

Project Dissertation

Understanding Customers Sentiment: A Study on Pepsi and Coca-Cola

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CERTIFICATE

This is to certify that the Project Report titled Understanding Customers Sentiment: A Study on Pepsi and Coca-Cola, is a bonafide work carried out by Ms. Zoha Rashid of MBA 2014-16 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfillment of the requirement for the award of the Degree of Masters of Business Administration.

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DECLARATION

I, Zoha Rashid, student of MBA 2014-16 of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 declare that Project Dissertation Report on titled Understanding Customers Sentiment: A Study on Pepsi and Coca-Cola submitted in partial fulfilment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

Place: New Delhi
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EXECUTIVE SUMMARY

The project aims to identify and monitor critical elements of customer engagement practices followed by marketers' practices on social media platform Facebook for optimizing service performance. Research was conducted for food and beverage industry.

The study focuses on attitude and behaviour of consumer for evaluating the success and effectiveness of the campaign. For identifying and analysing customer engagement campaigns on social media platform sentiment analysis was conducted.

The idea of the study is to determine the customer experience by examining the emotional inference of the targeted content. The data was collected from Facebook using data collection tool and sentiment of the consumers were analysed using analytical tools.

Sentiment analysis is an analytical approach for classifying pieces of text into clusters containing opinions on certain topics.

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INTRODUCTION

The role of social media platform has increased during the past few years as the buying behaviour of the consumer has been influenced by online brand communities, reviews about the product on social media platform and word of mouth. Trust in a company or brand depends on communities and peers through social media and other digital channels and is no longer dependant on company-controlled, traditional, mass channels. Therefore, in order to reach and market products to these customers, brands have to allocate significant marketing budget to digital and social media marketing.

Sentiment analysis was conducted to assess the opinion of consumer towards a particular post or towards the brand. For the purpose of study, food and beverage industry was focused upon and social media activities of two leading beverage players Pepsi and Coca-Cola were explored.

The project aims to study the effectiveness of social media campaign run by companies, it involve study of various customer engagement practices followed by the company. The study focuses on attitude and behaviour of consumer for evaluating the success and effectiveness of the campaign.

1.2. Digital Media Landscape

Digital Media is defined as audio-visual media contents and applications that are distributed directly over the Internet. This includes digital video contents (e.g. movies, series and TV shows), digital music provided as download or internet-stream as well as digital games for different devices and electronically published content such as e-Books, e-Magazines or e-Paper.(Statista, 2015)

The Indian media & entertainment sector is expected to reach US\$ 100 billion by 2025, from its estimated size of US\$ 17.85 billion in 2015, due to its large capacity to consume new products and businesses. Digital advertising is expected to lead the CAGR with 30.2 per cent, followed by radio with 18.1 per cent. ScoopWhoop, an Indian digital media and content start-up, has raised US\$ 4 million from Kalaari Capital and plans to use the funds for expansion of its video production unit called ScoopWhoop Talkies. (ibef, 2015)

Revenue in the "Digital Media" market amounts to 2,306.7 million USD in 2016. The digital video segment is expected to show a revenue growth of 22.8% in 2017. With a market volume of 33.074.7 USD in 2016, most revenue is generated in the United States followed by China, Japan, the United Kingdom and South Korea. (Statista, 2015).

Internet users are expected to grow much faster than TV viewers in the next five years. Internet Penetration in India is being driven by mobile internet usage. High speed internet connectivity across the country will enable more Indians to join the e-commerce and social media bandwagon and create a positive network effect for further growth.

Digital ad spend is a collection of multiple marketing strategies ranging from search and display advertising, to e-mail, mobile and video ads, social, sponsored content and more recently SMS based advertising. As marketers continue to increase the focus on technologies to effectively reach the customer through a mix of these online platforms, digital spends are projected to increase to INR 62.5 billion by the end of 2015 at a YoY rate of 44 per cent. Digital ad spends accounted for 10.5 per cent of the total ad spends of INR 414 billion in India in 2014. Digital media advertising in India grew around 45 per cent in 2014, and continues to grow at a faster rate than any other ad category. (FICCI-KPMG, 2015)

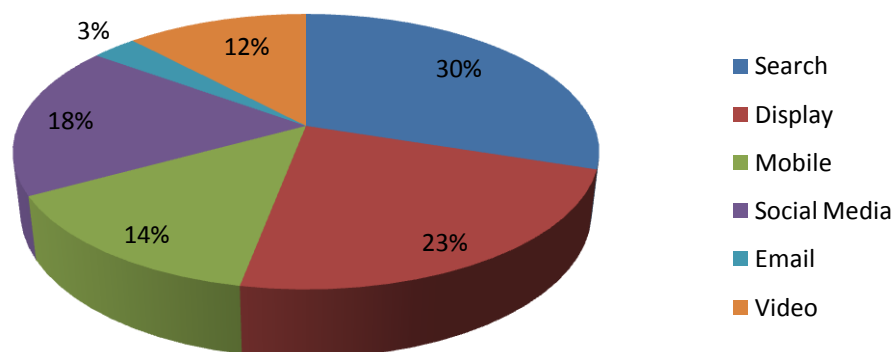


Figure 1.1: Digital Ad Spend Mix
(Source: FICCI-KPMG, 2015)

1.2. Objective of the Study

To conduct sentiment analysis for Pepsi and Coca-Cola using social media platform to measure the success of the campaigns run by the companies and to gain insight about the social media health of the company.

The study presented below aimed to answer the following questions:

- 1 What type of knowledge about customer experiences with services can be obtained from Facebook?
- 2 How can Facebook be processed to reveal important insights on customer satisfaction and/or dissatisfaction with services?
- 3 How can Facebook be used as an intelligence tool for detecting critical moments in service experiences from the customer perspective?

SOCIAL MEDIA TRENDS IN INDIA

2.1. Marketers at Social Media

In a survey conducted by EY, 81% of the brands surveyed considered Facebook to be the most important platform, while almost 48% of surveyed brands think that Twitter is the second-most important platform to be on, closely followed by YouTube (43% surveyed brands considered it to be the third-most important channel). (EY, 2015)

Businesses are also establishing their own YouTube channels while actively producing and distributing video content for promotional material and showcasing new developments for the brand. 70 per cent marketers plan to increase visual content on social media in 2015.

Customer Engagement was not a key focus area in 2013, as brands were more focused on building their communities. The top-3 objectives to be present on social media for the brands are Building Brand Awareness/Highlight Brand News, Building a Community and Customer Engagement.

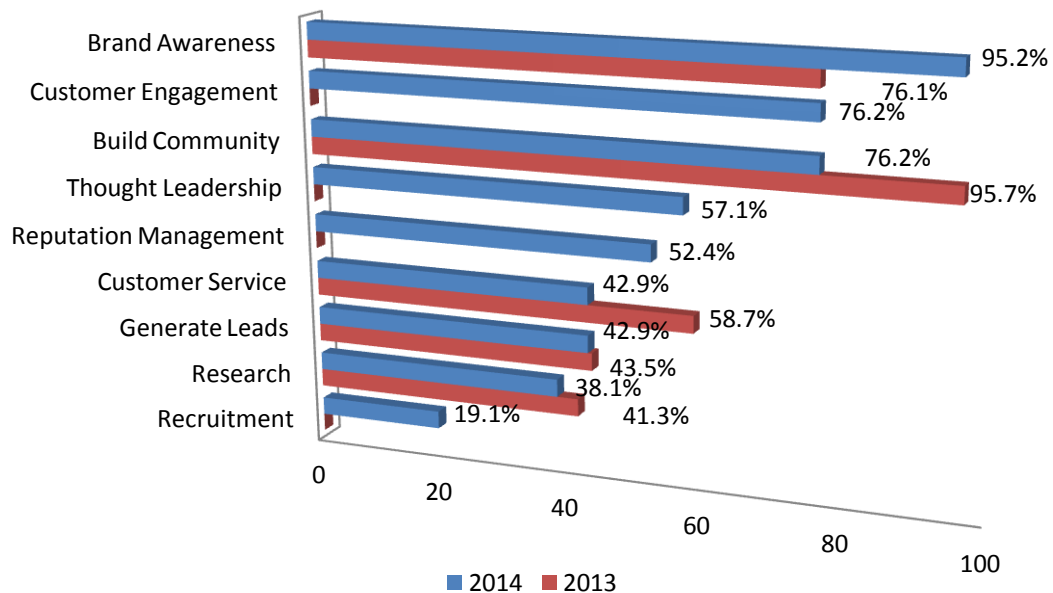


Figure 2.1: Primary objective for being present on Social Media

(Source: Social Media Marketing-India Trends Study, EY, 2015)

Figure depicts the % of marketing budget companies spent on social media platform during the year 2013 and 2014.

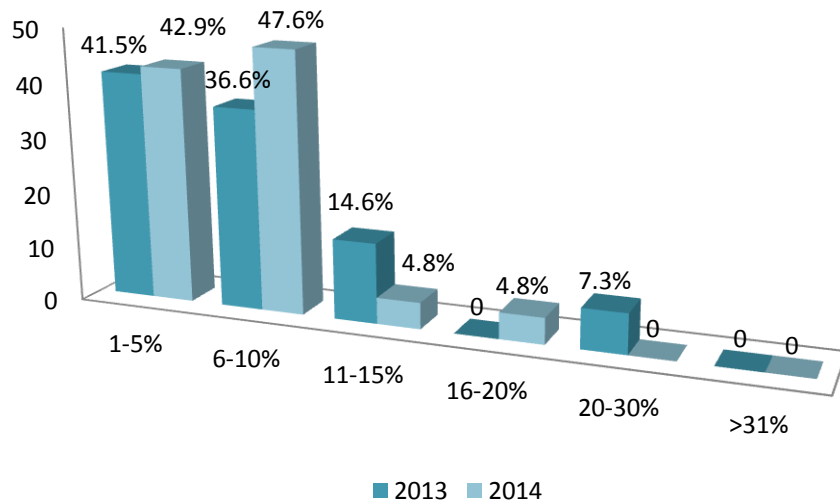


Figure 2.2: Percentage of Marketing Budget spent on Social Media

(Source: Social Media Marketing-India Trends Study, EY, 2015)

Most of the marketers prefer creating a 360° integrated campaign and then extending the mainline campaign on social media. To add to this change in thinking, social media-savvy brands also prefer campaigns exclusively designed for social media. Designing a campaign just for Facebook and Twitter is on a major decline at just 10.53%.

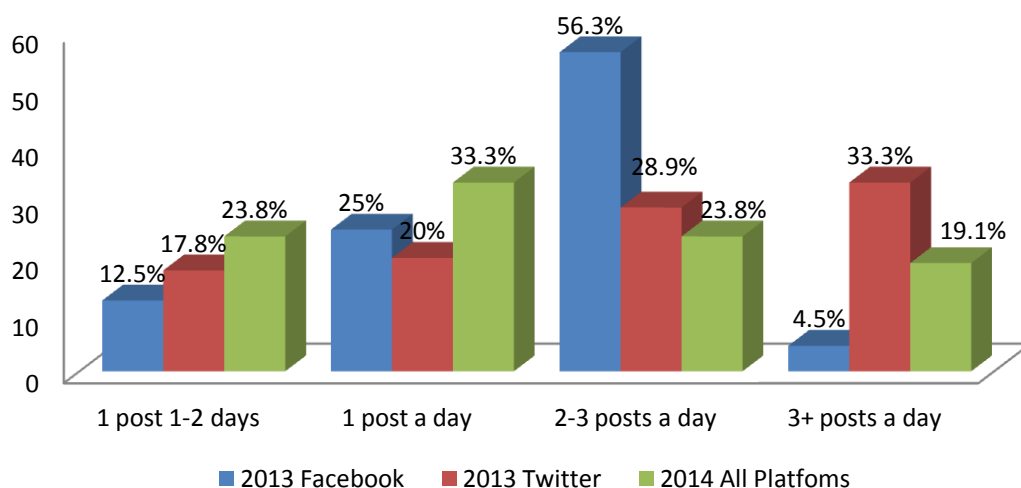


Figure 2.3: Frequency of Updates on Social Media

(Source: Social Media Marketing-India Trends Study, EY, 2015)

Measurement metrics

For measuring the success at social media platform, marketers use various metrics like

1. Customer Engagement - It measures how much and how often others interact with a brand and its content in social media. When a customer or visitor takes the time to like, favourite or comment on something a brand has posted, they're actively engaging with the brand.
2. Brand Sentiment Analysis -It refers to the emotion behind a social media mention. It is a way to measure the tone of the conversation. Sentiment adds important context to social conversations. Sentiment is usually measured as a ratio of positive to negative mentions.
3. Brand Mentions-These are the total number of times a brand or site is mentioned on the webpage or social media network over a particular period of time.
4. Social Reach- It measures the total number of people a brand is able to reach across various social media networks it is present in. It is a measure of range of influence and takes into account shares, retweets, repins, visitors (fans/ followers/subscribers), click-through, referral rates etc
5. Visitor Growth Rate- It measures the change in a brand or company's following on social media networks. Tracking visitor growth rate on each individual network will determine the average rate of increase or decrease in a brands fans or followers over time.
6. Visitor Frequency Rate- It segregates viewers into new and return visitors and measures the frequency with which they visit a brand's page or site over specified period of time. Return visitor numbers further indicate the depth of engagement and strength of a brand's social network.

