

Sentiment analysis on lockdown Covid-19

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ABSTRACT

The invasion of COVID-19 in December 2019, at CHINA created devastating effects on the well-being of individuals. Coronavirus aka COVID-19 is creating fright in the public. This Pandemic is spread from one individual to another with close contact with the infected person. To stop this outbreak, nations all over the world enacted lockdown conditions. Imposing Lockdown, have gradually reduced the number of transfers of the virus. Though lockdowns have a positive impact to stop further spread of the virus, it created psychological impressions on many individuals. Different emotions were rendered by the people in the lockdown phase 1 and phase 2. Sentiment analysis is the classification of emotions as positive, negative, and Neutral. In this paper, we would discuss the impact of lockdown on an individual by performing sentiment analysis

Keywords: *Coronavirus, COVID-19, Sentiment Analysis*

Coronavirus is a recently identified contagious disease also known as COVID-19, which originated from a place in South East Asia. i.e, Wuhan, CHINA[1]. The World Health Organization identified COVID-19 as Pandemic.[2] Pandemic is a situation where the disease spreads over a wide geographic area and affecting an exceptionally high proportion of the population[3]. In very few days this epidemic spread to all major parts of the world. As per the information provided by the World Health Organization (WHO), it is found that as on 22nd April 2020, 213 countries are effected with COVID-19 resulting in 2,471,136 positive cases and 169 0062 confirmed casualty[4]. Coronavirus is a disease that affects the respiratory system of an individual. Its official name is SARS-CoV-2[5] which has an evolution period of 5 days. The symptoms of this pandemic are cold, dry cough, tiredness, shortness of breath, aches, and Pains. The symptoms of the infected are unknown until 11-14 days of the infection is present in an individual's body[6]

Till the vaccine for this disease is manufactured it is the responsibility of the individual to take safety measures to stop transmission of the disease. The World Health Organization [7] specifies few preventive measures,

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- 1) Wash your hands regularly with soap and water, or clean them with alcohol-based hand rub.
- 2) Cover your mouth and nose when coughing or sneezing.
- 3) Refrain from smoking and other activities that weaken the lungs.
- 4) Maintain Social distancing by avoiding group gatherings and travel.

COVID-19 plunged all over the world, started to create panic in all the countries. The regime of all the countries imposed strict restrictions on the citizens of their nations. The people in the world are in lockdown [8] completely. Italy imposed lockdown from March 10th, 2020 for all of its 60 million citizens, followed by Denmark from March 11th, 2020, Norway from March 12th, 2020, Ireland from March 27th, 2020. Kuwait enacted lockdown from March 13th, 2020, Poland from 13th March, Spain From March 14th, 2020. The United States of America also imposed a lockdown on its nations.[9]On March 24th, 2020, the Government of India imposed Lockdown on the nation for 21 days and late extending it to May 3rd, 2020[10].The main goal of all nations is to curb COVID-19. The number of mortalities has been increasing day by day all the world. The first country to suffer is China, followed by Italy, and now, the USA has more people who demised because of this Pandemic.

The lockdown is well -tolerated in the initial days later the impact of lockdowns created social and psychological imbalances within them. The reasons for that include, missing the daily routines, the ones who are workout freaks miss going to the gym's, kids are not allowed to go out for playing, etc. This lockdown mainly impacts people of older ages who spend the time meetings the friends, going for a walk etc,. Isolation from the other part of the world is creating distress among people. Even the health care workers would undergo mental trauma, as they stay away from home for days together to adhere to the rules of their profession [11].

Related Work

There is ongoing research on this pandemic and yet many more observations are needed to be documented. Reports have shown that the number of women harassment cases has increased gradually during the lockdown period[12] leading them to distress. There are some cases where people fear of COVID-19 and commit suicide in Bangladesh [13]A report of 2 cases of self-harm with the distress and loneliness created because of COVID-19 lockdown [14]. These are the different emotions rendered by individuals during the lockdown, undergoing different reasons

Sentiment Analysis of COVID-19 Lockdown

Sentiment Analysis is the classification of human emotions as positive, negative, or neutral. It helps us to know the opinion of an individual on an entity in the earlier days the analysis was done manually. Later with the advent of internet and machine learning, the task has become easier by generating machine learning algorithms and accuracy in prediction. Here, in this paper, we would like to discuss the opinion of people of different age groups and professions on this lockdown imposed using Python Programming

Steps for Analysis

To have a hassle-free analysis we need to follow a certain procedure. Figure1 describes the steps followed to do the task.

