

SELF ANALYSIS OF WHATSAPP SENTIMENT

Dr. R. Hemalatha #1, M.B.Monicka *2,

Associate Professor and Head, PG & Research, Department of Computer Science,
TiruppurKumaran College for Women, Tirupur, TamilNadu, India
1 hemdaksin@gmail.com

* Research Scholar (M.Phil.), PG & Research, Department of Computer Science,
TiruppurKumaran College for Women, Tirupur, TamilNadu, India
Sweetybala.56@gmail.com

ABSTRACT:

Human beings act among themselves in many various ways: face-to-face, through the phone conversations, or social media tools like facebook, WhatsApp etc. Understanding our interactions and our conversations will provide several new insights regarding ourselves, the dynamics of our group and can facilitate us simple but more cognizant of the words/sentences we have a tendency to use.

Sentiment analysis is one such tool and therefore most popular branch of textual analytics that with the help of statistics and natural language processing examine and classify the unorganized textual data into various sentiments. It is also known as opinion mining as it largely focuses on the opinion and attitude of the people through analyzing their texts.

Keywords: Data Analysis, Unstructured Data, R Programming, Visualization, WhatsApp.

1. INTRODUCTION

The world is moving towards a fully digitalized economy at an incredible pace and as a result, a ginormous amount of data is being produced by the internet, social media, smartphones, tech equipment and many other sources each day which has led to the evolution of Big Data management and analytics. More than 34 billion texts are exchanged over the WhatsApp every day and just imagine that if we could analyze and get valuable insights from this data and leverage it not only to take better real-time decisions but also add value to the stakeholders at much lower cost and time and hence align our operational efficiency with organizational strategy. In this article, we'll leverage the power of sentiment analysis to investigate the WhatsApp chat using R, visualize and interpret the results at the same time. However, large data is made to handle the different sources and different formats of the structured and unstructured data. Sentiment analysis uses data mining processes and techniques to extract and capture data for analysis in order to discern the subjective opinion of a document or collection of documents, social media feeds like whatsapp.

In this article, I describe how to use R tools to capture data for storage and process the data for sentiment analysis for whatsapp.

2. SENTIMENT ANALYSISFOR WHATSAPP

Sentiment analysis is the process of using text analytics to mine various sources of data for opinions. Often, sentiment analysis is done on the data that is collected from the Internet and from various social media platforms. Analysis is the process of determining whether a piece of writing is positive, negative or neutral.



WhatsApp is most popular chat app with monthly active users of more than 700 million. The popularity of this app has made it a necessary app among smartphone users and even businesses and organizations use WhatsApp for daily communication in groups and across departments. Corporations get a huge amount of textual data from WhatsApp and they can leverage WhatsApp chat sentiment analysis to gain better insights about their employees and try to avoid unforeseen conflicts due to various redundancies and inefficiency of business processes.

3.SENTIMENT ANALYSIS ARCHITECTURE FOR WHATSAPP

Firstly, we need to select and export a chat from WhatsApp to our system which is an easy task and can be done either by phone or WhatsApp for the desktop. After this, the process is fairly simple and has been explained with all the coding details needed to analyze the texts.

- I am going to analyze a chat during the process.
- Read and load text file in R.
- Remove punctuation , numbers, special characters and other unwanted things and stem all the words.
- Make a word – cloud with according to the frequency of the word used.
- Visualization of the sentiments extracted from the texts.

