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Extraction of costumer's Opinion Mining on Mobile Gadgets Through online Sites

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ABSTRACT

Today's Internet technology plays a vital role in day to day life due to use of Internet enabled gadgets available to users. Purchasing trends have changed, now mostly customers place their orders on shopping websites and also participate in making review or comment of used product from that websites and even decide their purchasing mood after reading the reviews of sold product. Therefore it is necessary to mine the opinion of customer of unstructured reviews using tools.

Keywords: customer reviews, opinion mining, features extraction, sentiments, recommendation

I.INTRODUCTION

Many times, other users experience and opinions might becomehelpful in increasing the sale of product and can be used for recommending the product or service to the customers. For this technology help more in mining the opinion of customer for recommending the same intended product. Opinion mining can be defined as according to Fang et al., 2012.

"Extracting the opinion of the users and analyzing them to draw meaningful conclusion from their respective ideas in terms of reviews and feedbacks"

Many product web sites keep their comment section open for placing the experience of purchased product. All these comments are in unstructured and in unguided format and taking the useful insights from these can be tedious job. Data Science tools and techniques can be handy tool for opinion mining for the extraction of useful reviews of products.

Mobile phones which are purchased frequently over the Internet using online shopping websites. Many users put their experiences for the purchased product on the same websites, some are positive and negatives. Majority of positive comments can pave the way for more sale opportunity for that product and negative comments open the way for improvement in product or services to the selling companies. In this article we are here motived to purpose methods which will be helpful in extracting the unique features from collected reviews of sold mobiles. Analyzing these reviews might help the others inselecting the product for purchse. Our purposed work collected the review of mobile products from these various online shopping websites like

1) http://www.amazon.in/product-reviews/B01C2T6IDY/ref=cm_cr_getr_d_paging_btm_3?ie=UTF8&reviewerType=all_reviews&showViewpoints=1&sortBy=recent&pageNumber=3

2) https://www.flipkart.com/redmi-note-4-gold-64-gb/product-reviews/itmeqg86fjyzkdq8?page=1&pid=MOBEQ98MNXHY4RU9

These categorized features will help in extracting the right choice of product for customer.

II. REVIEW EXTRACTION PROCESS

This sub section emphasizes on feature extraction procedure and methods. Mostly it is observed that reviews from customer on product selling websites contain some positive and negative words and by thoroughly analyzing help in concluding the features and quality of product. Here we have used R programming tool with some sense mining packages like

a) tm –(text mining)
b) syuzhet -for sentiment analysis
c) wordcloud – (word cloud creation)

Text mining package (tm) (Feinerer, 2015)will create self-managing document called Corpus and for keeping the meaningful words in corpus document , tm provides some method are called transformation methods in which punctuation , English stop words and stemming methods are used. Term document matrix help in extracting the frequency of words from corpus document. Word cloud package (I Fellows, 2015) are used representing the graphic view of frequent words in cloud format with highest frequent word in darker format as compare to less frequent word. Table 1 and Table 2 representing the top ten frequent keyword from flipkart and amazon websites mobile product reviews followed by in word cloud format in figure 1 and figure 2.

Table 1 Flipkart Redmi note 4 reviews Frequent words

Srno.	Frequent Keywords	Frequency
1	Buyer	120
2	Certify	117
3	Phone	100
4	Good	83
5	Camera	59
6	Feb	50
7	Batteri	35
8	Product	34
9	Awesome	34
10	Jan	34

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Table 2 Amazon Redmi mobile product review frequent words

Srno.	Frequent Keywords	Frequency
1	Phone	19
2	Mobile	16
3	Good	16
4	Note	11
5	Service	11
6	Camera	11
7	Redmi	10
8	Problem	10
9	Time	9
10	Got	7

Figure 1amazon website reviews keywordwordcloud

Figure 2Flipkart website review keywordwordcloud

Syuzhet package (M. Jocker, 2016) help in extracting the sentimnet which was developed in Nebraska Literary lab developed by Finn. A method called get_nrc_sentiment is used for getting the review text file and this will

generate the data frame collection of emotion collected from given text file. Table 3 giving amazon website extracted review sentiments sample table of emotions with counting.

sentiment	Counts
anger	19
anticipation	57
disgust	11
fear	22
joy	27
sadness	25
surprise	20
trust	41
negative	45
positive	61

III. PEFORMANCE EVALUTATION

From frequent keywords, figure 3 and figure 4 representing the sentiments of repective websites product reviews. It is clear that flipkart website visting customers are in positive favourto the xiomi mobile and in displaying trust and also same scenario refelcting in favour of redmi mobile on amazon webiste with more anticipation and positiveness.

There are various metrics available for evaluating the feature extraction and user feedback (Gunawardana et al., 2011). Famous evaluation metric precision evaluation metrics which formula used as

$$= \frac{\text{no.of users with positive feedback}}{\text{total number of users with feedback}}$$

Highest precision refers to accuracy of method of mining.

Website review	Positive Feedback (anticipation, trust, joy, positive)	Total feedbacks	Precision
Amazon	186	300	62%
Flipkart	975	1560	62.5%

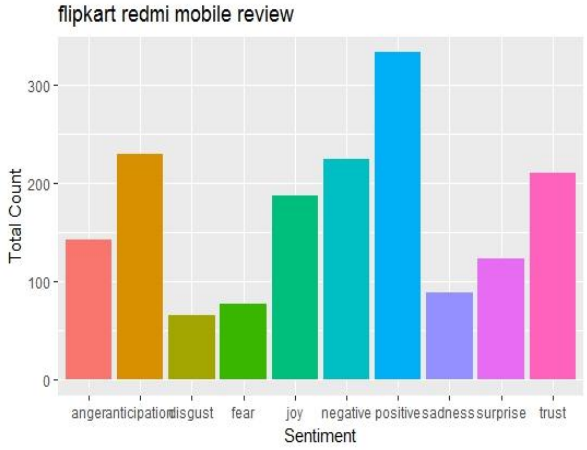

Figure 3 customers sentiment about Mobile on Flipkart website

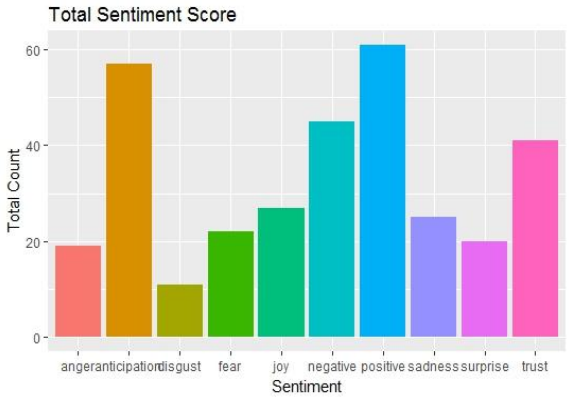

Figure 4 Customers sentiment about mobile on Amazon website

IV. CONCLUSION

In this article our emphasis on exatraction of frequent keywords from reviews collected from famous websites names amazon and flipkart about mobile. These review keywords are used are used for deriving the sentiments of user on particular product on websites. These extraction method helps in selecting the better product and give the opportnuity to selling companies to imporve the product. After evaluation of performance of both websites product reviews tends to positiveness and favour for more sale. Precision evaluation feature of both websites product are 62%. High value of precision indicates the accuracy of method adopted.

In future we can enlarge the number of reviews and will emphasize the implementation of application which can automate the whole process of feature extraction and sentiments.

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