2.2.Customer Engagement Activities

Customer engagement is an effect, a reaction, a connection, a response and/or an experience of customers with one another, with a company or a brand. The initiative for engagement can be either consumer- or company-led or the medium of engagement can be on or offline.

In the past customer engagement has been generated irresolutely through television, radio, media, outdoor advertising, and various other touch points ideally during peak and/or high trafficked allocations. However, the results of pure customer engagement were hardly

measurable. The only conclusive results of campaigns were sales and/or return on investment. In more recent times the internet has significantly enhanced the processes of customer engagement, in particular, the way in which it can now be measured in different ways on different levels of engagement.

A customer's degree of engagement with a company lies in a continuum that represents the strength of his investment in that company. Positive experiences with the company strengthen that investment and move the customer down the line of engagement.

Engagement is a holistic characterisation of a consumer's behaviour, encompassing a host of sub-aspects of behaviour such as loyalty, satisfaction, involvement, Word of Mouth advertising, complaining and more.

Customer engagement has become a top priority for online retailers, for several reasons. Most compellingly, highly engaged customers are more likely to encourage their friends and family to become customers.

Specific marketing practices involve:

1. Community development: Helping target customers develop their own communities or create new ones. Help consumers engage with one another: Give them content (viral podcasting, video casting, games, v-cards etc.) they can use to engage with one another.
2. Customer self-service: Help them create a customer service FAQ in wiki or blog format. Create a blog where technical support staff and customers can communicate directly.

Example of customer engagement activities:

Britannia Khao, World Cup Jao

The reason this campaign was success is because of the engagement that it managed with it's target audience. Not only teens and school going kids were collecting those packets, senior citizens and women collected them too. The result for Britannia was healthy too. That year, the company's financials show 37% increase in the profits.



2.3. Sentiment Analysis

Sentiment analysis is the field of study that analyzes people's opinions, sentiments, evaluations, appraisals, attitudes, and emotions towards entities such as products, services, organizations, individuals, issues, events, topics, and their attributes. It refers to the general method to extract subjectivity and polarity from text.

Sentiment analysis also known as opinion mining refers to the use of natural language processing, text analysis and computational linguistics to identify and extract subjective information in source materials to extract, identify, or characterize the sentiment content of a text unit. It is widely applied to reviews and social media for a variety of applications, ranging from marketing to customer service. . (Wikipedia, 2016)

Opinion mining can be useful in several ways. It provides companies with a means to estimate the extent of product acceptance and to determine strategies to improve product quality. The sentiment found within comments, feedback or critiques provide useful indicators for many different purposes. It facilitates policy makers to analyse public sentiments with respect to policies or public services. (Wikipedia, 2016)

It can help marketers evaluate the success of an ad campaign or new product launch, determine which versions of a product or service are popular and identify which demographics like or dislike particular product features. For example, a review on a website might be broadly positive about a digital camera, but be specifically negative about how heavy it is. Being able to identify this kind of information in a systematic way gives the vendor a much clearer picture of public opinion than surveys or focus groups do, because the data is created by the customer.

Sentiment analysis evaluates statements found across various social platforms to determine whether they are positive or negative with respect to a particular brand. A firm might track sentiment analysis over time to:

1. determine whether their actions improve or damage sentiment
2. track brand reputation
3. test how marketing efforts affect attitudes toward the brand
4. attitudes toward new products

2.4. Approaches/Techniques used in Sentiment Analysis

There are three different approaches/techniques used in sentiment analysis

1. Knowledge based Approach

Knowledge-based techniques classify text by affect categories based on the presence of unambiguous affect words such as happy, sad, afraid, and bored. Some knowledge bases not only list obvious affect words, but also assign arbitrary words a probable “affinity” to particular emotions.

3. Statistical Approach

Statistical methods leverage on elements from machine learning such as latent semantic analysis, support vector machines, "bag of words"

4. Hybrid Approach

Hybrid approaches leverage on both machine learning and elements from knowledge representation in order to detect semantics that are expressed in a subtle manner

Sentiment Analysis can be investigated at three different levels:

5. Document Level

The task at this level is to classify whether a whole opinion document expresses a positive or negative sentiment. This level of analysis assumes that each document expresses opinions on a single entity (e.g., a single product). For example, given a product review, the system determines whether the review expresses an overall positive or negative opinion about the product

6. Sentence Level

The task at this level goes to the sentences and determines whether each sentence expressed a positive, negative, or neutral opinion. Neutral usually means no opinion. This level of analysis is closely related to subjectivity classification which distinguishes sentences (called objective sentences) that express factual information from sentences (called subjective sentences) that express subjective views and opinions

7. Entity and Aspect Level

Aspect level performs finer-grained analysis. Aspect level was earlier called feature level. It is based on the idea that an opinion consists of a sentiment (positive or negative) and a target (of opinion). An opinion without its target being identified is of limited use.

There are two different type of opinion i.e, regular opinion and comparative opinion

A regular opinion expresses a sentiment only on a particular entity or an aspect of the entity, e.g., *“Coke tastes very good,”* which expresses a positive sentiment on the aspect *taste* of Coke.

A comparative opinion compares multiple entities based on some of their shared aspects, e.g., *“Coke tastes better than Pepsi,”* which compares Coke and Pepsi based on their tastes (an aspect) and expresses a preference for Coke

In the context of marketing, sentiment analysis is commonly used for measuring social media performance. Marketers belief that sentiment analysis have reaped benefits for their companies. Better understanding of the perception of the brand, effective management of customer queries and effective resolution on requests are some of the major benefits that organizations have realised by combining social listening tools with social media marketing. The same is depicted in the bar chart.

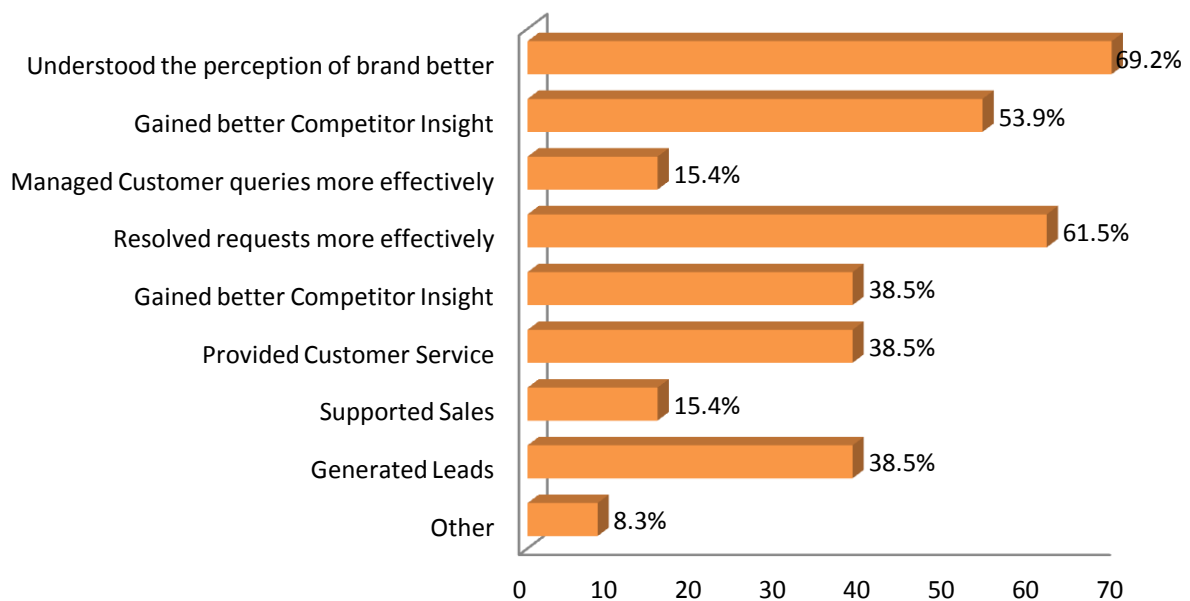


Figure 2.4: Impact on Brand Sentiment after using Social Listening Tools
(Source: Social Media Marketing-India Trends Study, EY, 2015)

INDUSTRY PROFILE

The Indian FMCG sector is the fourth largest sector in the economy. The market size of FMCG in India is estimated to grow from US\$ 30 billion in 2011 to US\$ 74 billion in 2018. The sector has grown at an annual average of about 11 per cent over the last decade. The overall FMCG market is expected to increase at (CAGR) of 14.7 per cent to touch US\$ 110.4 billion during 2012-2020, with the rural FMCG market anticipated to increase at a CAGR of 17.7 per cent to reach US\$ 100 billion during 2012-2025. Food products is the leading segment, accounting for 43 per cent of the overall market. Personal care (22 per cent) and fabric care (12 per cent) come next in terms of market share. (IBEF, 2016)

It has a strong MNC presence and is characterised by a well established distribution network, intense competition between the organised and unorganised segments and low operational cost.

Rural areas expected to be the major driver for FMCG, as growth continues to be high in these regions.

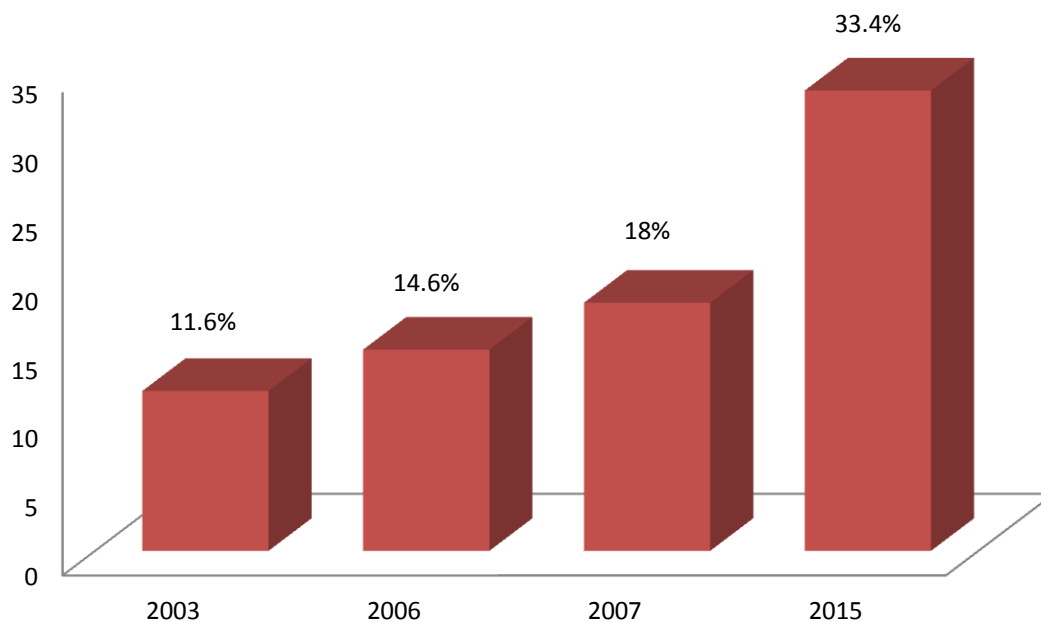


Figure 3.1: Size of FMCG market in India

(Source: Statista.com, 2016)

3.1. Major players in FMCG sector, India

Hindustan Unilever Limited

Hindustan Unilever Limited (HUL) is an Indian consumer goods company based in Mumbai, Maharashtra. It is owned by Anglo-Dutch company Unilever which owns a 67% controlling share in HUL as of March 2015 and is the holding company of HUL. HUL's products include foods, beverages, cleaning agents, personal care products and water purifiers.

