Fostering Innovation, Integration and Inclusion Through Interdisciplinary Practices in Management
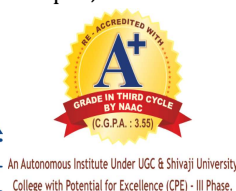
Sentiment Analysis of Feedback Data

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ABSTRACT

Knowing about the user's feedback can come to a greater aid in knowing the user as well as improving the organization. Here an example of student's data is taken for study purpose. Analyzing the student feedback will help to help to address student related problems and help to make teaching more student oriented.

KEYWORDS: *sentiment; feedback, Excel, frequency*

I. INTRODUCTION

Feedback taken from students will help teaching learning more effective. This also helps to understand the learning behavior of students. A feedback is usually taken at the end of the unit. The feedback of the student must be taken in real time which helps to know the learning behavior of the student. The feedback from the students is collected using SRS (Student Response System). The data used by us for study purpose is taken from Kaggle. Sentiment analysis or opinion mining is the process of identifying and detecting subjective information using natural language processing, text analysis, and computational linguistics. In short, the aim of sentiment analysis is to extract information on the attitude of the writer or speaker towards a specific topic or the total polarity of a document. It is the process of determining the opinion or tone from a group of words. It helps us gain attitude and motion behind a series of word.

II. Sentiment Analysis

Sentiment analysis (also called: sentiment mining, sentiment classification, opinion mining, subjectivity analysis, review mining or appraisal extraction, and in some cases polarity classification) can deal with the computational handling of subjective, sentiment, and opinion in the text. It plans to realize the attitude or opinion of a writer with respect to a certain topic or goal.

The attitude could reflect his/her opinion and evaluation, his/her effective situation (what are the feelings of the writer at the time of recording the opinion) or the purpose emotional communication (What is the effect which is situated on the reader when reading the opinion of the writer). Moreover, it should be noted that in this context 'subjective' does not mean that something is not true.[1]

The present study aims at:
➤ Data exploration
➤ Data visualization
➤ Sentiment analysis
➤ Opinion mining

III. Literature Reviews

Demonetization, the most talked issue since eighth November 2016 and has evoked solid responses from the supporters and critics of this activity. We report opinion mining approach to deal with unstructured tweets on Twitter to extort the emotions classification and polarity towards public opinion on demonetization. Here we created a twitter app to ingest data by calling twitter APIs. We retrieved 772 tweets on demonetization posted during 2nd week of July 2017 for the analysis. R Tool is used for performing this analysis. It can be noted from the emotions classification result that the most prevailing emotion expressed in the tweets is trust, indicating the amount of trust Indians had in the prime minister in going up against the black money in nation.[9]

Sentiment analysis or opinion mining is used to automate the detection of subjective Information such as opinions, attitudes, emotions, and feelings. Many researchers spend long time searching for suitable papers for their research. Online reviews on papers are the essential source to help them. Thus, online reviews can save the researcher's time. It provides effort and paper cost. In this thesis, propose a new technique to analyze online reviews in the scientific research

domain called: "Sentiment Analysis Of Online Papers" (SAOOP). SAOOP aims at supporting researchers and saving their time and efforts by enabling them to report the total evaluation for the papers.[1]

Growth in the area of opinion mining and sentiment analysis has been rapid and aims to explore the opinions or text present on different platforms of social media through machine-learning techniques with sentiment, subjectivity analysis or polarity calculations. Despite the use of various machine-learning techniques and tools for sentiment analysis during elections, there is a dire need for a state-of-the-art approach.[4]

IV. Research Methodology

We have collected data for study purpose form kaggle website [11]. The data has feedbacks collected from students regarding teaching of an organization. The data has feedback collected from students there are 186 records. The tool used for analysis is " Microsoft Excel". We uses sentiment analysis for analyzing the feedback , Recently, several websites encourage researchers to express and exchange their views, suggestions and opinions related to scientific papers. Sentiment analysis aims at determining the attitude of a writer with respect to some topics or the overall sentiment polarity of a text, such as positive or negative. Sentiment analysis depends on two issues sentiment polarity and sentiment score. Sentiment polarity is a binary value either positive or negative.

We used the data from kaggle which contains the feedback from students for teaching performance we followed the sentiment analysis process at, first we identified the problem to be solved from given data then we set the objective next, design a process to be carried out then by using excel we did the analysis of feedback by creating pivot table followed by which we created frequency table for the feedback and also given the scores, then by using positive, negative and neutral sentiments we present bar chart, histogram , pie chart which shows the highest frequency for which feedback.

