

# Twitter user's Behavior and Events Affecting Their Mood

Srishty Jindal, Amit Kumar Tyagi, Kamlesh Sharma

**Abstract:** Sentiment Analysis is an art to analyze and understand the human behavior. The analysis could be done for any purpose such as e-commerce, business analysis/revenues, detecting latest trends and analyzing reviews. The major work done was related to finding sentiment polarity of the text such as negative, positive or neutral. There are always some emotions hidden behind the text apart from positive/negative. So, nowadays, researchers are focusing on detecting mental behavior of people through social media. This mental behavior could be analyzed through the images, videos, text or posts shared by social media user. Behavior Analysis plays an important role through which society can be benefitted. Behavioral analysis helps in finding the behavior/reaction of people about any event happening throughout the world with the help of social media. In this research, such events were collected through an online survey of people from different professions, their data was analyzed to understand the areas where our society is lacking. Along with the events, the behavior of the person is also analyzed by understanding the basic routine of the user (routine of using social media). The Major events were found by creating word cloud, such as disturbing the social media users were violence against women, politics, terrorist attack, elections and abusive text written by someone.

**Keywords:** Online social Media, Sentiment Analysis, Twitter API, Tweets.

## I. INTRODUCTION

This paper is an analysis of usage of Twitter. People use Twitter and other such platforms to share their feelings and thoughts. It is important to analyze that data as data is produced in bulk over the web. Due to availability of huge amount of data, many researchers are attracted towards it. Twitter data can easily be retrieved from Twitter through Twitter API. But, before proceeding towards the analysis of Twitter data, it is important to find why to use and analyze twitter data. It is important to first find out why, when, and for what purpose the people are using twitter. For the same purpose, a survey was done among various people from different background, i.e. different age group, different profile, literacy and many more parameters. Data was collected through Google form and then analyzed to find the purpose of using Twitter and finally the effect on their mood after using data.

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The purpose of this survey is to find the influence of various events on the mood of its users. The analysis is done to find how many people are affected by unusual posts posted by other users and discussions about various events going on.

## II. LITERATURE SURVEY

Alvaro Ortigosa[1] analysed the user personality by finding common patterns of their behaviour on virtual social networks. An application TP2010 was designed to find the behavioural patterns of the users. It is assumed that common patterns shows similar type of personality. More than 20,000 Facebook users participated in the survey. Based on collected data, Classifier was trained based on various machine learning techniques to find the personality patterns to analyze behavior on social media. These classifiers predict personality based on various parameters such as number of friends, no. of posts posted on wall, posts per month, and posts per year.

Data can be collected through many ways. It could be web crawling, surveys or applications. Web crawling is simply browsing through the web and finding the records. Twitter API, Facebook API and Graph APIs are the best example to retrieve data from the web[2]. Another way to collect data is through a survey of Questionnaire. People fill the questionnaire and the data is collected through questionnaire only. This data is further analysed for research purpose. Alvaro Ortigosa[1] used a ZKPQ questionnaire to predict the personality of the users. This survey was done with the help of an Application TP2010. This questionnaire consists of 60 questions including five dimensionality personality traits. 50 questions were collected from ZKPQ-50-cc, and further 10 questions were added to enhance the personality test. Survey analysis is done to analyse the real feelings of the person. There are many ways in which surveys can be analysed. In another research, the data was collected through an application SentBuk especially designed for Facebook users[3]. Through this application, messages written by user were retrieved and their sentiment polarity was calculated. The research also support emotional change detection, classification of users based on their messages. This study also helps in e-learning systems to support personalised learning based on their emotional state. A survey was done to find the unethical acts happened over social media and the results shows the various types of unethical acts and their effect on people, also some remedial actions were discussed[4].

Social networking sites are very helpful in collecting data and hence promotion of research. The collected through social media is analysed for various purposes. One such area is sentiment analysis. Sentiment analysis can be done with machine learning approach or lexicon based approach with the help of classifier.

