

Safety Measures Against Women Violence in India using Sentimental Analysis

S. Ramamoorthy, R. Poorvadevi

Abstract— Women status in the society gone through many changes from the Ancient days to modern society and they are promoted to equal status with man in many aspects by the reformers. Women in India facing many problems by the modern day society. Sharing 33% of equal responsibility in the social contribution, they are still living in the restless life. Increasing number of Violence and Crime rate against woman in India will set many unanswered questions to government and the society regarding women safety. The proposed work designed to analyze the various forms of violence and threats against the woman by making use of most popular and powerful social media data. The number of likes, tweets, comments, blogs and post on the particular incident against woman can be used for this analysis. These Social networking sites collectively update the feedback about particular incident and it will be exhibit under the discussion of many people. This will give the global picture of various crimes against woman and showcase how the intention framed and motivation behind the scenario. This data would helpful to safeguard the woman from the unlikely violence against them in the society. The model uses Sentimental analysis with machine learning technique and K-means clustering algorithm to classify the datasets. This model would recommend various guidelines and precautionary efforts needs to establish by the government and public awareness to save the woman from the various violence in the form of sexual harassments. This model also takes advantage to alert the woman from the difficult situations.

Keywords:- Women Safety, Violence, Social Network Sites, Sentimental Analytics, Neural Tensor Networks etc.,

I. INTRODUCTION

The main aim of this system is to provide precise security precautionary steps in order to protect harassment prevailing in the present society. The system facilitate to analyse the threats against through social networking sites. Here we retrieve comments, likes, shares and other forms of opinions of people from multiple social networking sites. The

1.1 Sentimental analysis

The data associated with the human beliefs on the particular incident namely positive, negative and neutral state of human mindset. The data collected from multiple social networking sites considered for the analysis. This data is then converted into sentimental feelings like anger, disgust, positive, negative, sadness by making use of a package namely *syuzhet*. These sentimental feelings are then analyzed and accordingly based on the rate of sentiment guidelines provided. Sentimental analysis is also represented in a graphical format.

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1.2 Existing System

Many methods are being focused in order to prevent harassment, and few of them reported by the government are as follows vulnerable groups-CES(a Government association) requests the learned Committee to kindly focus adequately on safety and gender justice for the most marginalized and vulnerable such as dalit and adivasi and of minority communities. The in conflict situations who are subject to sexual violence as a political weapon of subjugation, when the aggressors belong to upper caste, class, or authority, disabled, homeless and destitute girls and, sex workers, and trafficked girls for sexual and domestic labor, transgender people, domestic workers, casual wage workers etc.

The Committees against Sexual Harassment which are to be constituted in various state and private establishment (including schools, Hostels, colleges), suitable amendments in law and procedures for police and judicial accountability. Government of India established strict rules in harassing perspective by enhancing and empowering laws so as to avoid harassment of women in the country. Few organizations like Alex foundation and iamnirbhaya empowerment started to spread awareness among citizens in the form of social networking sites or through other means. The active fellows started to mine metadata from you tube and studied the content in it regarding harassment thereby, produced some thesis and papers educating people to some extent.

1.3 Drawbacks of the Existing System

However, there have been many theories and procedures put into practice in order to eradicate harassment against, there seems very less progress in the country, the following are the major drawbacks those could possibly be portrayed.

- Laws, though strictly being passed, are not properly processed.
- Spreading awareness is confined to limited places.
- Proper education on this preventive measure to empower women is not reached to all corners of people in the country.
- Lack of clarity in the incident analysis and motivation identification.
- Improper amendment activities so as to eradicate harassment on women by government. Laws are being sold for the rich and are purely said to be misused by higher authorities.

II. 2. PROPOSED SYSTEM

The proposed system introduces the model in order to eradicate harassment in the society. The major idea behind this scenario to collect opinions and interests of people through multiple social networking sites, because of the fact that social networking sites are powerful and spread information all over globe in a very less time also, they contain huge data relating to social issues. Hence data relating to this concept found through social networking where opinions, comments, likes and dislikes of people are found.

The collected information's are taken for the analysis. The comments and likes are mapped into the statistical values which helps the model to understand the user feedback. The sentimental feelings like anger, disgust, sad, happy, positive, negative and sentimental analysis is performed on this retrieved dataset. Sentimental analysis is represented in the form of a graph portraying the rate of sentiment with respect to the sentimental feelings of people. With the help of these graphs essential guidelines are recommended to the government so as to ensure the safety of women in the society.

