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Understanding Consumers' Inclination Towards Pepsi® Facebook Brand Page (FBP) Posts: A Sentiment Analysis Approach

Anurag Tiruwa[1], Rajan Yadav[2], P.K. Suri[3]

Abstract

The paper aims to study the sentiment of consumer towards the Facebook Brand Page (FBP) promotional campaign by FMCG brand Pepsi®. The study is first of its kind to use sentiment analytics on Facebook brand post in FMCG as most of the researches in the field are done on twitter sentiments. Sentiment analysis is an analytical approach for classifying pieces of text into clusters of text containing opinions on a certain topic/post/new etc. The purpose of the study is to determine the customer sentiment towards the posts by examining the emotional inference of the content on the targeted population. The data was collected from Pepsi®'s FBP using data mining tools, and sentiment of the consumers were analysed using various offline and online analytical tools. It was found that the individual sentiment of the posts was found to be fairly positive but when the overall results were estimated the combined sentiment of the posts were found to be negative. This study will help the marketers to understand the customer's emotional engagement and their inclinations towards the promotion/ brand.

Keywords: Sentiment Analysis, Facebook Brand Page, Social media, Customer Engagement.

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 (Eisenberg and Eisenberg, 2007; Cheung et al., 2012). 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, to reach and market products to these customers, brands have to allocate a significant marketing budget to digital and social media marketing.

This paper aims to study the effectiveness of social media campaign run by companies, it involves the study of various customer engagement practices followed by the company. The study focuses on attitude and behaviour of the consumer for evaluating the success and effectiveness of the campaign. The same was measured by using Sentiment analysis to assess the opinion of consumer towards a particular post or the brand. For the purpose of the study, food and beverage industry was focused upon, and social media activities of the leading beverage player Pepsi® were explored.

1. Research Scholar, Delhi School of Management, Delhi Technological University, Delhi, India.
2. Professor, Delhi School of Management, Delhi Technological University, Delhi, India.
3. Professor, Delhi School of Management, Delhi Technological University, Delhi, India.

The study is divided into four sections. The first section discusses brief introduction and overview of the social media and its utilization by marketer along with a basic introduction to Sentiment Analysis. The second section discusses the methodology followed in this study. The third section caries the Sentiment analysis and further discussions. The next section concludes the study with managerial implications and limitations.

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, 2016). 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. 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, 2016). Revenue in the "Digital Media" market amounted to 2,306.7 million USD in 2016. (Statista, 2017).

Numbers of 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 (Tiruwa et al. 2016). High-speed internet connectivity across the length and breadth of the country is expected to enable more Indians to join the e-commerce and social media bandwagon and create a positive network effect for further growth. (mmaglobal, 2017). 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 too. Further, mobile advertisement spends, and social media aided digital video advertisement spends are expected to grow at 50.9% and 40% annually between 2016 and 2021 respectively (Brand Equity, 2017). Therefore, marketers need a way to measure the repercussions of these digital ad campaigns on various digital media platforms or to assess the need of deploying any such ad campaign by listening in on what consumers are saying about them.

Marketers at Social Media

A few years back, customer engagement was not a key focus area as brands were more focused on building their communities. But currently the marketers and brand have shifted their focus to Building Brand Awareness, Building a Community and Customer Engagement on social media platforms. (Anderson, C. 2006; EY, 2014). About 81% of the brands 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, 2014). 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. 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, media-savvy social 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%. (EY, 2014).

With increasing awareness of the social media as a platform to engage, new business models which have integration of social media with a focus on interactivity and customer connectivity

and their objective being influencing current and potential customers, through content conjoined with the technology of Web (Kietzmann et al., 2011, Yadav, 2015; Tiruwa et al., 2016). Marketers are now aware of the benefits of integrating social media into their businesses and are currently using social media strategies to reach the masses. Marketers have recognized the need to keep a close watch on such brand communities and have started to integrate the use of brand communities owned by them on various SNSs (Constantinides et al., 2008). Such sites provide tremendous opportunities to marketers so that they can understand the customers' attitude and keep them engaged with the brand and its products.

Sentiment Analysis

Including Social media platforms as part of the integrative promotional business strategy is not enough, but measuring its effects is important too. Social media like Facebook comprises of user data in the forms of comments, likes, and shares. This big data can be utilized to understand whether the social media marketing or engagement is having some effect on engaging users or not. Sentiment analysis is one such field that analyses people's opinions, sentiments, evaluations, appraisals, attitudes, and emotions towards entities such as products, services, organizations, individuals, issues, events, topics, and their attributes (Lexlative, 2017). It refers to the general method to extract subjectivity and polarity from the text. Sentiment analysis is also known as opinion mining, and it refers to the use of natural language processing, text analysis, and computational linguistics to identify and extract subjective information in source materials. It also encompass the extraction, identification, or characterization of 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. (Mozetiè et al., 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 (Condliffe, 2010). It facilitates policy makers to analyse public sentiments concerning policies or public services. (Cambria et al., 2013).