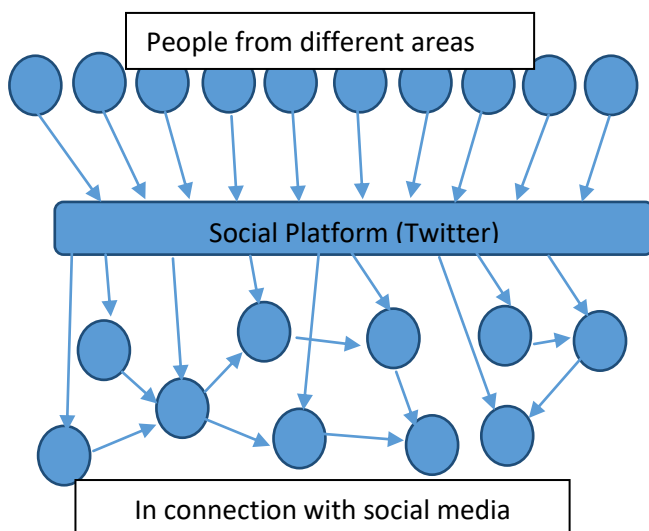
## Twitter user's Behavior and Events Affecting Their Mood

In the research, [5] sentiments of tweets were classified in positive or negative using ensemble classifier. Social media users access the social networking sites through their mobiles also so lot of information is gathered [6]. The main area where the collected data is being used is finding sentiment Polarity or Opinion Mining. Sentiment Polarity can be calculated through machine learning approach or lexicon based approach [7]. To predict behaviour on health related issues, a group of 1528 participants was created on social network. Participants were termed as health buddies. Their behaviour was tested according to the decision taken by them depending on their health buddies [8]. In another field related to health, use of social media also helps in gaining knowledge about their psychological wellbeing and ethics [9].

As the information shared on social network is almost visible to all because people rarely knew/ read the terms and conditions before signing up to the account. Their profile information may be visible to many intruders also and can leads to many problems. There are various threats attached to social media such as cyber bullying, spammers, internet fraud, phishing attack[10] and many more[11]. A lot of work has been done in this direction also to detect such people who use bad language [12] over the web and their effects on people's behaviour online or offline[13]. Psychologists are also working on improving /understanding the behaviour of social media users to use the platform ethically[14]. As the people from various places are connected through social media, there must be some guidelines to be followed while interaction.

### III. DATA COLLECTION

Social media is very common among people across the country. People from different communities all over the world join a common platform form a strong network. Many social media applications are available nowadays. Out of them Twitter, Facebook and YouTube are the most commonly used social networks (Fig. 1.1).



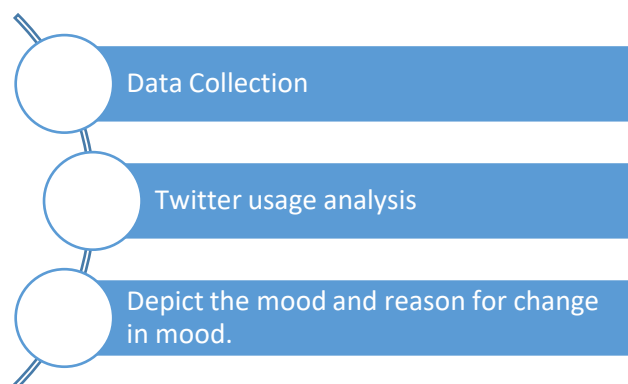
**Fig.1.1 Importance of social media**

For finding actual usage of Twitter, Data is collected through a survey. In this, people from different profession and different age group are selected. They views are analysed to find their purpose of using twitter. People have also shared the incident that highly effect their

mood/behaviour on social media. Those incidents are analysed through sentiment analysis.

### IV. METHODOLOGY

Data collection can be done in many ways such as direct from API, static data available over the web or survey. In this paper, to perform research on shared views of various Online Social Network users, the data is collected through online survey about their twitter usage such as purpose of use, activities usually performed on twitter, logging duration, etc. The survey also includes the sharing of a moment that affect the life/mood of the person. The survey helps in finding some behavioural activities and impact of various events on an individual. The collected data was analysed to retrieve important information. First of all, data is collected, then the analysis was done to find the information as depicted in Fig.1.2.



