Twitter Sentiment Analysis on Demonetization an Initiative  
Government of India

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Abstract-Declaration of 86 percent of currency notes as illegal tender in just a blink of time on eve of 8th November 2016 mandated the creation of immediate interruption in daily lives. The chaos was created in every strata of the society whether upper, middle, or lower. Where some welcome the move as it was seen for curbing black money, many are suffering by this movement. But the supreme sufferers of this move were the informal sector of India economy, where cashless transaction are minimal. Informal sectors of India Economy include 106 activities like agriculture, worker in construction, local transport, community services and small workshops like shoe makes and garment makers (International Conference of Labour Statistics (2003), rural populations and the urban poor and middle class. This paper aimed at reviewing the general implication of demonetization on people.

Keyword: Twitter, Sentiment Analysis, Sentiment Classification, Opinion mining, Machine learning.

I. INTRODUCTION

On 8 November 2016, the Government of India announced the demonetization of all ₹500 (US$7.40) and ₹1,000 (US$15) banknotes of the Mahatma Gandhi Series. The government claimed that the action would curtail the shadow economy and crack down on the use of illicit and counterfeit cash to fund illegal activity and terrorism. The sudden nature of the announcement and the prolonged cash shortages in the weeks that followed created significant disruption throughout the economy, threatening economic output. The move was heavily criticized as poorly planned and unfair, and was met with protests, litigation, and strikes.

II. IMPACT OF DEMONETIZATION

1) Effect on parallel economy: The removal of these 500 and 1000 notes and replacement of the same with new 500 and 2000 Rupee Notes is expected to - remove black money from the economy.
2) Effect on Money Supply: With the older 500 and 1000 Rupees notes being scrapped, until the new 500 and 2000 Rupees notes get widely circulated in the market.
3) Effect on Demand: The overall demand is expected to be affected to an extent.
4) Effect on Prices: Price level is expected to be lowered due to moderation from demand side.
5) Effect on various economic entities With cash transaction lowering in the short run, until the new notes are spread widely into circulation
6) Effect on GDP: The GDP formation could be impacted by this measure, with reduction in the consumption demand.
7) Effect on Online Transactions and alternative modes of payment: With cash transactions facing a reduction, alternative forms of payment will see a surge in demand.

III. TWITTER SENTIMENT ANALYSIS ON DEMONETIZATION

Twitter, and 'tweeting', is about broadcasting daily short burst messages to the world, with the hope that your messages are useful and interesting to someone. In other words, micro blogging.
Sentiment Analysis on Demonetization

We are finding out the view of different people on the demonetization through analyzing the tweets from Twitter. Here the dataset where the Twitter tweets are gathered in CSV format. You can download the data from the below link

https://drive.google.com/open?id=0B2nmxAJLHEE8amhpBTL5STezZTQ

After loading the data using Pig. You can see the tweets successfully downloaded through Pig.

Here is one example of a tweet: How to use the data from the Twitter and find that this text is positive or negative.


This is an example of Twitter and after that we will extract the id and the tweet_text and this command is used to find out the id and tweet text. After that we divide the tweet_text into words and calculate the sentiment of the whole tweet.

Then after we divide the text and create a new record and see the last RT word has been taken and created the new record. In which we can use the describe token to check the schema of that relation and it follows:

tokens:{id:bytearray, text:bytearray, word:chararray}

Now we analyse the Sentiment analysis for the tweet by using the word in the text. We will rate the word per its meaning from +5 to -5 using the dictionary AFINN. The AFINN dictionary consists of 2500 words which are related from +5 to -5 depend on their meaning. You can download the dictionary from the link: AFINN dictionary.

We are download the AFINN dictionary and can see the contents of the dictionary and after using the content of the dictionary we will extract the id, tweet text and word rating from the dictionary. After that we can calculate the Average rating of the tweet using the rating of each word. We will get the tweets i.e., positive and negative.

IV. SENTIMENT ANALYSIS OF TWEETS

In which we use Python application using data from demonetization in India Twitter data.
V. SENTIMENT ON TWITTER ON DEMONETIZATION

On the first day of the weekend, sentiment was largely negative around the currency ban. Sunday evening Narendra Modi was being tweeted out with positive sentiment at around 58 percent.