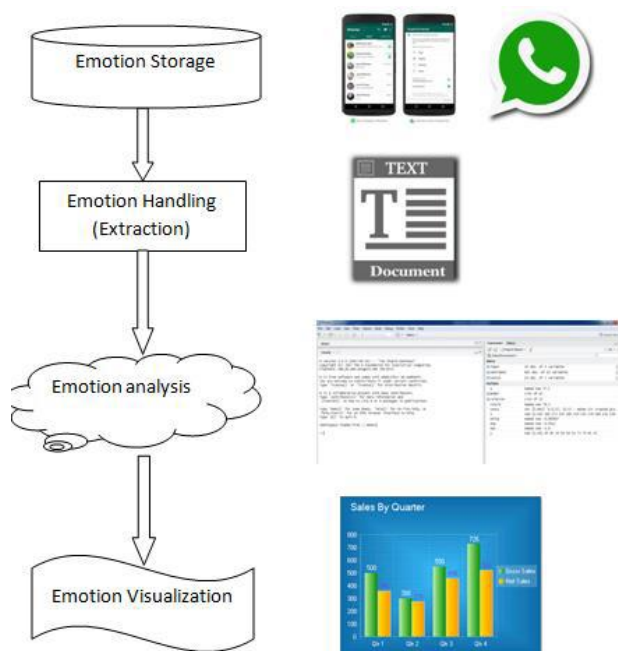


Fig.1 Sentiment Analysis Process flow Model

ANALYSIS STEPS ARE ASFOLLOWS:

R-tool has an package termed syuzhet which is imported at the start into the R-environment

- Import syuzhet package into R-Environment .
- Install syuzhet package
- WhatsApp chat text file that is saved in systems local drive is imported into the environment using readLine()

- Analysis on the emotions are made using get_nrc_sentiment() that produces sentimental values for the chat file.
- Emotional values of the whatapps chat will be produced as a whole.
- Dataframe and colums are the one that adds additional framework for the analysis produced
- Data visualization techniques such as barplot, boxplot, histogram,etc., that is suitable for visualizations of the sentiments used and this visualization is the final step for exposing analytical result.

Issues with Sentiments and Analytics

Though Sentiment analysis has been one of the most popular textual analysis tools among businesses, scholars and analysts to take decisions and for research purposes Sentiment analysis has its own limitations as language is very complex and the meaning of each and every word changes with time and from person to person. Also, the accuracy of the analysis can't be accurately measured and compared with how human beings analyze emotions.

1.Sarcasm: It is a popular form of mockery to ridicule or convey insult. Analytics fails to recognize these forms of emotions and might prove to be ineffective in such cases. Though the efforts are being made to cater to this problem through the extensive use of machine learning and artificial intelligence and we might see an improved version of sentiment analysis in near future.

2. Multiple Meanings: A word could have many meanings and it may represent multiple emotions as we move from one geography to another or even one person to another. Many English words in the UK may differ in meaning with American English. For ex: "I think you've been playing horribly dope."

3. Dependency: Sentiment analysis largely depends on the predefined words and their individual score , Which leads to many problems like ambiguity in the context of the sentence. A sentence which includes 'good' might not have any emotions attached to it but will be shown as positive by the analysis.