HUL was established in 1933 as Lever Brothers and, in 1956, became known as Hindustan Lever Limited, as a result of a merger between Lever Brothers, Hindustan Vanaspati Mfg. Co. Ltd. and United Traders Ltd.

Hindustan Unilever's distribution covers over 2 million retail outlets across India directly and its products are available in over 6.4 million outlets in the country. As per Nielsen market research data, two out of three Indians use HUL products. (Hindustan Unilever. (2016).)

P&G India

P&G is one of the largest and amongst the fastest growing consumer goods companies in India. Established in 1964, P&G India now serves over 650 million consumers across India. Its presence spans across the Beauty & Grooming segment, the Household Care segment as well as the Health & Well Being segment, with trusted brands that are household names across India. These include Vicks, Ariel, Tide, Whisper, Olay, Gillette, Ambipur, Pampers, Pantene, Oral-B, Head & Shoulders, Wella and Duracell.

P&G operates under three entities in India - two listed entities "Procter & Gamble Hygiene and Health Care Limited" and 'Gillette India Limited', as well as one 100% subsidiary of the parent company in the U.S. called 'Procter & Gamble Home Products. (P&G India, 2016)

Dabur

Dabur (Dabur India Ltd) is the fourth largest fast-moving consumer goods (FMCG) company in India with consolidated Revenues of over INR 7,800 Crores and Market Capitalisation of over INR 46,600 Crore. It was founded in 1884 by Dr. S. K. Burman, a physician in West Bengal, to produce and dispense Ayurvedic medicines. (Dabur. 2016)

Dabur has a portfolio of over 381 trusted products spread across 21 categories and over 1,000 SKUs. Vatika, Hajmola, Real, Fem being master brand of all the brands.

3.2. Customer Engagement Practices in FMCG

Cadbury

With a focus to make everyday a celebration, Cadbury Dairy Milk went a long way to establish itself on social media platform. Cadbury came up with various campaigns like ‘Pappu Pass HoGya’, ‘Kuch Meetha Ho Jaaye’ proposition followed by the ‘Shubh Aarambh’ one.



Figure 3.2 Facebook Page of Cadbury Dairy Milk

(Source: Facebook, 2016)

Maggi

Maggi came up with the ‘Meri Maggi’ concept and reached out to the nation widely. The noodle brand created an app on its Facebook page ‘My own Maggi pack’ where fans can upload their photo and put in a message, and the app will create an image of the Maggi pack with it.



Figure 3.3 Facebook Page of Meri Maggi
(Source: Facebook, 2016)

Nescafe India

Nescafe India Facebook page's communication is based on the 'Shake it, Make it' campaign. Its online campaign and activities keeps a major consumer base hooked to the page. Nescafe on Pinterest works a lot in creating an interest in consumer's minds regarding the brand.



Figure 3.4 Facebook Page of Nescafe
(Source: Facebook, 2016)

Table depicts the comparative report showing how food & beverage segment use social media platform Facebook. Frequency of posts per day on Facebook by Pepsi is higher than that of Coca Cola

Food and Beverages	Facebook		
	Name	Likes	People Taking About
Coca Cola	97522054	49551	0.2
Pepsi	35167453	67576	0.6

Kissan	569534	1696	0.2
Biselri	550107	12083	1.2

Table 3.1 Comparison of Social Media Usage by Food and Beverages companies

(Source: ETRetail, 2016)

3.3 Company Profile

3.3.1 Pepsi

PepsiCo entered India in 1989 and has grown to become one of the largest MNC food and beverage businesses in India. PepsiCo India has been consistently investing in the country and has built an expansive beverage and snack food business supported by 37 beverage bottling plants and 3 food plants. PepsiCo India’s diverse portfolio includes iconic brands like Pepsi, Lay’s, Kurkure, Tropicana 100%, Gatorade and Quaker.

Customer Engagement Campaign

“Win every minute with Pepsi this Pepsi IPL Season” was launched for promotion and consumer engagement. 10 digit alphanumeric code printed under the label of pet bottle and 7digit code under crown of returnable glass bottle needs to be sent to a service number and customer may get chance to win merchandise.



Figure 3.5 Screenshot of Win every minute with Pepsi Campaign

(Source: PepsiCo India, 2016)

Pepsi on Social Media

Facebook post with hashtag #PepsiMoji was promoted through various campaigns, screenshot of one of the posts shows that consumers' attitude for the campaign was positive as the comments feature keywords like "cool, love Pepsi, #Pepsimoji".

 **Pepsi with Deepak Choudhary and 8 others.**
28 Apr at 1:02p.m. • 🌐

42 degree ke liye 38. Here are 38 different ways to beat the hottest day of the month. Which one are you grabbing today? <http://bit.ly/PepsiBigBasket>



   27k

84 comments 27 shares



Mohd Saddam

I love pepsi....!

nD n0w pepsi came in biG basket...!

Sat at 4:23 p.m. • Like • Reply



Abid Abid

very hot I drink today in same flavuaor

30 Apr at 1:42 a.m. • Like • Reply



Ishan Agarwal

#PepsiMoji #GadgetGeek! Love my

gadgets and Pepsi!! Here's my entry!! 😊



Yesterday at 6:03 p.m. • Like • Reply



Vinod Sapra

Today is very hot day so I m drinking

Pepsi..cool..cool.....#PepsiMoji

Figure 3.6 Screenshot of Facebook post by Pepsi
(Source: Facebook, 2016)

3.3.2 Coca-Cola

The Coca-Cola Company (TCCC) is the world's largest beverage company. The Company has the strongest portfolio of brands in the non alcoholic beverage industry. Coca-Cola India, is one of the country's leading beverage companies, offering a range of healthy, safe, high quality, refreshing beverage options to consumers. Coca-Cola, Coca-Cola Zero, Diet Coke, Thums Up, Fanta, Fanta Green Mango, Limca, Sprite, Sprite Zero, VIO Flavored Milk, Maaza, Minute Maid range of juices, Georgia and Georgia Gold range of hot and cold tea and coffee options, Kinley and Bonaqua packaged drinking water, Kinley Club Soda and BURN energy drink are the beverages brands of Coca-Cola India. Thums Up and Sprite – being the top selling sparkling beverages.

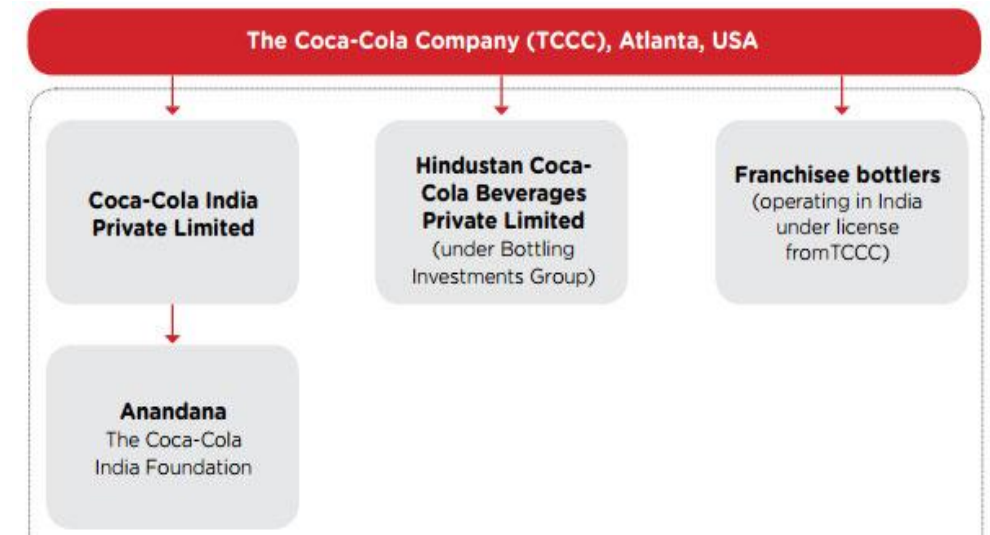


Figure 3.7 The Coca-Cola System in India

(Source: Coca-Cola, 2016)

Customer Engagement Campaign

Coke creates phone booth that accepts bottle caps instead of coins for South Asian labourers working in UAE to call home. “Hello Happiness Phone Booth” – a special booth that accepts Coca-Cola bottle caps instead of coins for a free 3-minute international phone call.

Another famous campaign by Coca Cola was “Sath Khao Khusiyan Badhao” The company initiated campaigns in campus and restraint based on the same theme and these initiatives were supported by digital campaigns.



Figure 3.8: Screenshot of Coca-Cola Happiness Campaign
(Source: Youtube, 2016)

Coca-Cola on Social Media

TV Commercial created by Coca-Cola featuring Bollywood actor Sidhath Malhotra was not liked much by the audience as per the top comments. The screenshot of Facebook shows that inspite of 44K reactions (mostly positive), people's opinion about the ad was towards negative. As comments shows disappointment of consumers as keywords or phrases used were "bad feeling, worthless ad". The reaction for the particular posts includes like, laugh and love.



Coca-Cola

11 Mar at 3:11 p.m. • 🌐

Watch how Coca-Cola makes the moment special in this TVC featuring Sidharth Malhotra.
#TasteTheFeeling



👍❤️😂 44k

812 comments 2K shares 1.5M Views

👍❤️😂 44k



Ankita Chaudhary

Come on, Coke! Didn't expect such a wortless ad from you guys. People look forward to watching your ad which is so rare & you do THIS. 😏

19 Mar at 11:49 a.m. • Like • 👍 3 • Reply



DeVesh Chaudhary

No one installs a camera in fridge. And i haven't come across any general store till now which has moveable cameras. 😏

21 Mar at 10:35 p.m. • Like • 👍 3 • Reply

[View 1 previous reply](#)



DeVesh Chaudhary Saurabh Singh I am n...



Mayukh Hazarika

What a bad feeling. You guys killed just killed open happiness, something that everyone could connect to, irrespective of a person drinking coke or not.

20 Mar at 11:40 a.m. • Like • 👍 2 • Reply

Figure 3.9 Screenshot of Facebook Post by Coca-Cola

(Source: Facebook, 2016)

Line graph represents the comparative view of “people talking about on FB” for Pepsi and Coca-Cola. The comparison is for 7 days.

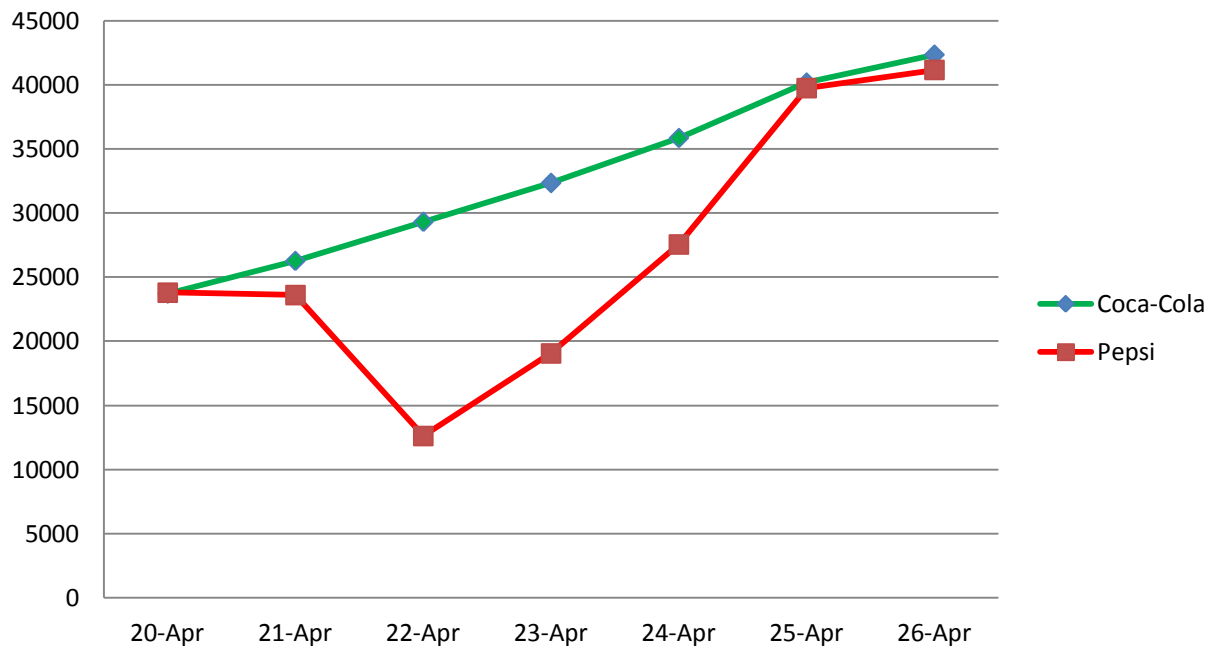


Figure 3.10 Comparative views of “people talking about on FB”

(Source: ETRetail, 2016)

METHODOLOGY

4.1. Significance and Scope of Study

The significance of the study is to examine the importance of brand sentiment analysis. The focus is to analyse various posts and campaigns initiated by Pepsi and Coca-Cola on Social Media Platform like Facebook.