**Fig 1.2 Steps to find critical activity that affect someone's mood**

Above figure depicts the steps that were followed to identify/ extract useful information from data available on social media. The first step is to collect data from various people through an online survey where people shared their feelings. People who participated in the survey belongs to different profession and ages as shown in Fig.1.3. All the professionals can be categorized as academicians/industry experts. Different category of professionals participated in the survey and shared their views about twitter. The purpose of collecting data through different professionals was to retrieve the perception of social media from many angles. Every professional has different timings and purpose of using social media. To understand their behavioural patterns, it was important to consider people from multiple platforms. The survey was a great success as many people participated in it and share their feelings along with their pattern of using social media.

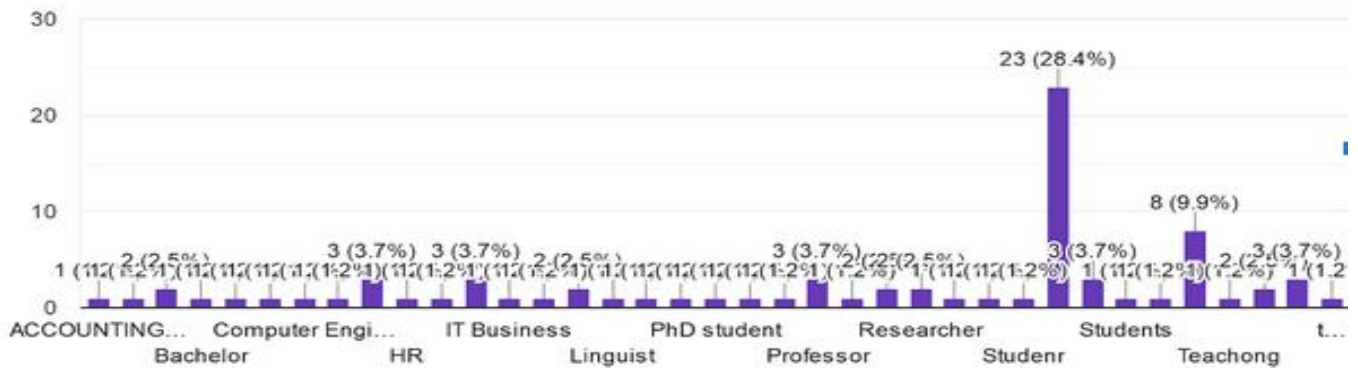


Fig. 1.3 Participation of people from various professions

The survey also includes the purpose of using social media. The analysis indicates that people are usually interested in current affairs that are discussed on social media i.e. 65% of the people are interested in current affairs, and the next highest number goes for Politics (Fig. 1.4). Social media is considered as the fastest means to travel in formation

worldwide. So, most of the people are connected through social media. That is why, it is considered as the best repository from where data can be collected for research in various fields.

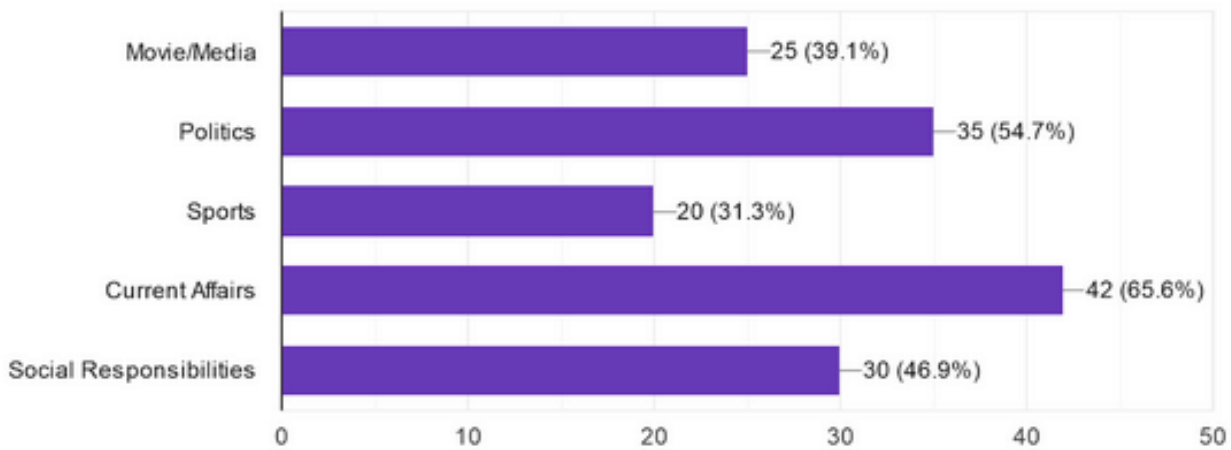


Fig. 1.4 Purpose of using Social media (Twitter)