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 systematically, gives the vendor a much clearer picture of public opinion than surveys or focus groups do because the data is created by the customer (Ramarjun et al., 2016). 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 (Hausman, 2013).

Research Methodology

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® on Social Media Platform Facebook. The study aims to understand the sentiment of the population engaging on these posts from the lexicon based sentiments analysis on the user comments on the different types of posts on the Pepsi® Facebook Brand Page (FBP).

Research Design

Research design specifies a framework for conducting the research work. Kozinets (2009) proposed two options for data collection: collecting online posts for sentiment analysis, or observing group interactions occurring within the online community and taking notes from the observer's perspective. For identifying customer sentiment about the campaign of Pepsi®, a food and beverage company, publicly shared Facebook posts and users comment on the same were collected and processed.

Research Technique

Sentiment analysis was conducted by analysing the 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. Collected data is cleaned in excel using Sementria®, a plugin for Microsoft Excel®. Visualization and the analysis of the comment sentiments were done on Tableau®. Further, Word dictionary is created which depicts the words or the phrases used frequently and are categorized as positive and negative words.

Population and Sample Size

Population under study includes all the males and females who follows the Pepsi® FBP and the entire friend list or followers of these users. Sample size includes the active users who posted content on the various posts of the brands.

Data Collection

Online posts were collected using the online tool provided at www.84code.com and is exported into .csv format. The unstructured data content was cleaned and processed for the further analytical purpose. The comments of users who have liked the FBP were captured. Data was collected from September to October 2017. During this period Pepsi® posted content relating to India-Australia Cricket Tournament and encouraged users to post pictures with Pepsi® to win a chance to meet the Indian Cricket Team Captain Virat Kohli. Since the duration of this tournament was overlapping with the festive season of Diwali, the brand page also posted content relating to the festive season.

Research Tools

The Research Tools used for conducting the study includes Facepager®, Microsoft Excel®, Sementria® for Excel® and Tableau®

1. **Facepager®** - Facepager® was made for fetching publically available data from Facebook, Twitter, and other JSON-based APIs. All data is stored in an SQLite database and may be exported to .csv format. The data was extracted from Pepsi® by providing username provided in the URL which acts as object 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® -** Sementria® for Excel is developed by Lexalytics®. It provides a 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. Sementria® 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 a family of interactive data visualization based on data. The structured result produced after processing data using Sementria® was analysed in Tableau®.

Data Analysis and Findings

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 by capturing the comments by the users who have liked the Pepsi® FBP. Pepsi® was able to grab the attention of its targeted audience by posting the content frequently, and most of the content posted used 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.

Post 1

The post analysed was of the type- photo; it received 73K no of likes and was shared by 154 users. Table 7.1 shows the calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Table 7.1: Sentiment Score and Polarity for Users Comment- Pepsi®- Post 1

Document Sentiment	Document Sentiment +/-	User Comments
0.510517299	positive	#IndVsAus i hope to win. I love Pepsi
0.600000024	positive	#WithPepsi i 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	#IndVsAus I HOPE ME WIN AND MEET VIRAT
0.441551745	positive	won with Pepsi..hahahaaha
0.600000024	positive	#WithPepsi...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 Aussies
0.49000001	positive	Best wishes to one and all #Pepsi
-0.050000012	negative	bad for health
0.52125001	positive	nice nicely
0.5	positive	#With Pepsi. feeling happy
0.5	positive	Nice pic virat kohli superrrrrrr
0.5	positive	Good
0.441551745	positive	won with Pepsi
-0.600000024	negative	Nonsense
-0.600000024	negative	Pepsi is bad

Figure 7.1(a) depicts the average value of the positive and negative value of comments. Tableau® was used to plot the box plot. The plot represents that consumers have neutral opinion but with alignment towards positivity for the post. The post has average sentiment value of 0.095.

Frequently used phrases and keywords used in comments were identified and classified as positive and negative based on the opinion of the consumer on the post. Table 7.2 represents the keywords as per the sentiment category.