The purpose of this study is to identify elements of customer service that provide positive experiences to customers as well as to identify service processed and features that require further improvements.

The study involves secondary research, study of campaign run by Pepsi and Coca-Cola on their respective Facebook pages by analysing the comments on the posts and using social media listening tools. Based on the insights from the data the success of the social media campaign run by Pepsi and Coca-Cola on Facebook was evaluated.

4.2. Research Design

Research design specifies a framework of conducting the research work. Kozinets (2009) proposed two options for data collection: collecting online posts for sentiment analysis, or observing group interactions occurring within online community and taking notes from the observer's perspective.

To identify customer sentiment about campaign of two food and beverage companies, publicly shared Facebook post were collected and processed.

4.3. Research Technique

Sentiment analysis was conducted by analysing different type of content posted by companies on their Facebook page and a set of commonly used set of positive, negative and neutral words were identified.

The steps followed for the project:

- 1 For the purpose of study, online posts were collected using tool facepager and is exported into csv format
- 2 The data is cleaned in excel

- 3 Cleaned data is processed using Semantria for excel
- 4 Visualization of the processed content is done using Tableau
- 5 Word dictionary is created which depicts the words or the phrases used frequently and are categorized as positive and negative words.

4.4.Population

Population for the purpose of research work includes all the males and females who follows the company Facebook page and the entire friend list or followers of these users

4.5.Sample Size

Sample size includes the active users who posted content on the various posts of the brands.

4.6.Data Collection

Data was collected using application facepager. The unstructured content is cleaned and processed for further analytical purpose.

Secondary Research was conducted to understand and learn about various concepts like sentiment analysis, social media analytics, and online brand community and customer engagement practices.

The project involved the study of published research papers in the area of sentiment analysis and opinion mining. Also, it required study of various published reports.

4.7. Research Tools

The Research Tools used for conducting the study includes: Facepager, Microsoft Excel, Semantria for Excel, Tableau and DBbrowser for SQLite

- 1. Facepager** - Facepager was made for fetching public available data from Facebook, Twitter and other JSON-based APIs. All data is stored in a SQLite database and may be exported to csv. The data was extracted for Pepsi and Coca-Cola by providing username provided in the URL which act as objected for Facepager.
- 2. Microsoft Excel** -Microsoft Excel is a spreadsheet developed by Microsoft for Windows, Mac OS X, Android and iOS. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. The data exported to CSV format is cleaned using Microsoft Excel

3. **Semantria for Excel** - Semantria for Excel is developed by Lexalytics. It provides fast and accurate categorization of data into the positive, negative or neutral tones embedded in content. It attaches sentiment score to each theme, phrase and entity. Semantria plugin was installed to analyse the sentiment of consumer towards the social media campaign and the brand
4. **Tableau** - Tableau, developed by Tableau Software, is software used for business intelligence and analytics. It produces family of interactive data visualization based on data. The structured result produced after processing data using Semantria was analysed in Tableau.
5. **DBbrowser for SQLite** - DB Browser for SQLite is an open source tool to create, design, and edit database files compatible with SQLite. The database created by facepager was queried for various purposes.

DATA ANALYSIS AND RESULTS

Sentiment analysis was incorporated by analysing posts of various kinds posted by companies on their Facebook page. Content posted by company on their respective pages can be classified as of type- photo, video, status, link and event. Post of each category was selected and analysis was performed for two food & beverage company. Analysis was conducted out for Pepsi and Coca-Cola. The content of the social media campaigns collected was cleaned and structured and processed to produce results. Frequently used words were classified as positive and negative. Also, frequently used entities were identified.

5.1. Pepsi

Pepsi was able to grab the attention of its targeted audience by posting the content frequently and most of the content posted uses hash tag and was related to contests. The analysis of various posts shows that customer engagement was done very well and can also gain no of followers and likes in future.

5.1.1. Pepsi-Post 1

Figure 5.1: Screenshot of Post Analysed- Post-Pepsi 1

(Source: Facebook, 2016)

The post analysed was of the type- photo; it received 73K no of likes and was shared by 154 users. Figure 5.2 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	User Comments
0.510517299	positive	#PepsiMoji i hope to win. I love Pepsi
0.600000024	positive	#PepsiMoji I love Pepsi
0.522114933	positive	Don't worry be happy, drink Pepsi and feel good
0.470775872	positive	Drink Pepsi feeling happy nd win d match virat
0.465775877	positive	#PepsiMoji I HOPE ME WIN AND MEET VIRAT
0.441551745	positive	won with Pepsi..hahahaaha
0.600000024	positive	#PepsiMoji..i love Pepsi
0.441551745	positive	won with Pepsi
0.650000036	positive	excellent..outstanding...lovely Pepsi
0.600000024	positive	love virat
0.514800012	positive	best of luck to u and ur team for next match against west indies
0.150000006	neutral	Loss the game but you awesome
0.490000001	positive	Best wishes to one and all #PepsiMoji
-0.224920005	negative	Sir.. Can i get the same offer from you to meet #MSD...
-0.050000012	negative	bad for health
-0.490000001	negative	damages liver
0.52125001	positive	nice nicely
0.5	positive	#PepsiMoji feeling happy
0.5	positive	Nice pic virat kohli superrrrrr
0.5	positive	Good
-0.490000001	negative	its unhealthy
0.441551745	positive	won with Pepsi
-0.600000024	negative	Nonsense
-0.600000024	negative	Pepsi is bad

Figure 5.2 Sentiment Score and Polarity for Users Comment- Pepsi- Post 1

(Source: Compiled by author, 2016)

Figure 5.3 depicts the average value of positive and negative value of comments. Tableau was used to plot the box plot. The plot represents that consumers has neutral opinion but with alignment towards positivity for the post. The post has average sentiment value of 0.095.

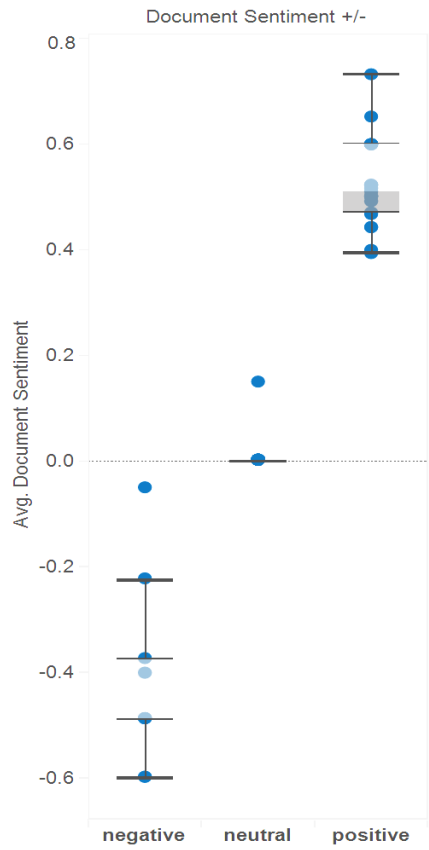


Figure 5.3 Box Plot for the analysed post - Pepsi- Post 1

(Source: Compiled by the author, 2016)

Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post. Table 5.1 represents the keywords as per the sentiment category.

Sentiment	Keywords
Positive	love, win, hope, win, won, best, good, happy, awesome
Negative	Bad, unhealthy, nonsense, damages

Table 5.1 Classification of keywords as positive and negative sentiment

(Source: Compiled by the author, 2016)

Inference- The consumers had slightly positive opinion about the campaign and posted their selfies with Pepsi bottle in the comments. #PepsiMoji was used with along with the photos posted. Although few consumers did not find it good, overall sentiment was positive.

5.1.2 Pepsi-Post 2

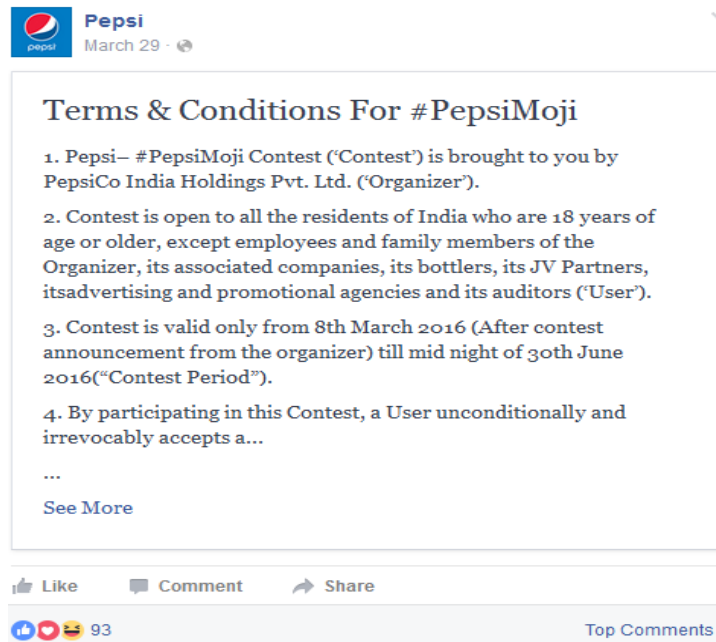


Figure 5.4 Screenshot of Post Analysed - Pepsi- Post 2
(Source: Facebook, 2016)

The post analysed was of the type- status; it received only 93 no of likes and was shared by only 3 users. Figure 5.5 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	Comments
0.5	positive	feeling happy with Pepsi
0.600000024	positive	#SayItWith #PepsiMoji love #Pepsi with #Pepsi..
0.549465537	positive	Pepsi mojo what a nice game i hope i win a chance and have fun with virat kohli
0.600000024	positive	#Pepsi I love it #PepsiMoji. my first selfie >>>>>ooo yessss abhhhhiiiiii"
0.600000024	positive	#PepsiMoji love
0.5	positive	Yo Pepsi is #feeling_ happy
0.441551745	positive	#Pepsimoji drink Pepsi and win

Figure 5.5 Sentiment Score and Polarity for Users Comment- Pepsi- Post 2
(Source: Compiled by the author, 2016)

The box plot represented in figure 5.6 indicates that consumers had positive opinion for the post. The sentiment value for the post analysed was 0.54. No negative keywords were identified.

Frequently used phrases and keywords used in comments were identified and classified as positive based on the opinion of consumer on the post. Table 5.2 represents the keywords as per the sentiment category.