1.4.1 Algorithm

Recursive Neural Tensor Network (RNTN). Recursive Neural Tensor Networks take as input phrases of any length. They represent a phrase through word vectors and a parse tree and then compute vectors for higher nodes in the tree using the same tensor-based composition function. The proposed work compares to several supervised, compositional models such as standard recursive neural networks (RNN) with the new dataset to improve the performance of the model when predicting fine-grained sentiment for all nodes.

III. 3. SYSTEM PLANNING AND DESIGN

3.1 Overall System Design Structure

The proposed system architecture is designed based on the sentimental analysis algorithm which includes sequence of steps to be followed in achieving the desired output as follows in the diagram 3.1.1.

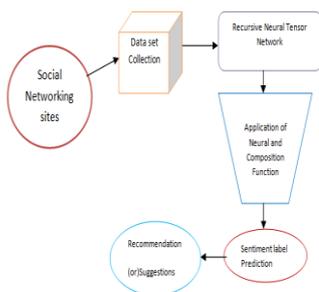


Fig.3.1.1 Architectural diagram

Social networking sites

Social networking sites are prominent these days in terms of data sharing, hence collecting relevant information from social networking sites helps in providing vast amount of

people's opinion on the particular concept. The new source of feedback collection available where one can find data that is needed, the required data is being collected by ensuring that the collected data is fit to the concept on which the given model proceeded.

3.2 Phases of Sentimental Data Analysis

3.2.1 Data Collection Phase:

The data from various networking sites like Facebook, Twitter is collected. The information that is being collected is ensured to be apt information that matches up with the concept of harassment, by using open authentication in R-studio, this information is exported and saved as a data set which is used for further data analysis. This methodology of analyzing data is done by converting retrieved data in the form of sentimental feelings using r-package namely syuzhet. Initially in the phase of retrieving comments from multiple social networking sites we create a page with the content regarding harassment so as to retrieve the comments from the page.



3.2.2 Aggregation Phase:

On successful accomplishment of data retrieval, the data set that is retrieved is of tabular form. This data set constitutes of various opinions of people collected from multiple social networking sites in the form of sentimental feelings and thereby this data set is aggregated based on the rate of sentiment. The analyzed data sets forms various sentimental tables, these tables are imported and aggregated that are used for further analysis.

3.2.3 Analysis Phase:

The data imported in R-studio is analyzed by using packages like syuzhet, and various graphs are plotted based on data set. Syuzhet package helps in converting user's opinion in the form of sentimental feelings like anger, disgust, sadness, happy, positive, negative. Thus data on being converted into sentimental feelings is then tabulated in the form of data set and then it is being saved in a drive, through r tools saved data is being retrieved and then coded for analysis.



Table-3.2.1 Rate of Sentiment Vs Proposed Guideline practice

Recommended guidelines derived from the Predictive Model on Harassment:

| Comments | Impact | Proposed Guidelines |
|--|---|--|
| People who did this entire thing have to be treated like hell. In the same way what they have did for women. A perfect example recently happened incident in jail . | Rate of sentiment-5 Highly risky | Strict rules with immediate actions are demanded. |
| \\"Pregnancy, periods, breast cancer, being walked on, rape, harassment, abuse; females go through a lot. ARE STRONG | Rate of sentiment-4 Highly risky | empowerment has to be given importance and is to be focused |
| At first educating d ppl s d solutn bt den even educated ppl also behavng lyk illiterate fools.. So may b merciless punishment l b betr whch discountry wil never accept | Rate of sentiment-3 Risky | Government should ensure that proper moral values and ethics from their schooling. |
| We can discuss for this issue as a matter of a week or a month or year.. It's not to blame only on society.. There are some other activities should be banned.. | Rate of sentiment-3 Risky | Social media in a sense is believed to be spreadingrequired to take proper actions by the government so as to condemn these kind of practices |
| kill them badly and make fear in others so that similar situations will not arise !!!! | Rate of sentiment-3 Risky | Higher order punishments with immediate actions are to be given to the culprits |
| Every person should have humanity and responsibility. If people have these qualities then there is no these stupid actions and no need of government strict action | Rate of sentiment-2 Low risky | Individual responsibility in respecting, protecting and treating has to be enormously changed and is to be reached to all the young minds of the country |
| don't support or encourage such kind of monster behaviourimmediately take action | Rate of sentiment-2 Low risky | social awareness regarding security has to be spread by the government |
| the punishment for such crimes should be in such amanner that they should get fear | Rate of sentiment-2 Low risky | Strict rules with immediate actions are demanded to be taken |

