].

This study aims to analyze the perceptions and emotions of the public on COVID-19 in Korea and Japan. Therefore, this study is to analyze the frequency of using words in Korean and Japanese tweets in COVID-19, and the change in their interest.

Materials and Methods

A cross-sectional study was conducted in this paper to analyzed Twitter posts (Tweets) from February 1 to April 30, 2020 to catching the public opinion of COVID-19 pandemic in Korean and Japanese citizens.

We collected data from Twitter (<https://twitter.com/>), which is one of major social media in Korea and Japan. Python 3.7 library (Beautifulsoup and GetOldTweet3) was used to perform this collection. The number of tweets collected was 1,470,673 in Korea and 4,195,457 in Japan (Figure 1).

After collecting data, we used Kr-Wordrank analysis in Korea and frequency analysis in Japan.

Results

The total number of tweets of Twitter's posts collected in this study was 2,965,770 (tweets), 1,470,313 (tweets) in Korea, and 4,195,457 (tweets) in Japan.

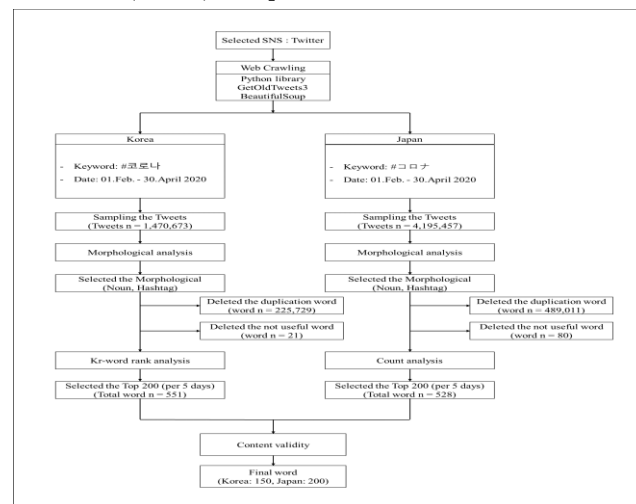


Figure 1- Web Crawling flow chart

Figure 2 shows a The COVID-19 word trend on heat diagram from Feb.1 to April.30 in Korea

The word trend for every 5 days from February 1st to April 30th in Korea and Japan. In Korea, 'COVID-19 (코로나)' and 'News (뉴스)', were consistently high since February, while 'MERS (메르스)' appeared on Twitter until February 10, and then disappeared. 'Shincheonji (신천지)' first appeared on February 15th, and continued to rank high until April 30th. 'Travel (여행)'

was highly ranked on February 5th, but disappeared after February 20th. ‘Online (온라인)’ first appeared on April 5th, and the rank increased gradually until April 30th.

Figure 1 shows a Web Crawling flow chart



Figure 2- The COVID-19-word trend on heat diagram from Feb.1 to April.30 in Korea

In Japan, ‘COVID-19 (Corona)’, ‘Impact (影響)’, ‘Mask (マスク)’, ‘China (中国)’, ‘Response (対応)’, ‘Economy (経済)’, and ‘Government (政府)’ continuously ranked high from February 5 to April 30. The Olympics (オリンピック) was not in the rankings from February 29 to March 10, but gradually increased from March 15 to April, and became a high ranked word from April. The rank of ‘Washing hands (手洗い)’ decreased from March, but increased again from April 20.

Figure 3 shows a the COVID-19 word trend on heat diagram from Feb.1 to April.30 in Japan



Figure 3- The COVID-19 word trend on heat diagram from Feb.1 to April.30 in Korea

Figure 4 showed the results of Word Cloud analysis of tweets from February 1 to April 30 of Korea and Japan. In Korea, ‘COVID-19’, ‘Shincheonji’, ‘Mask’, ‘Daegu’, and ‘Travel’ showed as frequent words. In Japan, ‘COVID-19’, ‘Mask’, ‘Test’, ‘Impact’, and ‘China’ were identified as high-frequency words (Figure 4).

Figure 4 shows The word cloud based on twitter tweets in Korea(left) and Japan(right).

We analyzed the rank flowchart from February 1st on Twitter posts in Korea and Japan, and divided into four categories - Social Distancing, Prevention, Issue, and Emotion.

Figure 5 shows a Rank flowchart by four categories (Social Distancing, Prevention, Issue, Emotion) in Korea and Japan.

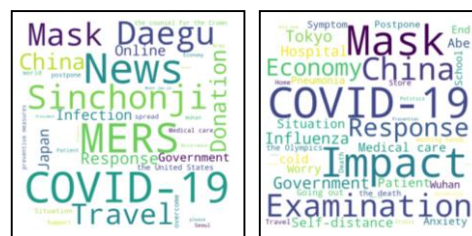


Figure 4 - The word cloud based on twitter tweets in Korea (left) and Japan (right)

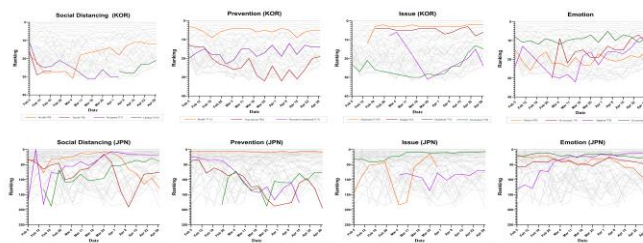


Figure 5- Rank flowchart by four categories (Social Distancing, Prevention, Issue, Emotion) in Korea and Japan

Conclusion

This study aimed to analyze the perceptions and emotions of Korean and Japanese about COVID-19 and to suggest it as the better understanding of general public for future COVID-19 responses. We observed that people's interests in economy were high in both countries which showed their worries on economic downturn by COVID-19. Therefore, focusing policies toward economic stability is considerable. Although interests in prevention increased since April in both countries, it showed that general public began to relieve their worries on COVID-19. Therefore, it is necessary to keep emphasizing their compliances with the COVID-19 precautions.

References

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