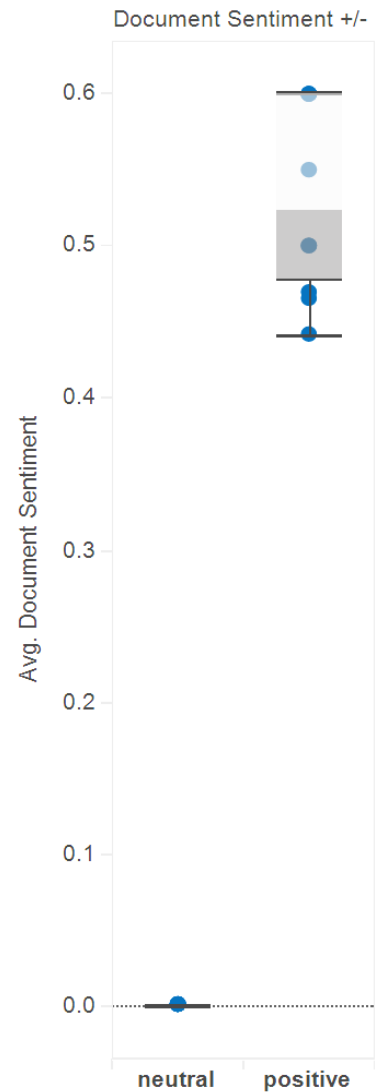


Figure 5.6 Box Plot for the analysed post- Pepsi- Post 2

(Source: Compiled by the author, 2016)

Sentiment	Keywords
Positive	love, win, hope, win, won, best, good, happy, awesome

Table 5.2 Classification of keywords as positive and negative sentiment

(Source: Compiled by the author, 2016)

Inference- The consumers had positive opinion about the campaign and posted their selfies with Pepsi bottle in the comments. Comments showed excitement towards the campaign. It can be inferred that contest would be able to attract and engage customers.

5.1.3. Pepsi-Post 3



Figure 5.7 Screenshot of Post Analysed- Pepsi- Post 3
(Source: Facebook, 2016)

The post analysed was of the type- video; it received 6.7K likes and was shared by 800 users. It received 439K views. Figure 5.8 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	Comments
-0.584438503	negative	confusing advertisemnt
0.490000001	positive	This always make me smile
-0.600000024	negative	bad advertisement
-0.600000024	negative	nonsense
0.564999998	positive	loved it
0.800000012	positive	work is not everything.. Have fun! ðŸ˜ƒ
-0.75	negative	Poison is out.
0.588333368	positive	I liked cool can
-0.600000024	negative	nonsense
0.600000024	positive	Nice ad .. super
0.564999998	positive	loved it
0.5	positive	nice song

Figure 5.8 Sentiment Score and Polarity for Users Comment- Pepsi- Post 3
(Source: Compiled by the author, 2016)

Figure 5.9 depicts the average value of sentiment of comments. Even though positive comments were more as compared to negative in number, presence of almost equal number of neutral comments diluted the positive comments. Also, the phrases and the words used in negative comments were more negative as compared to the positive comments. Therefore, consumers have slightly negative sentiment towards the post as also depicted by box plot. The post has sentiment value of -0.09.

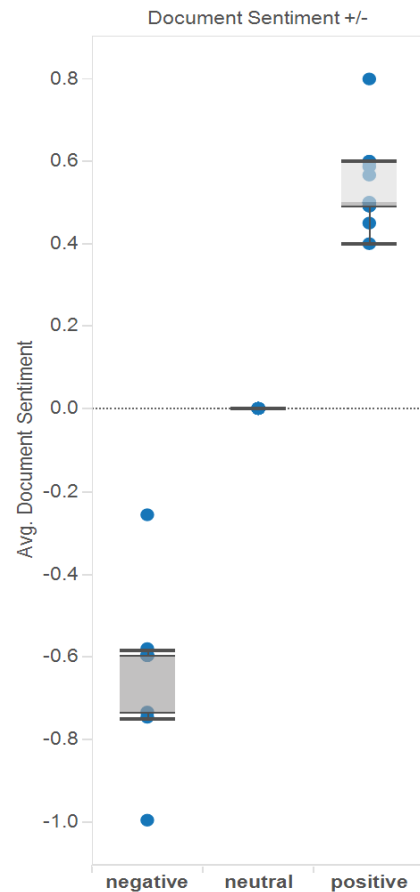


Figure 5.9 Box Plot for the analysed post- Pepsi- Post 3

(Source: Compiled by the author, 2016)

Table 5.3 represents keywords categorized as per the sentiment category. Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post.

Sentiment	Keywords
Positive	love, enjoy, nice, super
Negative	Nonsense, poison, bad, not good, confusing

Table 5.3 Classification of keywords as positive and negative sentiment

(Source: Compiled by the author, 2016)

Inference- The consumers had slightly negative opinion about the campaign.

5.1.4. Pepsi-Post 4



Figure 5.10 Screenshot of Post Analysed- Pepsi- Post 4
(Source: Facebook, 2016)

The post analysed was of the type- link; it received 32K likes and was shared by 53 users. Figure 5.11 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	User Comments
0.6	positive	I love u Ranveer....muuuuaah!
0.441552	positive	won with Pepsi
-0.6	negative	Pepsi is bad
0.565	positive	loved it
0.441552	positive	won with Pepsi
-0.2	negative	Boring
1.3986	positive	super hero
-0.7	negative	I hate Pepsi
0.441552	positive	won with Pepsi

Figure 5.11 Sentiment Score and Polarity for Users Comment- Pepsi- Post 4
(Source: Compiled by the author, 2016)

The consumers had positive sentiment towards the post. The value of post sentiment equals 0.15. The consumers communicated on the post mainly regarding Bollywood actor Ranbir Kapoor, Indian Cricketer Virat Kohli and victory of Indian Cricket team. Phrases like “Pepsi change the game”, Pepsi ahha” were commonly used.

Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post. Table 5.4 represents the keywords as per the sentiment category.

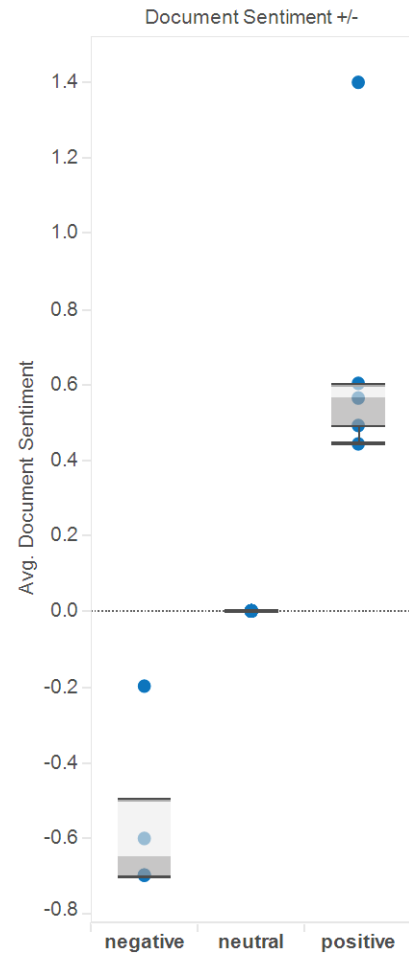


Figure 5.12 Box Plot for the analysed post- Pepsi- Post 4
(Source: Compiled by the author, 2016)

Sentiment	Keywords
Positive	Won, love, hero, cute, enjoy, nice
Negative	Hate, boring, bad

Table 5.4 Classification of keywords as positive and negative sentiment
(Source: Compiled by the author, 2016)

Inference-The positive attitude towards the post was primarily due the contest featuring Bollywood actor Ranbir Kapoor and chance to meet Indian cricketer Virat Kohli. The comments indicate the love for Ranbir or Virat more than that towards the brand Pepsi. Association of Pepsi with Indian Cricket team since quite a long team, old jingles “Pepsi change the game” and “Pepsi ahaa” featured in comments, this indicates followers of Pepsi, associates the brand with cricket.

5.1.5 Pepsi- Overall Analysis

Pepsi had been able to manage the promotions and campaigns very well; the reason for the same being its association with Indian Cricket team and the no of contests and customer engagement activities. Pepsi keeps the campaign alive by posting content about the same campaign for few days continuously in various forms. Introduction of new product like mini can or pet bottle with emoji label was done through various activities and contests. This promotes the sales of the new product, target audience increases as friends of the followers see the activity in their respective Facebook feeds.

On analysis of four posts of Pepsi, posted during the month of March, the overall performance in engaging followers of Pepsi appears to be good. The attitude of consumer remained positive in maximum cases and negative only in case. The comprehensive sentiment calculated comes out to be slightly positive with a value of 0.022.

Entities that occurred frequently includes- Pepsi, PepsiCo, #PepsiMoji, #Pepsi, #SayitWith. Figure 5.12 depicts the usage of these entities in positive, negative or neutral comments and its sentiment value.

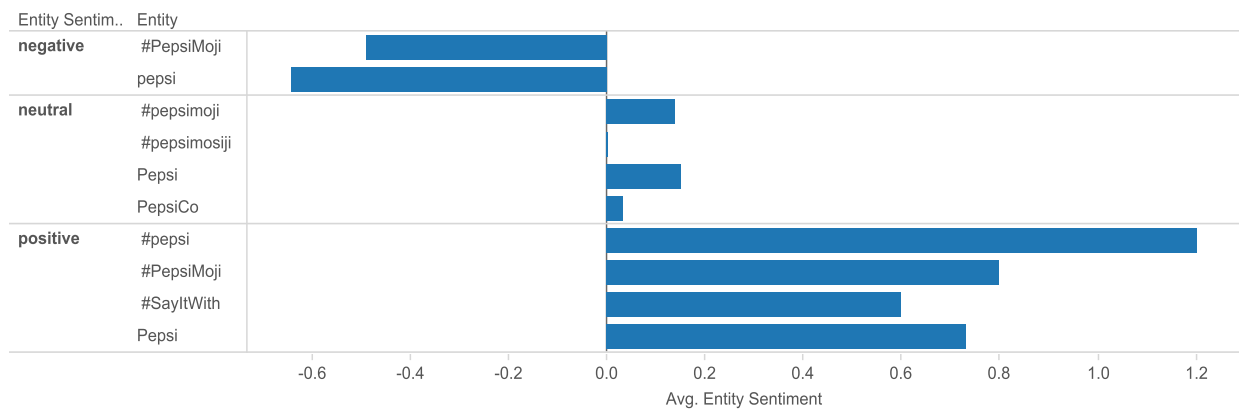


Figure 5.13 Average Entity Sentiments - Pepsi

(Source: Compiled by the author, 2016)

Figure 5.13 categorize phrases and words as positive, negative or neutral with average sentiment value. It represents the degree to which the word has affected the polarity.

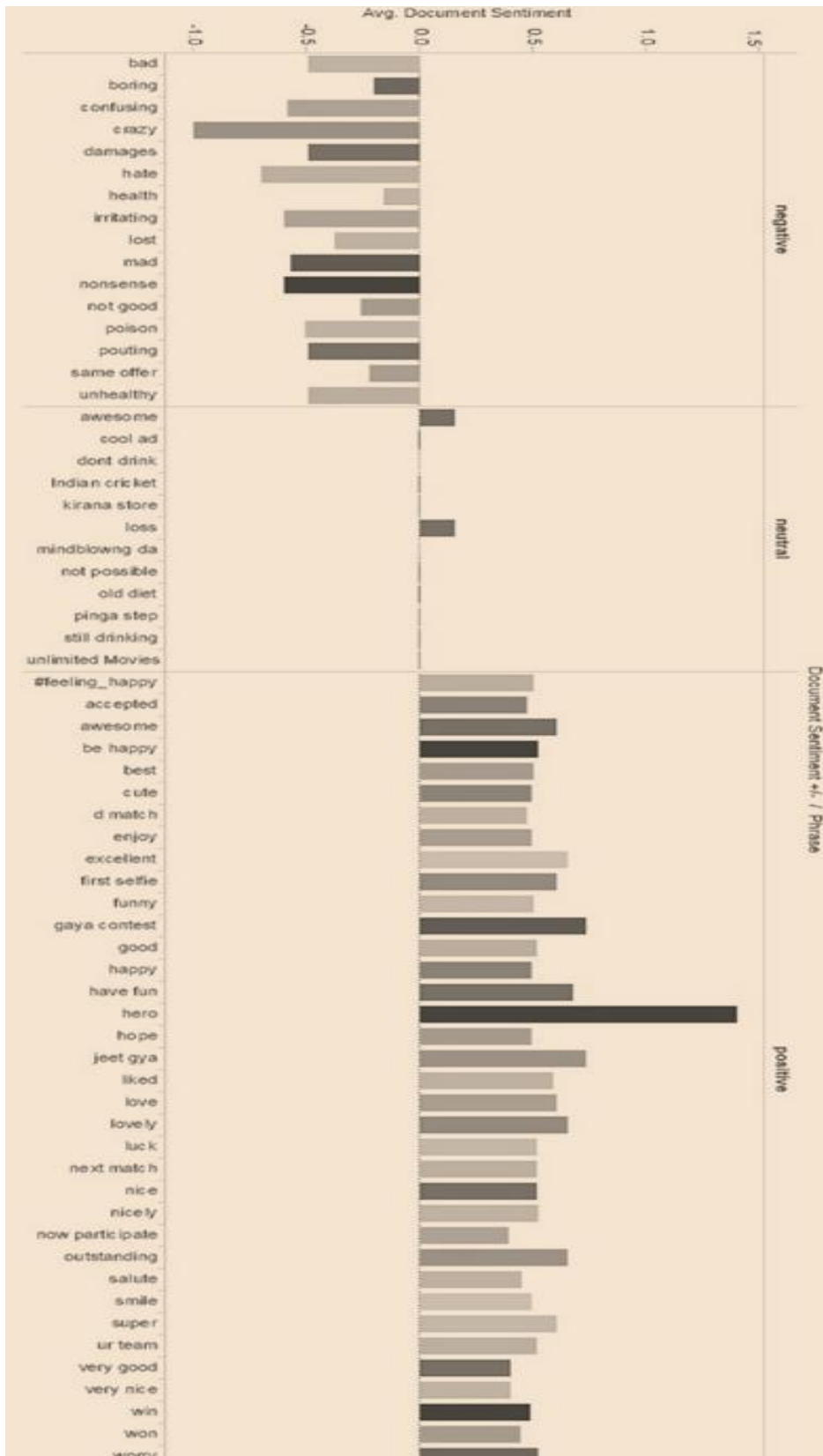


Figure 5.14 Sentiments of Keywords- Pepsi

(Source: Compiled by the author, 2016)