The above mentioned guidelines are provided to reduce the risk of harassment in the society and also proper enhancements if made in the society by following above guidelines may help the government and individuals in eradicating harassment on paving way for empowerment and increased security. These guidelines can be quoted as

remedies those could be followed in contrast to major opinion of people in the society and thereby these guidelines are "people's choices".

Table: 3.5.1 Sentimental Data Expression

| | anger | anticipation | disgust | fear | joy | sadness | surprise | trust | negative | positive |
|----|-------|--------------|---------|------|-----|---------|----------|-------|----------|----------|
| 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 1 |
| 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 3 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 5 |
| 4 | 3 | 3 | 2 | 5 | 1 | 3 | 1 | 3 | 5 | 2 |
| 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 6 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 3 | 1 | 1 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| 8 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 2 |
| 10 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 11 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 2 | 4 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| 21 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 22 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

IV. SYSTEM IMPLEMENTATION

Once input data is given in the form of comments by the user, the data gets recorded. Accordingly, based on the given input, further data is analysed and Graphical representation of the output is being displayed based on sentiment. Analysing is performed using multiple social networking sites and output is displayed in the form of graphical representation for number of emotions. All the above operations are performed using R-studio. Data provided by the user may be of the following form: It constitutes of sentimental feelings like anger, anticipation, disgust, fear, joy, sadness, and trust, negative and positive sides of a problem.

V. RESULTS & DISCUSSIONS

5.1 Sample Screens and reports

sThe positive and negative feelings of public opinion accomplished through integrating multiple social networking sites.

Table: 5.1.1 Sentimental analysis

| | anger | anticipation | disgust | fear | joy | sadness | surprise | trust | negative | positive |
|----|-------|--------------|---------|------|-----|---------|----------|-------|----------|----------|
| 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 1 |
| 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 3 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 5 |
| 4 | 3 | 3 | 2 | 5 | 1 | 3 | 1 | 3 | 5 | 2 |
| 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 6 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 3 | 1 |
| 7 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 |
| 8 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 2 |
| 10 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 11 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 2 | 4 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |



Sample output:

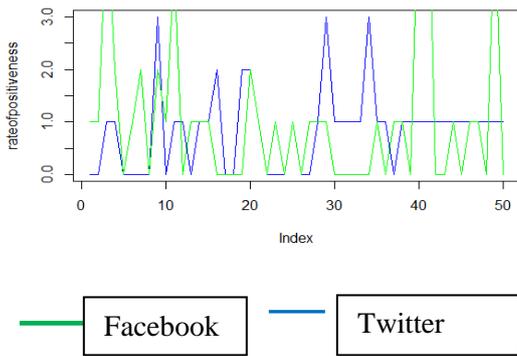


Fig: 5.2 Positive graphical representations.

Also, the negative graph can be represented by the following means. The graph gives contrast of negativity between social networking sites Facebook and Twitter, and the representation clearly depicts the range of sentimental feeling of the people on the prevailing issue.