V. Result and Discussion: Feedback and Polarity

Analyzing the feedback data to comprehend the sentiments of the students and what they this about the teachers. The present analysis is carried out in Microsoft Excel2010. 185 students gives there feedback about teaching of the teachers, the dataset is collected from kaggel for the sentiment analysis. Excel is used to analyze the reviews and to know what types of reviews are mostly given by the students.

Fig.1 shows the pivot table created on the basis of dataset. The pivot table removes the repeated reviews and makes a list of number of reviews; in another column it shows the number of count of each review that frequency of each review. From these counting we get know about the most occurring review. The next column is about scores , in score column it represent 0 as neutral review 1 as positive review and -1 as negative review. Next column gives sentiments whether it is neutral or positive or negative these is done by using if else in excel. This analysis easily shows the frequency of positive reviews as we are mostly interested for positive according to that the organization can make some decision and improvements in teaching.

Row Labels	Count of teach	score	sentiment
very good.	0.54%	0	NEUTRAL
According to me everythir	0.54%	0	NEUTRAL
Accurate	0.54%	0	NEUTRAL
all activies are good	1.08%	1	POSITIVE
all are good	0.54%	0	NEUTRAL
All is good. no other unive	0.54%	0	NEUTRAL
All lectures are giving thei	0.54%	0	NEUTRAL
All terms are good regardi	0.54%	0	NEUTRAL
all the given terms are goc	0.54%	0	NEUTRAL
All the terms are good reg	0.54%	0	NEUTRAL
all things are good	1.08%	1	POSITIVE
As compared to other coll	0.54%	0	NEUTRAL
average	3.24%	1	POSITIVE
Discipline, punctuality , le	0.54%	0	NEUTRAL
everything is good	0.54%	0	NEUTRAL
everything is good but wh	0.54%	0	NEUTRAL
everything is good for faci	0.54%	0	NEUTRAL
Everything is very good. Ir	0.54%	0	NEUTRAL
everything was good rega	0.54%	0	NEUTRAL
Everything would be fine il	0.54%	0	NEUTRAL
examination department i	0.54%	0	NEUTRAL
EXCELLENT	1.62%	1	POSITIVE
Excellent but it depends c	0.54%	0	NEUTRAL
Excellent lectures are deli	0.54%	0	NEUTRAL
excellent university the m	0.54%	0	NEUTRAL
good teaching delivery	0.54%	0	NEUTRAL
good, and also like the tea	0.54%	0	NEUTRAL
good, teacher is delivery r	0.54%	0	NEUTRAL
I am very much satisfied w	0.54%	0	NEUTRAL
I WAS A STUDENT OF A E	0.54%	0	NEUTNAL
in terms of lecture delivery	0.54%	1	NEGATIVE
In this university there is g	0.54%	0	NEUTRAL
Interaction between stude	0.54%	0	NEUTRAL
Interaction is good but it s	0.54%	0	NEUTRAL
interaction is good but no	0.54%	-1	NEGATIVE
Interaction is satisfying. L	0.54%	0	NEUTRAL
Interaction is very good.ar	0.54%	0	NEUTRAL
interaction is very less ,wh	0.54%	0	NEUTNAL
interaction of some facult	0.54%	0	NEUTRAL
interaction satisfied, lectu	0.54%	0	NEUTRAL
intraction is good and lea	0.54%	0	NEUTNAL
IT IS GOING GOOD	0.54%	0	NEUTRAL
It is good	0.54%	0	NEUTRAL
It is good depending on th	0.54%	0	NEUTRAL
it is ok	0.54%	0	NEUTRAL
it is quite good , dependin	0.54%	0	NEUTRAL
it is quite good , depends	0.54%	0	NEUTRAL
It is really qud	0.54%	0	NEUTNAL
It is very good learning in t	0.54%	0	NEUTRAL
its booring	0.54%	-1	NEGATIVE
It's good	1.08%	1	POSITIVE
It's good when compare w	0.54%	0	NCUTRAL
Its Quite Good	0.54%	0	NEUTRAL
Its to good	0.54%	0	NEUTRAL
lecture delivery and punc	0.54%	0	NEUTRAL
lecture delivery depends	0.54%	0	NEUTRAL
lecture delivery is not so g	0.54%	0	NEUTRAL
lecturer are punctual and	0.54%	0	NEUTRAL
Lectures helps in clear ou	0.54%	0	NEUTRAL
maintained punctuality, g	0.54%	0	NEUTRAL
nice	0.54%	0	NEUTRAL
normal	0.54%	0	NEUTRAL

finalDataset0.2   Sheet3

Fig.2 shows the frequency of positive, negative and neutral feedback and there are 121 feedback in pivot table. From these we can draw the bar chart. The reviews are classified as positive, negative and neutral and the analysis shows the significant percentage of the sentiments.