Figure 5.15 Word Cloud for Pepsi- Pepsi

(Source: Compiled by the author, 2016)

Figure 5.15 represents Word Cloud; it indicates the positive, negative and neutral phrases. The size indicates the average value of phrase sentiment and colour indicates the polarity, green being the positive and red being the negative.

5.2 Coca-Cola

Coca-Cola was able to seize largest no of followers in food and beverage sector but fails to interact and create appreciative content. Various posts analysed indicates the negative attitude towards the brand.

5.2.1 Coca-Cola-Post 1



Figure 5.16 Screenshot of post analysed- Coca-Cola- Post 1

(Source: Facebook, 2016)

The post analysed was of the type- link; it received 147 likes and was not shared by any user. Figure 5.17 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	User Comments
-0.050000012	negative	It is bad to health
-0.699999988	negative	hate coca cola
-0.050000012	negative	bad for health
0	neutral	inferior quality
-0.490000001	negative	damages liver
0.5	positive	nice event
0.5	positive	good
-0.600000024	negative	nonsense

Figure 5.17 Sentiment Score and Polarity for Users Comment- Coca-Cola- Post 1

(Source: Compiled by the author, 2016)

The opinion of consumers was depicted to be negative even though 147 people liked the post, 48 people showed interest in the event and 28 accepted the invitation for the same. The negative opinion is represented by box plot. The comments indicate that consumers find Coca-Cola harmful for the health.

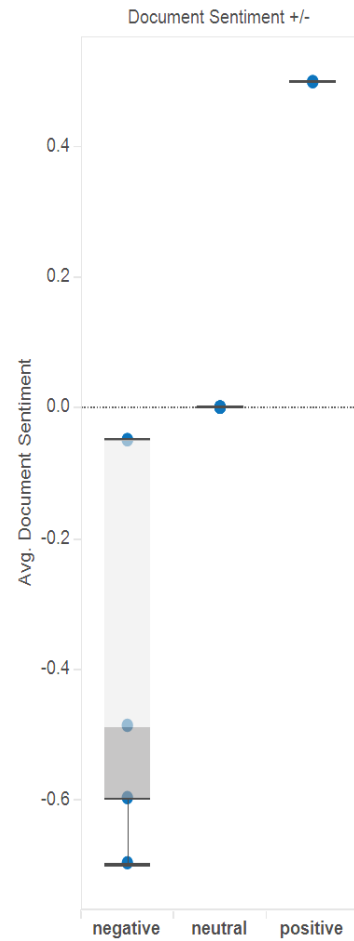


Figure 5.18 Box Plot for the analysed post-Coca-Cola- Post 1

(Source: Compiled by the author, 2016)

Table 5.5 represents keywords categorized as per the sentiment category. Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post.

Sentiment	Keywords
Positive	Nice event, good
Negative	bad, hate, inferior, damages, nonsense, fake company

Table 5.5 Classification of keywords as positive and negative sentiment

(Source: Compiled by the author, 2016)

Inference

The negative attitude of consumers towards the post was mainly related to health concerns. The comments with negative polarity indicate the displeasure of consumers towards the brand and the product. Only few comments were related to the event and those were positive. But,

the final effect on calculation of sentiment portray negative attitude although it was not directly related to the event hosted by the company.

5.2.2 Coca-Cola-Post 2



Figure 5.19 Screenshot of post analysed- Coca-Cola- Post 2

(Source: Facebook, 2016)

The post analysed was of the type- video; it received 77K likes and was shared 4493 times. No of views for the video was 3M. Figure 5.19 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	User Comments
-0.768	Negative	And finally Death with Coca Cola.
0.542905	Positive	drinks coca cola to be happy
-0.52	Negative	Stop rusting with coca cola
0.6	Positive	I love coca cola with ice my favourite
-0.75	Negative	poison it is
0.5	Positive	Nice feeling with coca cola
-0.55	Negative	I don't like coca cola my family's enemy
0.6	Positive	I love coca colA with ice
0.5	Positive	Nice feeling with Coca Cola...
0.732	Positive	coca cola is just awesome
-0.55	Negative	I don't like coca cola its myfamilys enemy
0.6	Positive	I love coca colA with ice

Figure 5.20 Sentiment Score and Polarity for Users Comment- Coca-Cola- Post 2

(Source: Compiled by the author, 2016)

The box plot indicates post had negative sentiment, the value of sentiment is -0.026. The number of positive and neutral comments was almost same. Consumers did not like the advertisement, out of 77K likes, approx 140 belongs to angry reaction.

Table 5.6 represents keywords categorized as per the sentiment category. Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post

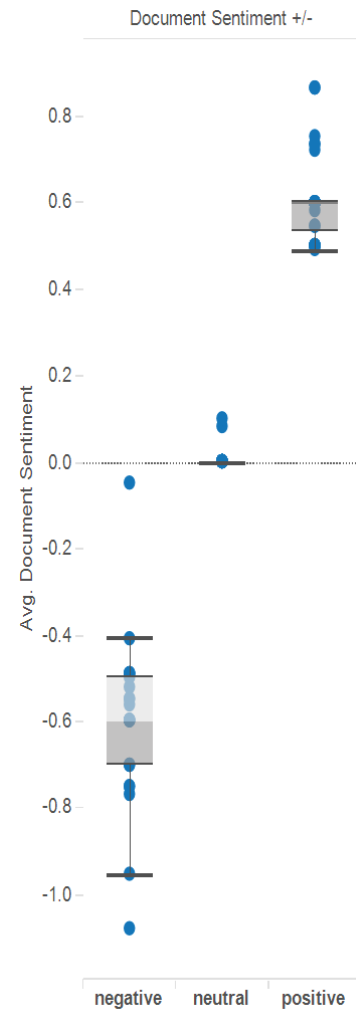


Figure 5.21 Box Plot of analysed post- Coca-Cola- Post 2
(Source: Compiled by author, 2016)

Sentiment	Keywords
Positive	Love, nice, favourite, happy, good, friendship
Negative	Death, hate, unhealthy, poison, enemy, bad, awful

Table 5.6 Classification of keywords as positive and negative sentiment
(Source: Compiled by the author, 2016)

Inference- The brand was not able to engage the customer in a favourable way, the feelings shared by the consumers were mostly negative and indicates the disapproval of the product as most of the comments were related to health issues created on consumption of Coca-Cola.

5.2.3 Coca-Cola-Post 3

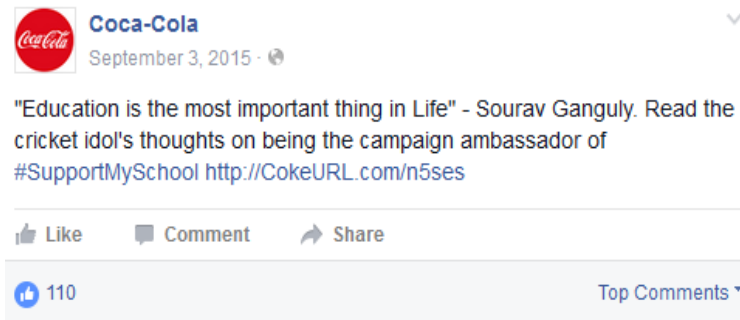


Figure 5.22 Screenshot of post analysed- Coca-Cola- Post 3
(Source: Facebook, 2016)

The post analysed was of the type- status; it received 110 likes and was shared 3 times. Figure 5.21 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	User Comments
-0.600000024	negative	nonsense
0.600000024	positive	Why isn't coke offered in 355ml can here in India? would love to see a US spec 355 ml can instead of the usual 330 ml and 300 ml cans.
0.5	positive	nice drink
0.600000024	positive	i love Coca-Cola

Figure 5.23 Sentiment Score and Polarity for Users Comment- Coca-Cola- Post 3
(Source: Compiled by the User)

The post had neutral sentiment even though the positive comments were more in number as compared to negative; the neutral comments diluted the polarity, as neutral comments were maximum in number. The calculation of sentiment value on inclusion of neutral comments comes out to be 0.

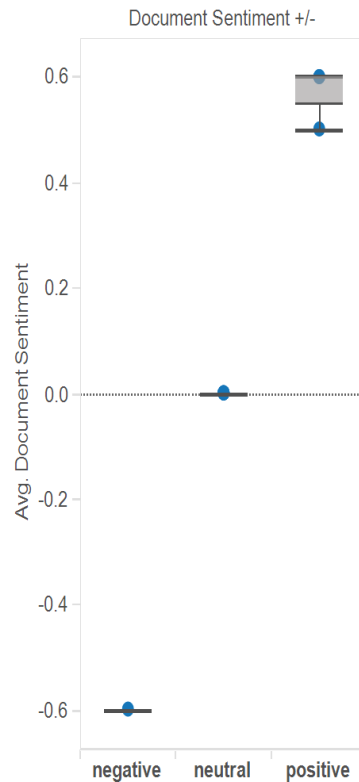


Figure 5.24 Box Plot of post analysed - Coca-Cola- Post 3
 (Source: Compiled by author, 2016)

Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post. Table 5.7 represents the keywords as per the sentiment category.

Sentiment	Keywords
Positive	Love, nice
Negative	Nonsense

Table 5.7 Classification of keywords as positive and negative sentiment
 (Source: Compiled by the author, 2016)

Inference- The post had neutral opinion as no of neutral comments were more than no of positive and no of negative comments.