Twitter users shared the effect on posts/tweets shared by other people on social media. Various moods observed are happy, sad, anger, calm, and disgust. Usually people feel happy from the post but there are some text/tweets that affect them and spoil the mood as shown in Fig. 1.5.

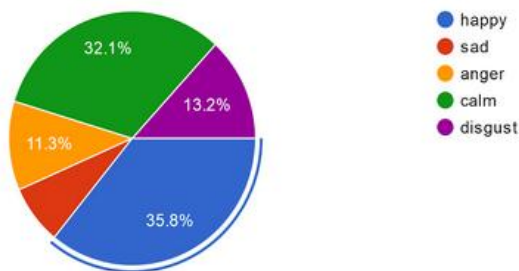
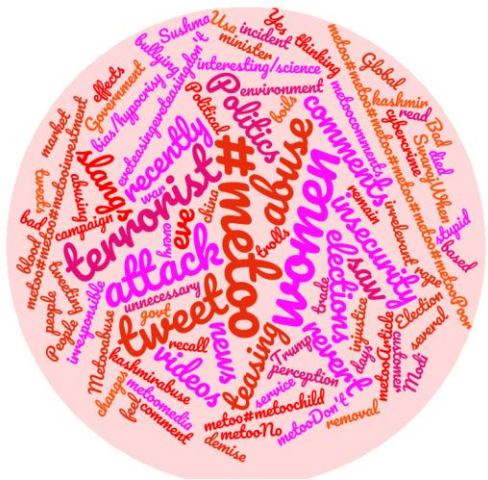


Fig. 1.5 Effect of social media on mood

## V. ANALYSIS

Experiences shared by various people helps in determining the events that affect them most. The list of events was collected. The stop words were removed, and the text relevant to find the meaningful data was inferred [12]and[15]. A word cloud is created to find the important events. In Fig.1.6, the word cloud is made up of words used by twitter users that affect their lives. Information from multiple users was collected to find the impact of any information shared on social media. This word cloud clearly shows that #Metoo movement affect their mood when it came with new stories. #Metoo movement was initiated by girls and was based on the bad behaviour of other people in their contact. Another word that was very famous and affect the human being was terrorist. It was clear from the information gathered that people are afraid of terrorist attack and need some help from government to save the nation. Other important topics that were discussed and that affect the mood of people were elections,

Politics, and abusive language written by people on social media. Apart from that insecurity, eve teasing are also the subject of concern.



**Fig. 1.6 WordCloud of events that effect life of social media user**

## VI. CONCLUSION AND FUTURE SCOPE

Twitter is most commonly used social network among celebrities, politicians and other renowned people. They share their feelings, thoughts and perception through Twitter. Survey conducted in this paper focussed on the usage of Twitter from multiple point of views. The focus is on different categories of users depending on age, profession, time of usage, purpose of using twitter, and impact of various events on other users. It is clear from the facts that whether the user belong to any age group or profession, any post done by user effect its followers. Also the analysis is done to find the relevant information regarding events that affect their lives on social media. It is important to understand and find the basic cause behind the change in behaviour of the user because of any person or any event. Such posts/tweets (that affect human behaviour) could be avoided to protect people from change in their mood/behaviour on a negative side. To avoid such tweets, first it is important to detect the tweets which shows a negative behaviour and may affect the behaviour of the others.

As a future work, the work done would be based on analysing the variations in behaviour of the user. If there is any event which is effecting the behaviour of that user or finding fluctuation in behaviour from normal behaviour, then finding that event and also finding the followers effected due to same. This analysis could be helpful in finding the events that are the major cause of disturbing the social life of any user. In future, such events could identified and the chain of forwarding the messages to other users could be stopped. So that no more users will be affected in future.

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