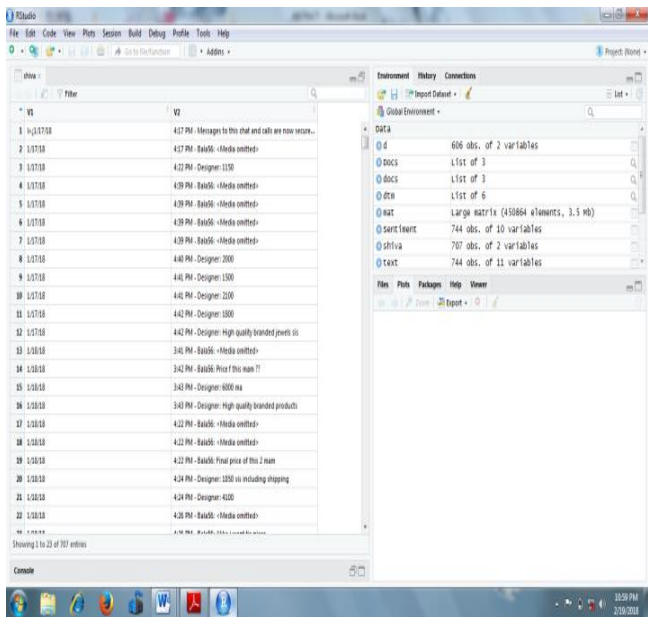


Fig2. Chat for sentiment analysis

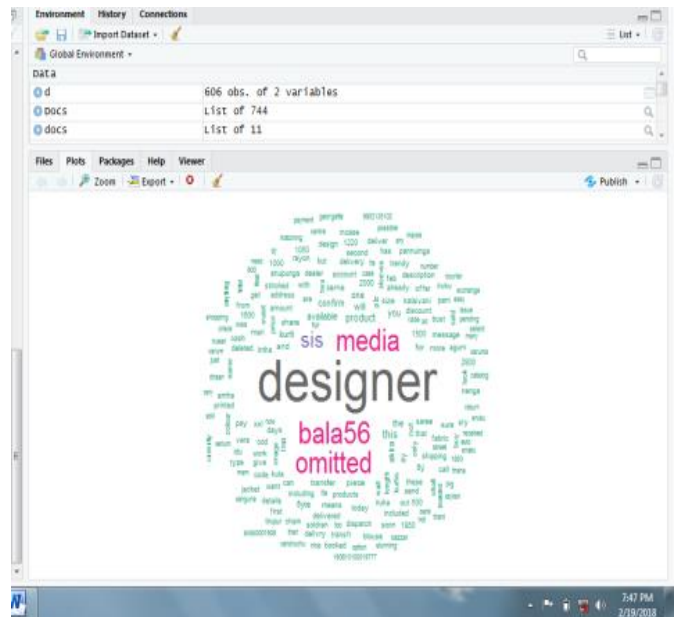


Fig3. Wordcloud for sentiment analysis

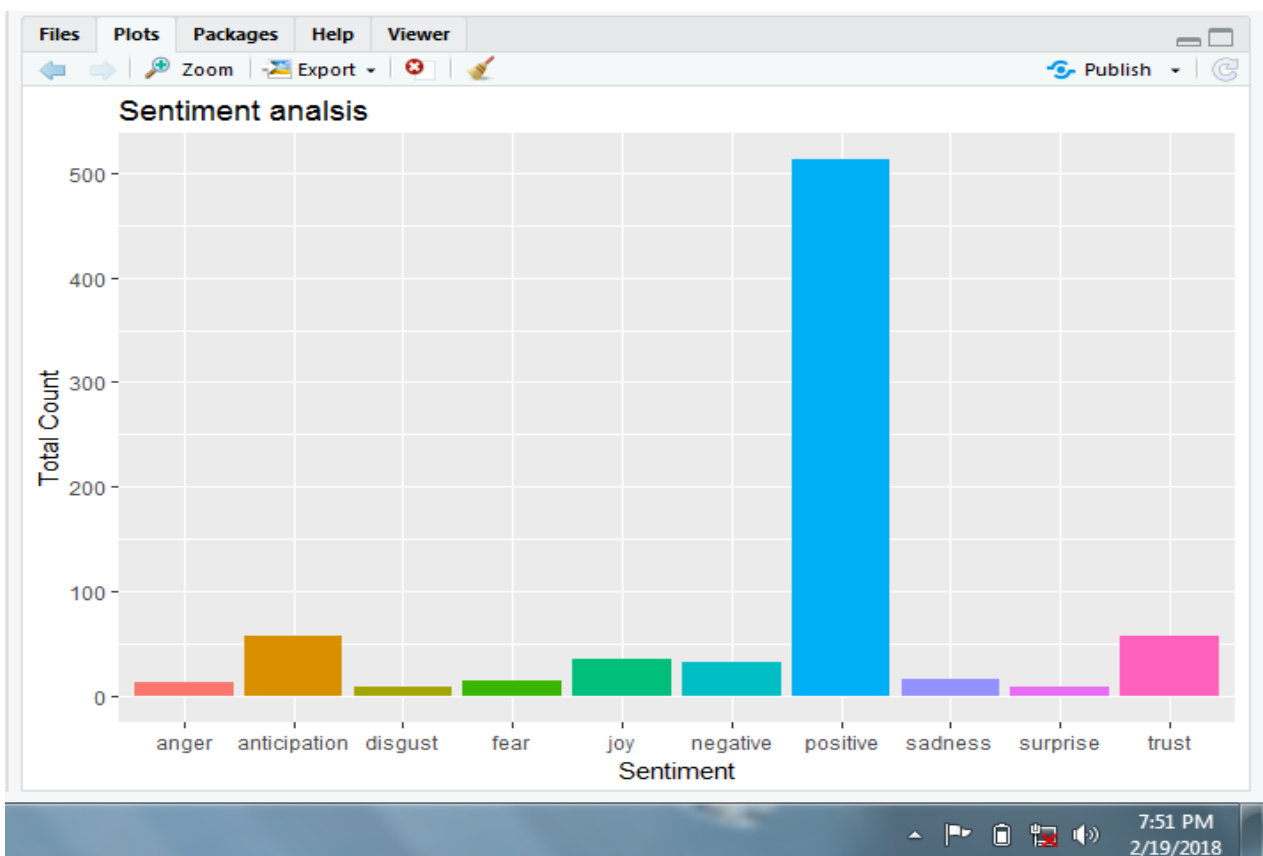


Fig4. Visualization of whatsapp chat sentiment analysis

Chat for sentiment analysis :

The text object now has to be preprocessed to remove punctuations, numbers, routine english words and pronouns etc. The corrected text has to be stored as a vector in order to plot the wordmap. There might be some additional words additional to the default stopwords and are included in stopwords vector in the code.

Wordcloud for sentiment analysis:

A Word-Cloud is built using chat collected from whatsapp chat . As expected, from the word cloud in the form of words “**designer, media, bala.56.**” The chat seems to have positive response .Sentiment analysis is then done on the clean text to classify the chats as Negative, Neutral and Positives. It is important to make sure to have the sentiment.R file, text files of positive and negative words in the current directory. Chat splits into **5% Negative, 90% Positive and 5% Neutral** opinions.

Visualisation of the sentiments extracted from the texts :

We can easily infer from the bar plot that the chat had a maximum number of positive sentiments followed by negative as second and anticipation at third.

4. CONCLUSION