VI. SENTIMENT ANALYSIS ON DEMONETIZATION USING R ON TWITTER DATA

This article describes the sentiment analysis on Demonetization launched by the Government of India. Sample data (1500 tweets) ingested from Twitter on 16 November 2016.

Analysis done in R - Pre Requisite:
- R-Studio or R-Console
- Twitter App

Step-1: Create Twitter App to ingest data by calling Twitter APIs
- Create Twitter account and login to https://dev.twitter.com/
- Click on My App and create a new app
- Fill required details and create your app
- Click on "Keys and Access Token" tab and create your access token by clicking "Create my access token" button.
- Copy following 4 Keys in your application
  - Consumer Key (API Key)
  - Consumer Secret (API Secret)
  - Access Token
  - Access Token Secret
Step-2: Create R Program to ingest twitter data and perform analysis

It is Sentiment Analysis on Demonetization. We have collected 1500 tweet and then analysis that how many people are satisfied and how many people are disagree to closed the 500 Rs and 1000 Rs. After that we analysis the Sentiment Analysis of tweets about Demonetization through R program on Twitter Data. Sentiment Analysis is important to know that the people thinking about the demonetization. Sentiment Analysis is the computational study of opinions, sentiment and emotions expressed in text. 
Data taken on 16 Nov.2016 from twitter (1500 tweets). Plot distribution of emotions.

A Machine Learning analysis on Currency Demonetization
Machine learning is a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of computer programs that can change when exposed to new data. The process of machine learning is similar to that of data mining. Both systems search through data to look for patterns. However, instead of extracting data for human comprehension -- as is the case in data mining applications -- machine learning uses that data to detect patterns in data and adjust program actions accordingly. Machine learning algorithms are often categorized as being supervised or unsupervised. Supervised algorithms can apply what has been learned in the past to new data. Unsupervised algorithms can draw inferences from datasets. We tracked all the tweets from November 11th to November 12th, 2016, concerning the termination of 500 and 1000 rupees notes and analyzed a total of 6268 tweets.
VII. FUTURE WORK
This Research is based on Sentiment Analysis. Sentiment Analysis is also known as opinion mining. In which we analyze the view on twitter. Then we use this view and recognized the how many positive, negative and neutral text using the different programming applied. This demonetization will help eradicate the 5% of the black economy which is put in cash. Also we move towards digital economy. After conducting evaluation and receiving user feedback, it became clear the several improvement to the system are needed. First to speech to text transcription module should be adapted to a smoother conversational flow. Second "Happy" and "Sad" expression should be redesigned to denote happiness more actively and sadness. The Sentiment Analysis need to incorporate negation handling and emphasis handling in order to improve its classification accuracy.

Finally, it is important to recall that opinion are multidimensional object. In which we classify tweets into polarity classes, we are essentially these multiple dimensions to one single dimension. Furthermore, it is not clear how to project tweets having mixed positive and negative expression to a single polarity class. We have to be know that the sentiment classification of tweets may lead to the loss of valuable sentiment information.

VIII. CONCLUSION
Without adequate and proper planning, the demonetization-driven cash crunch has rendered India economy for short duration as the informal sector which comprises of 40 percent share in GDP has become unviable. Many people don't have bank accounts where they are paid in cash are facing server problem. Hours of working time is being wasted in standing in queues for exchange. For physically frail and senior citizens it is grave problem indeed to obtain new notes. Number of deaths occurred for want medicines as the doctors refused to take denominations of 500 and 1000. To have a relieve from this unnaturally created agony partial roll back of 500 denominations must be taken as, change for 2000 note for small transactions is another big problem for the common people. More smaller denominations notes must be ensured in bank and ATM's quite ahead before so that this acute shortage of notes were not felt as people would already had in their pockets. However the effect of change are emergent from the System itself and cannot be determined beforehand. Hence we can only speculate future macroeconomic effects of demonetization.

REFERENCES
6) https://drive.google.com/open?id=0B2nxAJLHEE8amhpTBi5STEzZTQ