

THE STATE OF SOCIAL MEDIA ANALYTICS AS A BUSINESS INTELLIGENCE PRACTICE, INCLUDING ITS PROSPECTS FOR THE FUTURE

Aditya gupta

Senior analyst, Benori knowledge

Email: aditya.gupta@benoriknowledge.com

ABSTRACT

A new and developing field called social media analytics can assist companies in developing and putting into practice measuring strategies for gaining knowledge from social media interactions and gauging the effectiveness of their own social media campaigns. Ultimately, firms can enhance their performance management strategies across several company functions with the help of an effective social media analytics program. Businesses are still having trouble deciding which approaches and strategies to use, putting them into practice, and institutionalising them in order to create a social media analytics program that works. In order to help businesses link their social media programs, processes, and technology with the overall strategic objectives of the organisation, this paper presents a business intelligence viewpoint on social media analytics. In order to achieve this, the paper presents the theoretical foundations of business intelligence and social media analytics. It also incorporates conclusions from two online expert panels that were tasked with identifying the most up-to-date procedures, technologies, and practices in the field as well as suggestions for companies looking to implement social media analytics. In doing so, the study seeks to provide a foundation for defining a basic philosophy for companies engaging in different social media activities.

1. INTRODUCTION

Organisations must develop and put into practice measuring strategies that will enable them to assess the effectiveness of their own social media initiatives and gain insights from social media interactions as these channels become more and more integrated into daily corporate routines and workflows (Aalbers et al, 2019). A young and developing area called social media analytics is well-positioned to make such an endeavour possible, enabling companies to enhance their performance management programs across a range of business functions. Social media analytics have the potential to provide valuable information to a variety of business lines, including marketing and sales, customer relations, public relations, and product development. These lines of business can benefit from using social media analytics to measure the effectiveness of promotional campaigns, gather insights about customer needs and preferences, discern brand perceptions, obtain feedback on product performance, or capture data on market trends(Orben, 2020; Ellison et al, 2017).

Businesses are still having difficulty adopting, implementing, and institutionalising methodologies and techniques for an effective social media analytics program, despite these acknowledged benefits and the abundance of vendor offerings and technological

capabilities in the social media analytics space (Orben, 2020). In order to solve this problem, the paper presents the idea that social media analytics should be viewed as a business intelligence practice. It does this by connecting the various monitoring, discovery, and predictive capabilities of social media analytics to both the organization's high-level strategic goals and the tactical implementation of social media initiatives. It is crucial to define social media before delving into the scope and details of social media analytics. This is because there isn't a single, widely accepted definition of the term (Burrow and Rainone, 2017), and it's frequently used incorrectly as a buzzword (Aalbers et al, 2019). Despite the lack of a consensus definition, the majority of scholars and professionals use the word "social media" to refer to a wide range of online platforms and channels that can support cooperative information generation and distribution. Two ideas that set these platforms and channels apart from other conventional computer-mediated communication technologies are essential to the social media categories mentioned above: activity streams and social graphs (Allcott et al, 2020; Ellison et al, 2017). Individuals' social media activity streams are made up of activities including creating, sharing, cooperating, and conversing. Additionally, these exchanges take place in the framework of links and linkages between people and their social network, which is made up of friends, admirers, and followers and represents their social graph of connections.

We use Lovett's (2011) working definition of social media analytics, which aligns with the business intelligence approach of social media analytics used in this paper: "Social analytics is the field that assists businesses in quantifying, evaluating, and interpreting the results of their social media campaigns in relation to particular corporate goals." This definition emphasises how social media analytics relates to company objectives and performance management, which are concepts that define business intelligence in general (Araujo et al, 2017).

2. MATERIAL AND METHODS

The dataset file, named sentimentsdataset.csv, encapsulates diverse social media insights. It comprises user-generated content, sentiment labels, timestamps, platform details, trending hashtags, user engagement metrics, and geographical origins. With additional columns for extracted date and time components, this dataset is a valuable resource for sentiment analysis, trend identification, and temporal analysis on social media platforms.

Table 1 Description of Data set

Feature	Description
Text	User-generated content showcasing sentiments
Sentiment	Categorized emotions
Timestamp	Date and time information
User	Unique identifiers of users contributing
Platform	Social media platform where the content originated
Hashtags	Identifies trending topics and themes
Likes	Quantifies user engagement (likes)

Retweets	Reflects content popularity (retweets)
Country	Geographical origin of each post
Year	Year of the post
Month	Month of the post
Day	Day of the post
Hour	Hour of the post

For analysing the data collected sentiment analysis is done. Sentiment Analysis: Explore the emotional landscape by conducting sentiment analysis on the "Text" column. Classify user-generated content into categories such as surprise, excitement, admiration, thrill, contentment, and more.