Data Collection

Data Cleaning

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Create the algorithm
Perform Analysis
Generate

Results



Figure 1: Steps involved performing the Analysis

The first step is Data collection which is the process of gathering relevant data from the resources to perform analysis. After gathering the data certain amount of cleaning is performed on the data. Removing unwanted information from the data set and keeping only the required data is called data cleaning. The third step is to generate an algorithm for the analysis. The next step includes performing analysis on the cleaned data by incorporating the data set on to the algorithm. Finally, generate the results using plots or graphs.

Preparation of Data Set

To perform any kind of analysis the major requirement is a data set. Gathering the data is a challenging task when it comes to real-time situations like COVID-19. To gather the opinion of the people, we have created a set of a questionnaire about the Pandemic and Lockdown. The survey reached people of all age groups and professions across the globe for a day. The questionnaire included the categories of age group, gender, profession, and what their emotion on the lock is down imposed. As we know that sentiment analysis comprises positive, negative, and neutral traits. The questionnaire is prepared with different emotions of an individual. We have categorized them as positive, negative, and neutral.

The data set includes the collection of data from both male and female of the different age group of categorizing them into 4 groups, which are,

Below 20

21-30

31-45

45 and above.

The survey was conducted on varied kinds of professionals like a student, homemakers, businessmen, retired employees, working professionals, bank employees, IT sectors, etc. It also included a point that whether people are aware of the preventive measures of COVID-19.

The survey also includes a very important part of the analysis. The emotion or feeling of the individual during the Lockdown, which includes various opinions like exploring new things, boredom, sad, happy, etc., total consisting of 10 moods of emotions. The survey was confined to one day, and the responses of 512 individuals are recorded. The dataset of 404 individuals is recorded as .csv file. We have taken care that the survey reaches different sects of people via social media, WhatsApp, e-mails, etc.,

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Algorithm and Analysis

To perform analysis on the data we need to generate the algorithm and then execute to get the results. The steps that we have followed to perform the analysis are discussed below.

Step 1: Created the relevant dataset

Step 2: As we are using different parameters like age, profession, gender the individual parameters are extracted.

Step 3: Using Pandas, the algorithm is generated and analysis is performed.

Step 4: After performing the analysis, matplotlib is used for plotting the graphs.

RESULTS

The over all analysis shows positive results for the data set. The data set comprises of 404 responses and the analysis was done on that data. The analysis is categorised into 3 groups. The first one based on gender, second based on profession and third classification is based on age.

Gender based analysis

The first set of analysis is on gender based analysis. Of the total 404 responses, it is found that 69% (279) people are on positive emotion, 14% are on negative emotion and 17% are neutral. The following figure 2, shows the males and female who are positive, negative and neutral to the lockdown. The graph is plotted using matplotlib.