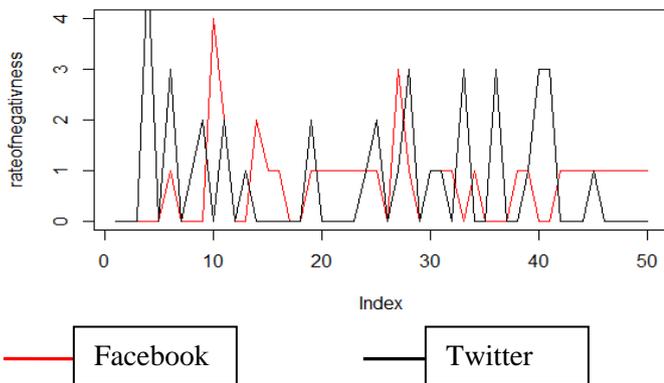


Fig: 5.3 Negative graphical representation

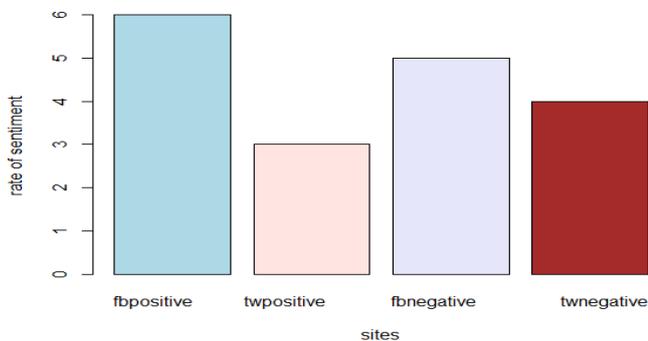
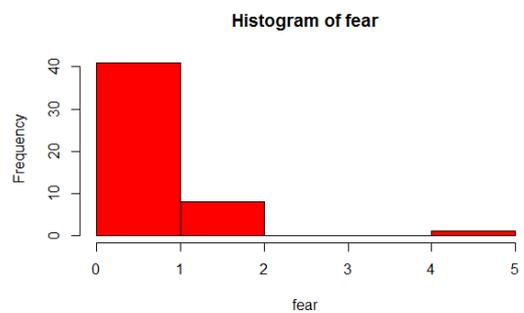
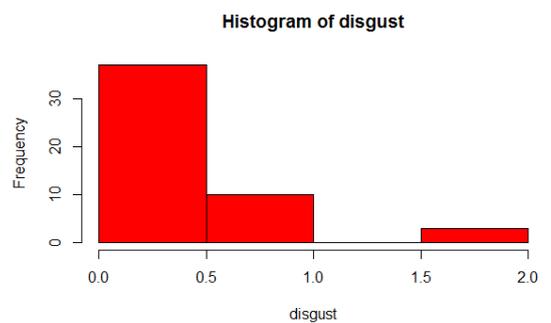
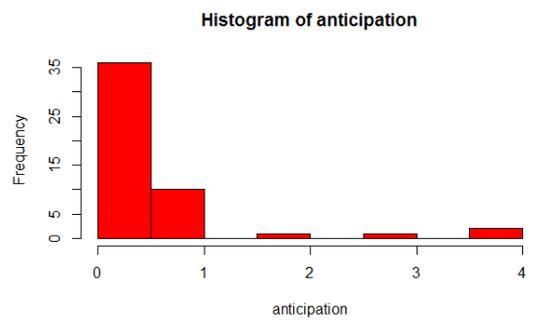
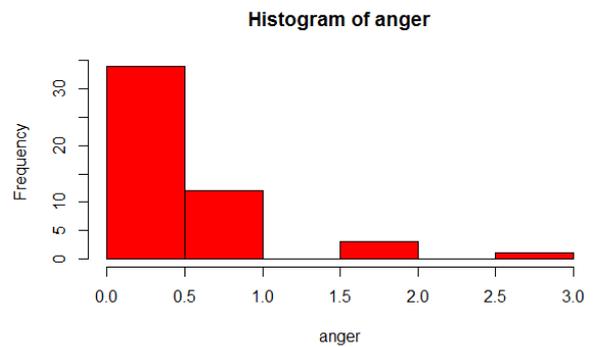


Fig: 5.4 Graphical representations of integrated sentimental data.

a) The above graph represents the major sentimental feelings like positive and negative opinions of people derived from networking sites like twitter and Facebook.

- b) Graphical form clearly depicts the rate of sentiment that is rate of positive and negative opinions of people with regards to harassment.
- c) In the above graph x-axis denotes sentimental feelings and y-axis denote rate of those sentimental feelings.