5.2.4 Coca-Cola-Post 4

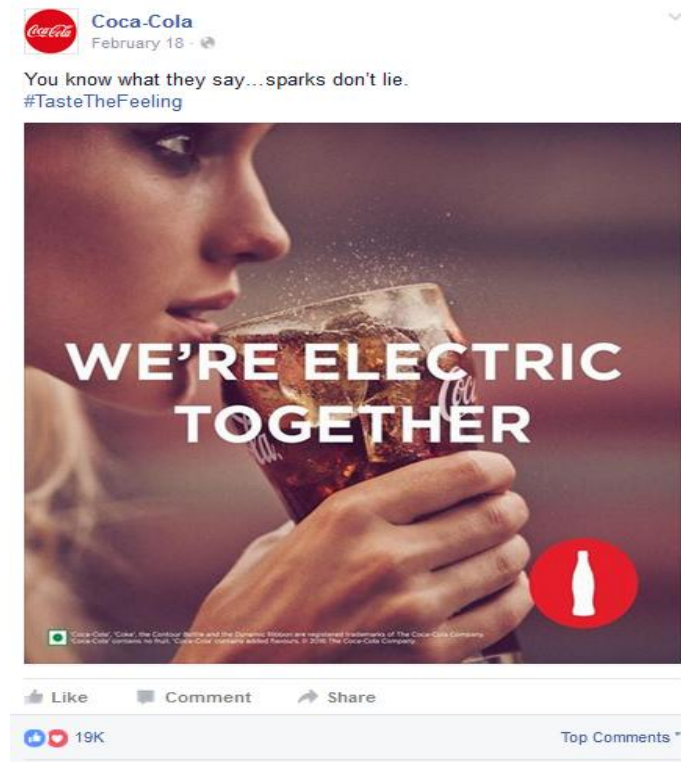


Figure 5.25 Screenshot of post analysed - Coca-Cola- Post 4
(Source: Facebook, 2016)

The post analysed was of the type- photo; it received 19K and was shared 38 times. Figure 5.25 shows calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Document Sentiment	Document Sentiment +/-	Comments
-0.600000024	Negative	Fraud company hai coca cola
0.550000012	Positive	Hmm nice gorgeous
0.600000024	Positive	My favorite
-0.490000001	Negative	unhealthy coca cola
0.600000024	Positive	My favorite
0.600000024	Positive	Awesome
0.600000024	Positive	love coca cola
0.600000024	Positive	I love you

Figure 5.26 Sentiment Score and Polarity for Users Comment- Coca-Cola- Post 4
(Source: Compiled by the author, 2016)

The overall sentiment was neutral to slightly positive. The average value of positive and negative sentiment was almost equal making the sentiment of the post equal to 0.034. The box plot depicts the average sentiment for the post.

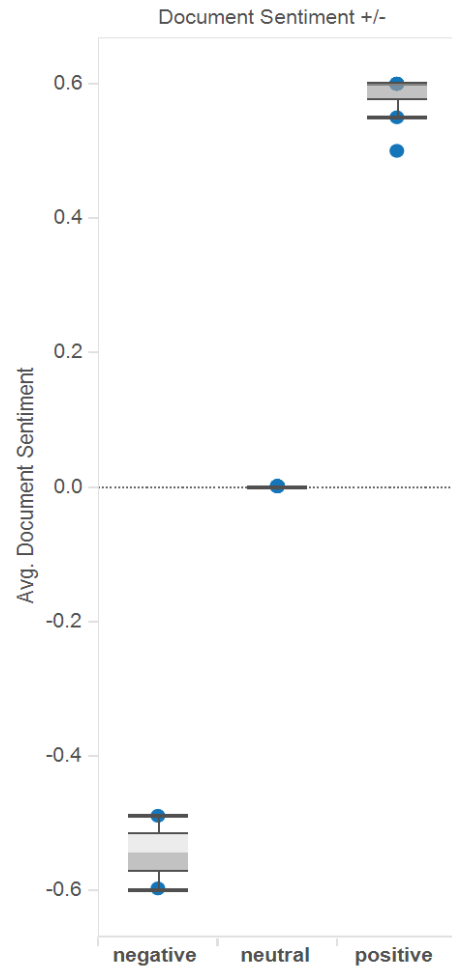


Figure 5.27 Box Plot of analysed post - Coca-Cola- Post 4
(Source: Compiled by author, 2016)

Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of consumer on the post. Table 5.8 represents the keywords as per the sentiment category.

Sentiment	Keywords
Positive	love, favourite, nice, tasty
Negative	Unhealthy, fraud

Table 5.8 Classification of keywords as positive and negative sentiment
(Source: Compiled by the author, 2016)

Inference- The comments indicates positive attitude towards the product. On considering neutral comments, the effect of positive value was reduced.

5.2.5 Coca-Cola-Overall Analysis

Coca-Cola in spite of having large number of followers had not been able to manage the promotions and campaigns. Content posted does not appear to grab the attention of the target audience. Page does not update the content frequently; moreover, posts were not related to previous content.

On analysis of four posts of Coca-Cola, the overall performance in engaging followers of Coca-Cola does not appear to be good. The attitude of consumer remained negative in maximum cases and positive only in single case. The comprehensive sentiment calculated comes out to be neutral to slightly negative with a value of -0.004. Most of the negative comments were related to health issues and harmful effect of the product. Consumers perceive Coca-Cola as unhealthy drink.

Entities that occurred frequently includes- Coke, Coca-Cola. Figure 5.26 depicts the usage of these entities in positive, negative or neutral comments and its sentiment value.

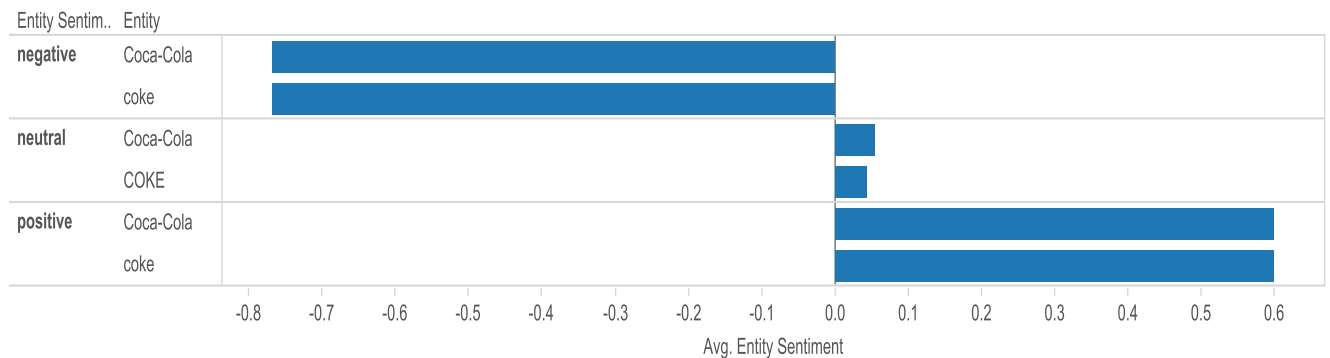


Figure 5.28 Average Entity Sentiment- Coca-Cola

(Source: Compiled by the author, 2016)



Figure 5.29 Sentiment of Keywords- Coca-Cola
(Source: Compiled by the author, 2016)

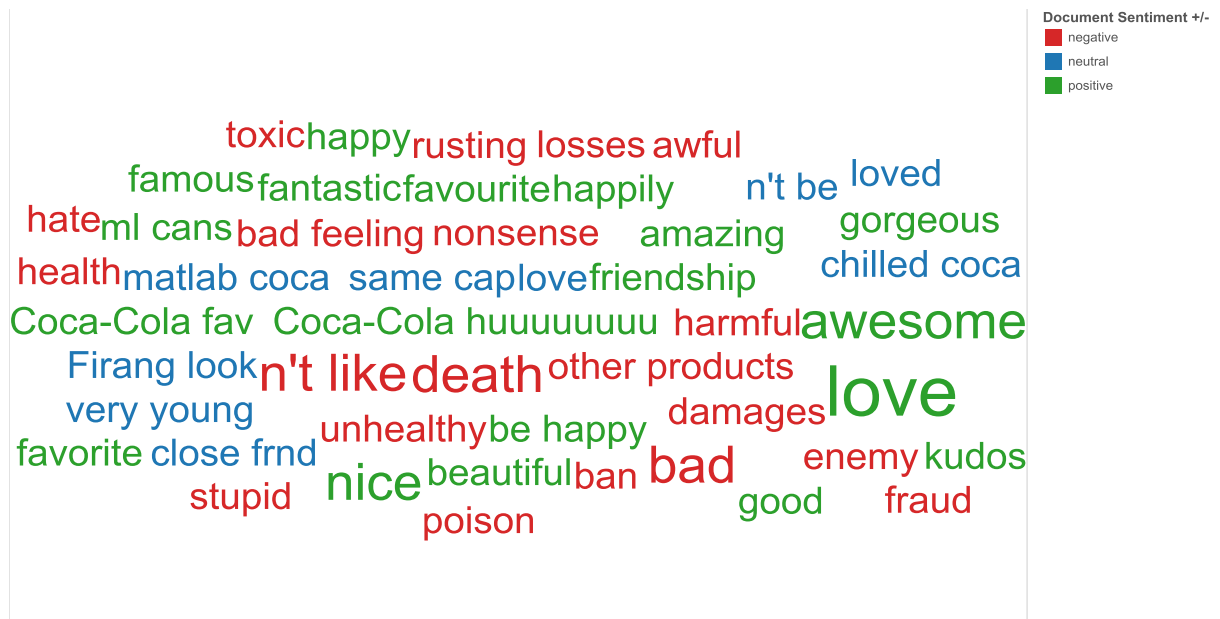


Figure 5.30: Word Cloud for Coca-Cola

(Source: Compiled by the author, 2016)

Figure 5.28 represents Word Cloud; it indicates the positive, negative and neutral phrases. The size indicates the average value of phrase sentiment and colour indicates the polarity, green being the positive and red being the negative.

5.3. Comparative Analysis

	Measure	Pepsi	Coca-Cola
1	Polarity	Positive	Negative
2	Sentiment	0.022	-0.007
3	Max liked post	Photo	Video
4	No of likes	73K	77K
5	Max shared post	Video	Video
6	No of share	800	4491
7	Most positive post	Status	Photo
8	Value	0.54	0.034
9	Max commented post	Photo	Video
10	No of comments	198	1045
11	Video	-0.09	-0.026
12	Photo	0.095	0.034
13	Status	0.054	0
14	Link	0.15	-0.01
15	Frequency of Positive keywords	76	54
16	Frequency of Negative Keywords	27	37
17	Top positive keywords	Love, win, hope, nice, loved, awesome, enjoy, happy, best, super	Love, nice, good, favourite, happy, awesome, marvellous, friendship, loved, famous
18	Negative keywords	Bad, hate, nonsense, mad, poison, confusing, damages, not good, irritating, unhealthy	Bad, hate, death, unhealthy, nonsense, enemy, poison, loss, inferior, fraud
19	Entity identified	Pepsi, pepsico, #pepsimoji, #pepsi	Coca-Cola, Coke
20	Entity sentiment	-0.52	-0.77

Table 5.9 Comparative Analysis of Pepsi and Coca-Cola

(Source: Compiled by the author, 2016)

As per the analysis of the posts, an observation made indicates that user does not comment content related to posts, instead in most of the cases express opinion about the product or the theme. Indian Cricket Team or player or a Bollywood actor featuring in the advertisement could be an object for discussion. The attitude towards the post holds valid only in case where marketers promote the post as contest.

Comparison of Pepsi and Coca-Cola indicates the perception of the consumer about the product. Some people relate the product as unhealthy drink which should not be consumed. While some consumers find it as a source of happiness and fun.

In case of Pepsi, average value of sentiment for the post is positive and for Coca-Cola is negative. On analysing, entity sentiment which depicts the true opinion of consumer towards the product, the value comes out to be negative for both Coca-Cola and Pepsi.

Overall usage of positive phrases was less in case of Coca-Cola as compared to Pepsi and in case of negative words the condition was vice-versa.

LIMITATIONS & RECOMMENDATIONS

6.1. Limitations

1. The study has focussed solely on food and beverage industry only.
2. Only two companies in FMCG sector were focussed upon.
3. The data collection was limited to only one social media platform i.e. Facebook.
4. Facepaigner has a limitation of data extraction, it fetch around 100-120 comments out of total. Therefore analysis was based on the limited data.
5. The content considered for analysis purpose was confined to only English language.
6. The comments were from Facebook users representing different demographic population.

6.2. Recommendations

1. The information from sentiment analysis help to gain useful insights about the product like the product seems to be unhealthy. Therefore, company should position itself accordingly.
2. Coca-Cola should build content encouraging users to participate. The focus should be on the contest and videos as videos and content attract audience and the comments made relates to the topic of content.
3. Based on the analysis, company can reach maximum targeted audience through videos. Therefore, content posted of type- video, should be encouraged
4. Coca-Cola should engage its followers by posting different type of content of same campaign and should update the page more frequently.
5. Coca-Cola should encourage consumers to use hash tags so as to be eligible for the contest. This would motivate followers to comment related to the post and not their individual random thoughts.
6. Overall, Pepsi managed to engage its consumers, but the entity sentiment came out to be negative as per the analysis; therefore, the focus should be on interacting with customers to convert the negative sentiment into the positive one.