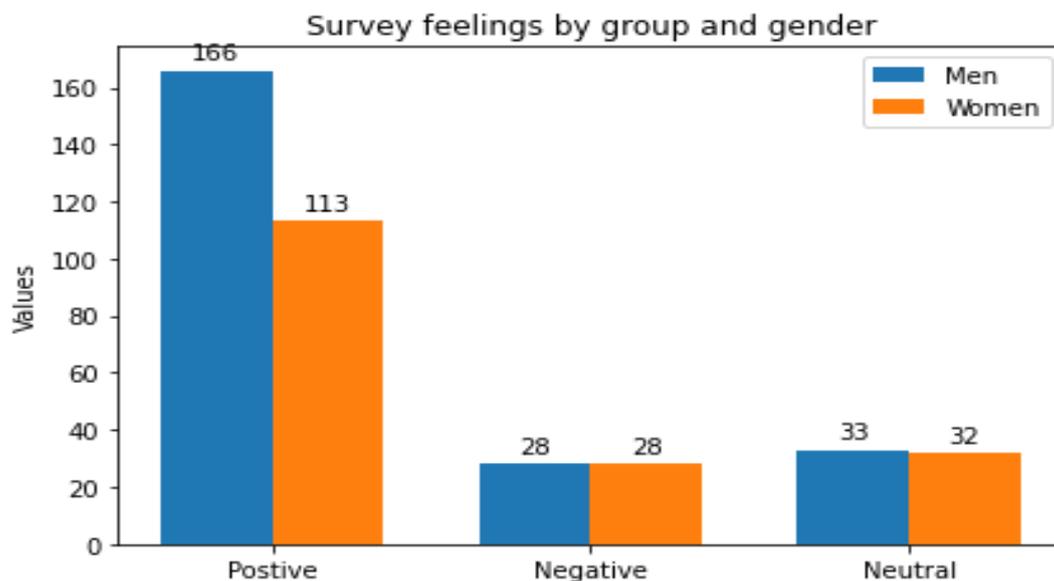


Figure 2: Gender based Analysis

Profession Based Analysis

The next set of analysis is done with respect to the profession of the individuals. We have identified student, working homemaker and retirees as 4 categories of profession. The Figure 3 shows the analysis chart where the 67.5% people are on positive note, 13.6% are showing negative emotion and 17% are showing neutral emotion. Of the 279 people who are showing positive emotion 31% are students, 55% are working professionals, 8% are Homemakers and 2.8% are retired individuals. The graph is plotted using matplotlib.

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Figure 3: Profession based Analysis

Age Based Analysis

The final set of analysis is done with age of the individuals. Figure 4 shows the analysis chart where the 69.1% people are on positive note, 13.9% are showing negative emotion and 16.1% are showing neutral emotion. The age groups are categorized as below 20,21-30,31-45 and above 45 years of age.

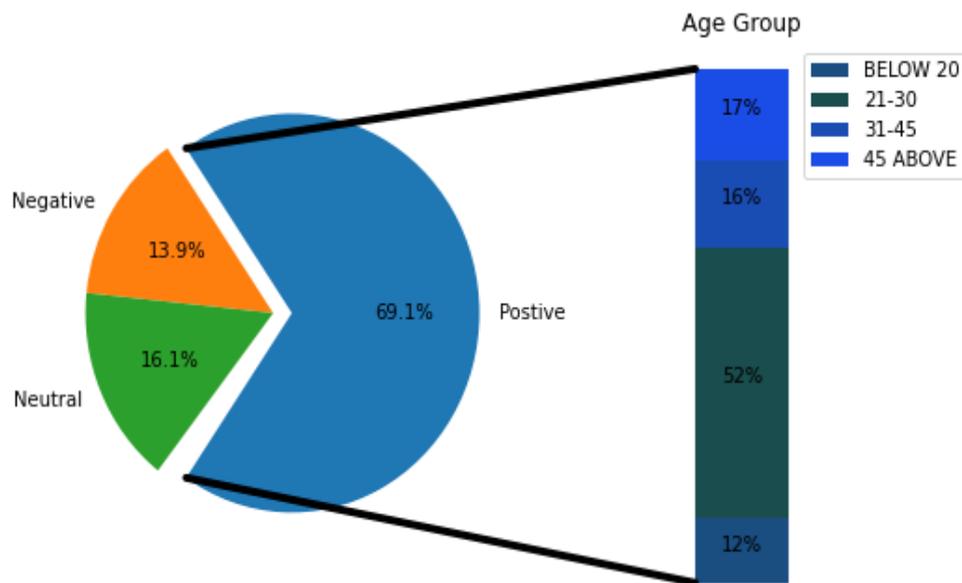


Figure 4: Age based Analysis

From the above graphs it is clearly shown that more than 69% people are on positive emotion to curb COVID-19, who are utilizing the time spending quality time family, enhancing their skills, and being responsible citizens, The negative emotion are generated by people who are away from home, missing the daily routines and loss of business. There are neutral people who didn't find much difference before and during lockdown, who are mainly elderly aged people and home makers.

CONCLUSION

In this paper, we would like to conclude that the people are on positive traits for imposing the lockdown. Most of them are happy spending time with family, while others have invested the time in learning new things. Many found the space to enrich and showcase their hobbies while few students and individuals felt boredom. The working women are feeling distressed to manage both works from home and family in lockdown. It is found that many individuals are with the government and are acting responsibly staying home.

After rigorous analysis, it is found that though there is economic downfall maximum people are on the positive note of the lockdown and are willing to stay home and stay safe by Managing household chores and work from home. The individuals are with the governments of the nations with a positive say: if the economy is lost it can be brought back, but not the citizens of the country.

Future Work

Here, in this paper, we have discussed the sentiment analysis of individuals during the lockdown of COVID-19. We have taken a survey for one day and was able to gather 404 responses. In the future, we would like to extend it to a wide group of people either through social media or other platforms.

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Conflict of Interest

The author declared no conflict of interest.

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