sentiments	frequency
Positive	8
Negative	8
Neutral	105
Total	121

Fig. 2 Sentiments and its Frequencies

Fig. 3 shows the bar chart which represents the sentiments according to their frequency so it easily tells that neutral reviews are more than positive and negative review. The chart shows the presentation in which neutral reviews are more than 100 whereas negative reviews are close to 10

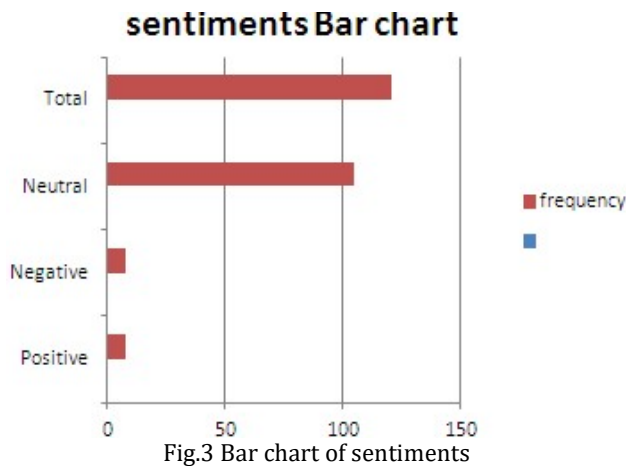similar to positive review so that the teaching can be improved to get more positive feedback.

Fig.3 Bar chart of sentiments

Fig. 4 demonstrates the reviews with their frequencies using histogram , all the reviews are taken on x-axis and according to their frequencies the histogram shows which review is higher occurring as seen in fig the "very good " review has the highest peak. The histogram shows that some reviews are more than 20% according to analysis from which organization will take decisions about teaching. Here out of all percentage most likely percentage is of neutral reviews.
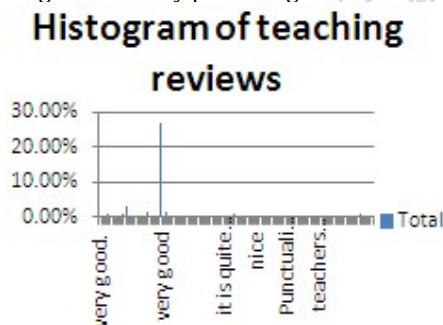

Fig.4 Histogram of teaching

Fig. 5 shows the pie chart for teaching reviews percentage, the violet color shows that "very good" review acquires more space on pie chart. So it shows more positive feedback about teaching. Pie chart is used here to represent the most occurring review.
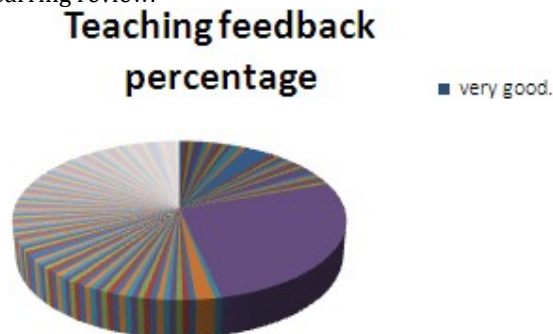

Fig. 5 pie chart for feedback percentage

VI. CONCLUSION

In the present paper, we have reported the analysis of feedback data of teaching from students, which is get from kaggle. We have done the sentiment analysis by using excel as tool. The investigation looked into variety of feedbacks and polarity about teaching from these analysis we get to know about which feedback student gives in more number about teaching according to that we can make some improvements in teaching, or most feedback are positive then we can maintain teaching level as earlier but if more feedback are negative then corrective actions and decisions should be taken. The study represents common students look over towards teaching and it is based on each review.

As we have used excel as tool for analysis similarly we can use R programming and Python likewise another tool. The methodology we used here is sentiment analysis, the sentiment analysis can also be applied on various twitter data to know about various trends, polarity and we can analyze public opinion, it also can be applied on various reviews data, to study customer surveys , public talks on a product. On other hand, we find another approach in the mining of sentiment is on the web. Web opinion mining aims at extracting summarize, and track various aspects of subjective information on the Web. This can prove helpful for advertising companies or trend watchers. By a synopsis of **Sentiment analysis** defection (also called as opinion mining) that refers to the use of natural language processing(NLP), text analysis (TA) and computational linguistics (CL) to identify and extract subjective information in source materials.

As these research is proposed research we are going to work further on it and analyze the twitter data by using sentiment analysis methodology as public opinion is the best tool to know the trends. These proposed work contain some graph analysis and frequency analyzing by doing further work we can find out the trends summary level breakup like wise many more operations on web based opinions which will used to take corrective actions and decisions.

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