Table 7.2: Classification of keywords as positive and negative sentiment

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

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

Post 2

The post analysed was of the type - status; it received only 93 no of likes and was shared by only 3 users. Table 7.3 shows the calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Table 7.3: Sentiment Score and Polarity for Users Comment- Pepsi®- Post 2

Document Sentiment	Document Sentiment +/-	Comments
0.5	positive	feeling happy with Pepsi
0.60000002	positive	#SayItWith #Pepsi love #Pepsi #WithPepsi..
0.54946554	positive	Pepsi mojo what a nice game i hope i win a chance and have fun with virat kohli
0.60000002	positive	#Pepsi I love it #WithPespi. my first selfie
0.60000002	positive	#Pepsi love
0.5	positive	Yo Pepsi is #feeling_happy
0.44155175	positive	#WithPepsi drink Pepsi and win

The box plot represented in Figure 7.1(b) 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 the consumer on the post. Table 7.4 represents the keywords as per the sentiment category.

Table 7.4: Classification of keywords as positive and negative sentiment

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

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.

Post 3

The post analysed was of the type - video; it received 1.9M likes and was shared by 800 users. It received 439K views. Table 7.5 shows the calculated value of sentiment for each comment. Document sentiment indicates the value of the sentiment and document sentiment +/- indicates the polarity.

Table 7.5: Sentiment Score and Polarity for Users Comment- Pepsi®- Post 3

Document Sentiment	Document Sentiment +/-	Comments
0.584438503	positive	creative advertisement
0.49000001	positive	This always make me smile
0.600000024	positive	#HappyPepsi #Pepsi
-0.600000024	negative	nonsense
0.564999998	positive	loved it
0.800000012	positive	#HappyPepsiToYou #HappyDiwali
-0.75	negative	Poison is out.
0.588333368	positive	I liked cool can
-0.600000024	negative	nonsense
0.600000024	positive	Nice ad
0.564999998	positive	loved it
0.5	positive	nice song

Figure 7.1(c) depicts the average value of sentiment of comments. Even though positive comments were more as compared to negative in number, the presence of an 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.

Table 7.6 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 the consumer on the post.

Table 7.6: Classification of keywords as positive and negative sentiment

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

The consumers had slightly negative opinion about the campaign.