CONCLUSION

The study indicates the opinion of consumers for FMCG sector. Pepsi and Coca-Cola was subject of study. The analysis of the posts indicates that followers comment on the content is not directly related to the topic of the content in most of the time, the comments relate to the celebrity featuring in the post or old jingles of the brand were used. Negative attitude mostly concerns with ill-effect of product on health and based on that users show displeasure. Similarly, the consumers who finds the product tasty, indicates the love for the brand, hence a positive opinion was observed. Only few users post content related to the post. The opinion about posts is mostly reflected in case of contests and videos followed by events. Out of all types of post- status, photo, video, link and event; sentiment related to the content was observed in case of video. Contests can be posted in any form.

The study indicates the sentiment towards each post and company as overall entity. It was observed that Coca-Cola received negative sentiment, for most of the posts while the Pepsi received positive sentiment in most of the cases. The main difference observed between the two was Pepsi posted inter-related content frequently which continuously engaged the customers while Coca-Cola posted content sometimes with gap of 2-3 days.

Both Pepsi and Coca-Cola received negative sentiment at entity level, therefore, as per the recommendations Pepsi can work on customer interaction more, converting the negative sentiment into positive one. While the Coca-Cola needs to focus on the posting interactive content frequently and encourage the use of hash tags for better understanding of customer sentiment. To restraint customers perceiving their product and brand as not harmful for health and good for society as well, both Pepsi and Coca-Cola could post some content related to the product in form of info-graphic educating people about the product and brand. Also, with that, some campaign showing social responsibility towards the society.

REFERENCES

Ernst Young (2015), *Social Media Marketing India Trends Study 2nd Edition*. Retrieved on 30th April 2016, from [http://www.ey.com/Publication/vwLUAssets/EY-social-media-marketing-india-trends-study-2014/\\$FILE/EY-social-media-marketing-india-trends-study-2014.pdf](http://www.ey.com/Publication/vwLUAssets/EY-social-media-marketing-india-trends-study-2014/$FILE/EY-social-media-marketing-india-trends-study-2014.pdf)

Fotis Misopoulos, Miljana Mitic, Alexandros Kapoulas et al (2014). *Uncovering customer service experiences with Twitter: the case of airline industry*. Retrieved from: www.emeraldinsight.com/0025-1747.htm

Indian FMCG Industry Analysis. (2016). *Ibef.org*. Retrieved 6 May 2016, from <http://www.ibef.org/industry/fmcg-presentation>

Indian Media and Entertainment. Industry Report 2015. (2016) (1st ed.). Retrieved from https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/FICCI-KPMG_2015.pdf

Indian Consumer Durables and FMCG Industry. (2016). *linkedin.com*. Retrieved 6 May 2016, from <https://www.linkedin.com/pulse/indian-consumer-durables-fmcg-industry-harshal-dhoke?articleId=6079383942404792320>

sentiment analysis. (2016). <https://class.coursera.org/nlp/lecture/31>.

What is opinion mining (sentiment mining)? - Definition from WhatIs.com. (2016). *SearchBusinessAnalytics*. Retrieved 6 May 2016, from <http://searchbusinessanalytics.techtarget.com/definition/opinion-mining-sentiment-mining>

Customer engagement. (2016). *Wikipedia*. Retrieved 6 May 2016, from https://en.wikipedia.org/wiki/Customer_engagement

Sentiment analysis. (2016). *Wikipedia*. Retrieved 6 May 2016, from https://en.wikipedia.org/wiki/Sentiment_analysis

Opinion Mining. (2016). *swshar*. Retrieved from <https://swshar.wordpress.com/2016/04/14/56/>

Coca-Cola Worldwide and in India - Coca-Cola India. (2016). *Coca-Cola India*. Retrieved 6 May 2016, from <http://www.coca-colaindia.com/our-company/coca-cola-worldwide-and-in-india/>

Hindustan Unilever. (2016). *Wikipedia*. Retrieved 6 May 2016, from https://en.wikipedia.org/wiki/Hindustan_Unilever

PGIndia.com:P&G India. (2016). *Pg.com*. Retrieved 6 May 2016, from https://www.pg.com/en_IN/company/pg-india.shtml

Welcome to India in Business. (2016). *Indiainbusiness.nic.in*. Retrieved 6 May 2016, from http://indiainbusiness.nic.in/newdesign/index.php?param=industryservices_landing/381/3

Facts, E. (2016). *Topic: E-commerce in India*. *www.statista.com*. Retrieved 7 May 2016, from <http://www.statista.com/topics/2454/e-commerce-in-india/>

Digital Advertising - India | Statista Market Forecast. (2016). *Statista*. Retrieved 6 May 2016, from <https://www.statista.com/outlook/216/119/digital-advertising/india>

Social Media Advertising - India | Statista Market Forecast. (2016). *Statista*. Retrieved 7 May 2016, from <https://www.statista.com/outlook/220/119/social-media-advertising/india#market-global>

ADHERENCE SHEET

	Date	Signature
Proposal Submission	5 th April 2016	
Data Collection and Analysis	12 th April 2016	
First Draft	19 th April 2016	
Final Report Submission	26 th April 2016	

ANNEXURE A

Screenshot of Facepager

The screenshot displays the Facepager 3.6 application interface. The main window is titled "Facepager 3.6" and features a menu bar with options: Open Database, New Database, Export Data, Add Nodes, Delete Nodes, Presets, and Help. Below the menu bar are two rows of icons for "Expand nodes", "Collapse nodes", "Copy Node(s) to Clipboard", "Add Column", "Add All Columns", "Unpack List", and "Copy JSON to Clipboard".

The central area contains a table with the following columns: Object ID, Object Type, Query Status, Query 1, Query Type, name, message, type, and metadat. created_time. The table lists data for a "cocacolaIndia" seed, with multiple rows of "data" objects. One row is highlighted in blue.

On the right side, there is a "Key Value" section showing a JSON-like structure with keys like "from", "like_count", "can_remove", "created_time", "message", "id", and "user_likes". Below this is a "Custom Table Columns (one key per line)" section with a list of column names: name, message, type, metadata.type, and taking_about_count. An "Apply Column Setup" button is located at the bottom of this section.

At the bottom left, there is a "Facebook" settings panel with tabs for "Facebook", "Twitter", "Generic", "Files", and "Twitter Streaming". The "Facebook" tab is active, showing fields for "Resource" (set to <post>/comments), "Parameters" (set to <post> and <Object ID>), "Maximum pages" (set to 2), and an "Access Token" field with a "Login to Facebook" button. A "Fetch Data" button is also present.

At the bottom right, there is a "Settings" panel with fields for "Node level" (set to 3), "Object types" (set to seed,data,unpacked), "Parallel Threads" (set to 1), and "Requests per minute" (set to 60000). A "Status Log" area is located to the right of the settings panel, currently empty.

The bottom status bar shows the file path "D:/DTU/project/project.db" on the left and "Timer stopped | 1 node(s) selected" on the right.

ANNEXURE B

Screenshot of Database

The screenshot displays the DB Browser for SQLite interface. The main window shows a table named 'Nodes' with the following data:

	objectid	objecttype	querystatus	querytype	querytime	queryparams	response	id	parent
1	cocacolaIndia	seed		NULL	NULL	NULL	NULL	1	NULL
2	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	31	1
3	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	69	1
4	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	74	1
5	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	76	1
6	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	84	1
7	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	86	1
8	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	88	1
9	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	90	1
10	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	92	1
11	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	93	1
12	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	94	1
13	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	95	1
14	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	96	1
15	76589845013...	data	fetchd (200)	Facebook:<us...	2016-05-04 2...	NULL	{"picture": "ht...	97	1

The 8Plot window on the right shows a grid with X and Y axes ranging from 0 to 4.8. The plot area is currently empty. The 'Columns' section lists: _rowid, id, level, and childcount, each with a checkbox.

ANNEXURE C

Screenshot of Unstructured Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
1	id	parent_id	level	objectid	objecttype	querystatus	querytime	querytype	name	message	type	metadata.type	talking_about_count	likes	likes.count	shares.count	comments.count	cr				
2	44	1	1	before	next	data	name	name	name	name	name	name	name	name	name	name	name	name	name	name	name	name
3	373	44	2	943770992344702_949861351735666	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	And finally Death with Coca Cola													
4	374	44	2	943770992344702_953465018041966	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Is it only me who drinks coca cola as a substitute to alcohol when I'm sad bec													
5	375	44	2	943770992344702_944234612298340	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Should've just said Coca Cola with pizza													
6	376	44	2	943770992344702_946451075410027	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	do not be feel love / or feel fu you are Love itself and u are naturally fulfilled													
7	377	44	2	943770992344702_946451075410027	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Stop rusting with coca cola													
8	378	44	2	943770992344702_947157845339350	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I love coca cola with ice my favourite													
9	379	44	2	943770992344702_946223932099408	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I don't like coke but I like other products of coca cola because coke is harmful													
10	380	44	2	943770992344702_953479624707172	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	What's there to celebrate with poison in hands ?!! Its an alternate to a toilet													
11	381	44	2	943770992344702_953252908063177	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Nice feeling with coca cola													
12	382	44	2	943770992344702_953950017993466	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I don't like coca cola my family's enemy													
13	383	44	2	943770992344702_947169945338140	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I love coca cola with ice													
14	384	44	2	943770992344702_953187644736370	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Nice feeling with Coca Cola													
15	385	44	2	943770992344702_950559281665873	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	coca cola is just awesome don't care about harmful it is but it's one sip just gi													
16	386	44	2	943770992344702_953519214703213	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	My life coca cola because its help me indiezation													
17	387	44	2	943770992344702_953300211391780	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Atlas cocola with death so please dont drink it you think it is nice but your lo													
18	388	44	2	943770992344702_953869401334861	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	who doesnt like coca cola ? ...its famous everywhere.. in india too... i love cc													
19	389	44	2	943770992344702_953949514660183	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I don't like coca cola its myfamily's enemy													
20	390	44	2	943770992344702_954718887916579	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	I like coca cola booz it will remember my feelings													
21	391	44	2	943770992344702_954450637943404	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	The amount of effort and Work that has been put in on this Commercial seen													
22	392	44	2	943770992344702_946818492039952	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Don't drink coca cola always drink once a week													
23	393	44	2	943770992344702_953544421367359	data	fetched (200)	2016-05-04 22:05:58.699000	Facebook:<post>/comments	Are u know about the ingredients of coca cola													

ANNEXURE D

Screenshot of processed data using Semantria

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Source Text	Summary	Document Sentiment	Document Sentiment +/-	Model Sentiment	Model Sentiment +/-	Phrase	Phrase Sentiment	Phrase Sentiment +/-	Phrase Type	Phrase Intensifier	Phrase Negator	Suggested Phrase	Entity	Entity Sentiment
1															
2	And finally Death with	And finally Death with	-0.768	negative			death	-0.768	negative	detected	finally			Coca-Cola	
3	drinks coca cola to be	drinks coca cola to be	0.54290479	positive			be happy	0.54290479	positive	detected					
4	drinks coca cola to be	drinks coca cola to be	0.54290479	positive											
5	drinks coca cola to be	drinks coca cola to be	0.54290479	positive											
6	drinks coca cola to be	drinks coca cola to be	0.54290479	positive											
7	drinks coca cola to be	drinks coca cola to be	0.54290479	positive											
8	Should've just said	Should've just said	0	neutral										Coca-Cola	
9	Should've just said	Should've just said	0	neutral											
10	Should've just said	Should've just said	0	neutral											
11	Should've just said	Should've just said	0	neutral											
12	Should've just said	Should've just said	0	neutral											
13	Should've just said	Should've just said	0	neutral											
14	special feeling		0	neutral			special feeling			possible			special		
15	Stop rusting with coca	Stop rusting with coca	-0.52	negative			rusting	-0.52	negative	detected					
16	I love coca cola with	I love coca cola with	0.60000002	positive			love	0.60000002	positive	detected					
17	I love coca cola with	I love coca cola with	0.60000002	positive											
18	I love coca cola with	I love coca cola with	0.60000002	positive											
19	I love coca cola with	I love coca cola with	0.60000002	positive			favourite	0.60000002	positive	detected					
20	I love coca cola with	I love coca cola with	0.60000002	positive											

ANNEXURE E

Screenshot of Tableau Worksheet