Sentiments plays a vital role based on which any conclusion or justifications of any real time scenario can be derived. In this paper those sentiments were analyzed using emerging Big Data Analytical tool that produced a result with higher echelon of positive emotions for the chat that was taken for the analysis. Finally it is stated that since the chats produced positive responses chats can be proceeded with that team or group and as it emotionally lies on the positive scale the group can be in active state without any reporting on it. This paper focuses on the offline analysis of the chat data which was taken between certain period of time interval but emotions may be varied.

FUTURE SCOPE :

Sentiment Analysis is extremely popular and widely used analytical tool in business intelligence for social media monitoring, brand health examination, effects of ad campaigns or new product launch and various research purposes. It can be further applied to Twitter data and Customer reviews by marketers and customer service teams to identify the feelings of consumers. Sentiment analysis has also started to gain popularity in areas like psychology, political science and other alike fields where textual data is obtained and explored from books, transcripts, and reports.

REFERENCE:

[1]. **C. Premalatha, S. Jansi Rani**, Journal of Data Mining and Management Volume 2 Issue 3, “**ANALYSIS OF WHATSAPP DATA USING DATA ANALYTICS TECHNIQUES**”

[2] SanchitaPatil, International Journal of Computer Applications (0975 – 8887) Volume 154 – No.4, November 2016, “WhatsApp Group Data Analysis with R”

[3]<http://www.planetanalytics.in/2017/09/whatsapp-chat-sentiment-analysis-in-r.html>

[4] <https://blog.algorithmia.com/introduction-sentiment-analysis-algorithms/>