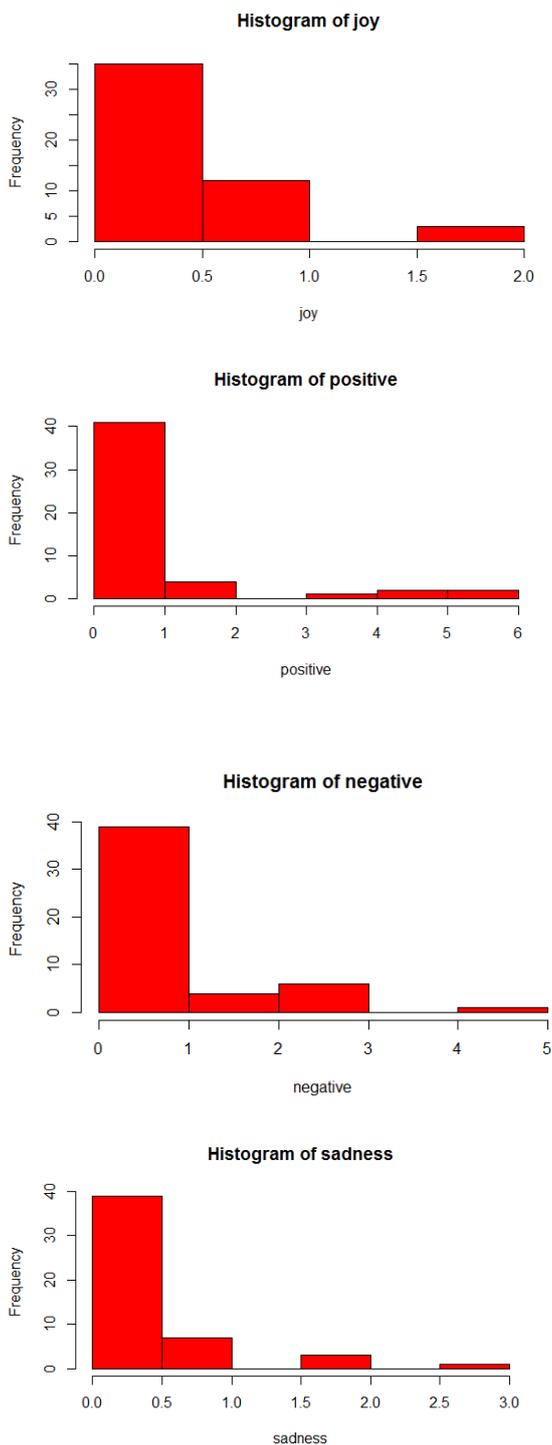


Fig: 5.5 Representation of sentimental analysis using Histogram

VI. CONCLUSION

The sentimental analysis on social networking sites is able to provide guidelines to the government so as to ensure security in a better way. On following the prescribed guidelines by the government gradual betterment in security of could be noticed. This methodology of collecting opinions of people from social networking sites enables in collection of quantitative information across the globe including the rate of their sentimental feelings on

harassment, providing a strong base for improving and empowering security. This way of analysing sentimental feelings of public and providing guidelines in order to lessen insecure problems arising in the society would definitely help in reducing the risk of these nauseous activities acting upon society and by strictly following the guidelines we can achieve betterment in the perspective of security.

VII. SCOPE FOR FURTHER DEVELOPMENT

On successful accomplishment of the project using R-studio, we can use this concept of integrating collected information from multiple social networking sites and deriving strategic graphical form on necessary concepts like child labour, child abuse, eve teasing which are showing their adverse effects on society thereby provide guidelines so as to lessen such worse scenarios prevailing in the society.

ACKNOWLEDGEMENT

I dedicate this work for the women society in India suffered directly or indirectly through this type of harassments.

REFERENCES:

1. "CLOSE THE GAP", by Heather McClintock, (Uganda) 2015.
2. Sexual harassment of women at work place in INDIA, journal of business management and social sciences research, volume3, No.7, July 2014.
3. Sexual harassment at work place in INDIA, by Indian Acad Forensic Med, 2014.
4. Brief Critical Analysis of women (Prevention, Prohibition and Redressal) Act 2013, by GUJARATH NATIONAL LAW UNIVERSITY, March 2014.
5. She shoots, She scores! by, Ashley Billings and Joanna Woods, 20 April 2011.
6. Data driven behavior modeling by L.Corbet, Parvathi chundi, 2010, April.
7. Conflicted identities and sexism by, Michelle Madsen Camacho, Susan M. Lord, 2010.
8. Julie Mertus with Mallika Duttand Nancy Flowers, 'Local Action/Global Change: Learning About the Human Rights of and Girls, 2008.
9. Vidya Shah with Devika Sahdev, 'Strength in Action: An Educators' Guide to Preventing Domestic Violence', Breakthrough, New Delhi, 2007 [April].
10. Greg and liam 'It's in our hands: Stop Violence against ', Amnesty International, London, 2004 [I].