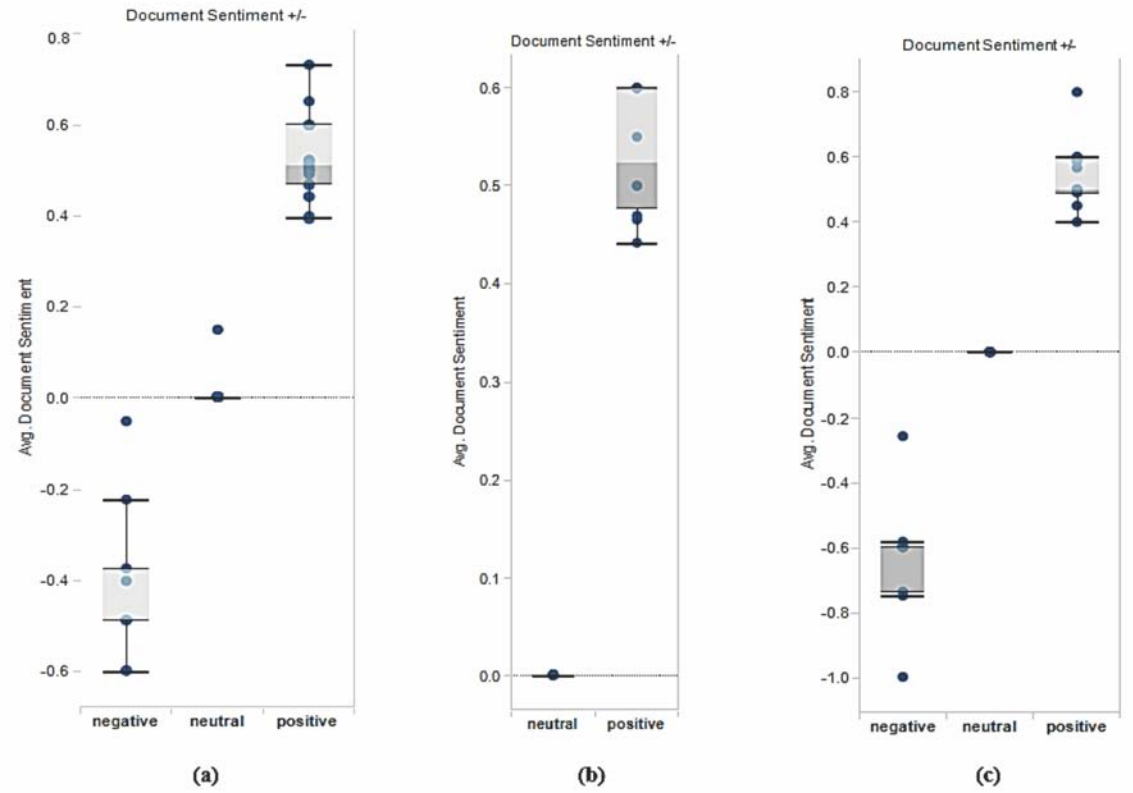

Figure 7.1: Box Plot for he analysed posts – Post 1, 2 and 3

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 during the India-Australia Series and the no of contests and customer engagement activities (Pepsi® India, 2016). Pepsi® keeps the campaign alive by posting content about the same campaign for few days continuously in various forms. Introduction of a new product like a 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 3 posts of Pepsi®, posted during the month of September-October, 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, #WithPepsi, #IndVsAus, #HappyPepsiToYou.

Table 7.7: Summary of the analysis of the posts

S.No.	Measure	Pepsi®
1.	Polarity	Positive
2.	Sentiment	0.022
3.	Max liked post	Photo
4.	No of likes	73K
5.	Max shared post	Video
6.	No of share	800
7.	Most positive post	Status
8.	Value	0.54
9.	Max commented post	Photo
10.	No of comments	198
11.	Video	-0.09
12.	Photo	0.095
13.	Status	0.054
14.	Link	0.15
15.	Frequency of Positive keywords	76
16.	Frequency of Negative Keywords	27
17.	Top positive keywords	Love, win, hope, nice, loved, awesome, enjoy, happy, best, super
18.	Negative keywords	Bad, hate, nonsense, mad, poison, confusing, damages, not good, irritating, unhealthy
19.	Entity identified	Pepsi, #Pepsi #WithPepsi, #IndVsAus, #HappyPepsiToYou
20.	Entity sentiment	-0.52

Figure 7.4 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 negative.

Figure 7.2: Word Cloud for the most frequently used words in the Facebook posts

As per the analysis of the posts, an observation made indicates that user does not comment on the content related to posts; instead, in most of the cases express an 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 the case where marketers promote the post as a contest. Some people relate the product as an unhealthy drink which should not be consumed. While some consumers find it as a source of happiness and fun. In case of Pepsi®, the average value of sentiment for the post is positive. On analysing, entity sentiment which depicts the true opinion of consumer towards the product, the value comes out to be negative for Pepsi®.

Discussion and Conclusion

The study indicates the opinion of consumers for FMCG sector with FBP of Pepsi® as the 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. Finally, the majority of the negative comments were related to Pepsi® being unhealthy and not fit for consumption. The brand needs to address the same with better campaigns to restraint customers perceiving their product and brand as not harmful to health. Pepsi® could post some content related to the product in the form of info-graphic educating people about the product and brand. Also, with that, some campaign showing social responsibility towards the society.

The study indicates the sentiment towards each post and company as an overall entity. It was observed that the Pepsi® received positive sentiment in most of the cases. It was noted that Pepsi® posted inter-related content frequently which continuously engaged the customers Pepsi® also received negative sentiment at the entity level, therefore, as per the recommendations Pepsi® can work on customer interaction more, converting the negative sentiment into a positive one.

Managerial Implications and Limitations

The information from sentiment analysis help to gain useful insights about the product like the product seems to be unhealthy. Therefore, the company should position itself accordingly. The marketers should build content to encourage users to engage and participate. The focus should be on the contest and videos, as videos and content attract the audience and the comments made relates to the topic of content. Different type of content for the same campaign should be updated on the page more frequently, as it increases the follower engagement with the brand. Another important understanding from the study is that consumers should be encouraged to use hash tags to be eligible for the contest. This would motivate followers to comment related to the post and not their individual random thoughts and also create buzz for the brand as a tending topic on the internet.

The study was focused solely on FMCG sector, and only one FMCG brand was considered for data collection and analysis. There is a plethora of social media platforms where both people and brands are actively participating; this study was limited to SNS Facebook. Software tool Facepager® has a limitation that it cannot retrieve 500+ comments at a time for a given post

thus we can say that analysis was based on the limited data. The software which analysed the comments was restricted to analyse only English language so there might have been instances where comments written other than English were not considered fit for analysis. The demographics of the users cannot be established and taken into consideration while analysing the data. There is future scope for the study regarding a comparative study between two similar brands in different social media platforms.

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