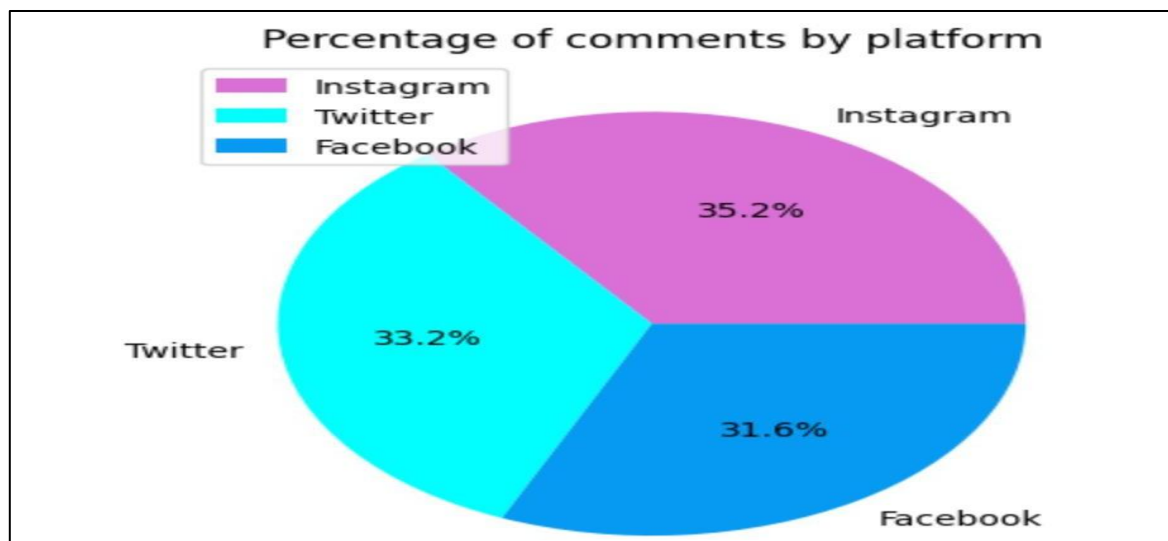
The study of these subjective emotions as they are expressed in text is known as sentiment analysis, and it has garnered a lot of interest from the academic community as well as business. The work of mining opinions stated in text and analyzing the associated sentiments and emotions is known as sentiment analysis, but because it contains many overlapping concepts and sub-tasks, the task has not been well defined in the academic literature up until this point (Medhat et al, 2014).

One may think of sentiment analysis as a classification procedure. SA is classified into three main levels: aspect-level, sentence-level, and document-level. The goal of document-level sentiment analysis (SA) is to categorize opinion documents as either positive or negative. It views the entire document as a basic information unit that discusses a single subject (Zhao et al, 2016).

2.DISCUSSION

The data has comments from Instagram, Twitter and Facebook. Maximum usage platform is Instagram, followed by Twitter and Facebook. In the next step sentiments used by social media users are analysed by using sentimental analysis.

Figure 1 Percentage of comments by platform



Using Sentiment Analysis the data is segregated into the following sentiments positive, joy, Excitement, Neutral, Contentment, Adrenaline, Harmony, ArtisticBurst, Radiance and Elegance.

Table 1 Sentiments Analysis

Sentiments	
Positive	44
Joy	42
Excitement	32
Neutral	14

Contentment	14
Adrenaline	1
Harmony	1
ArtisticBurst	1
Radiance	1
Elegance	1

The data is segregated using the synonymns.The code used for the output is:

```
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Positive': 'Happy', 'Joy' :  
'Happy', 'Serenity' : 'Happy', 'Euphoria' : 'Happy', 'Elation' : 'Happy',  
'Happiness' : 'Happy', 'Playful' : 'Happy', 'Amusement' : 'Happy'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Despair' : 'Sad', 'Grief' :  
'Sad', 'Regret' : 'Sad', 'Melancholy' : 'Sad', 'Negative' : 'Sad', 'Bad' : 'Sad', 'Loneliness' :  
'Sad', 'Desolation' : 'Sad'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Excitement' : 'Excited',  
'Thrill' : 'Excited', 'Adventure' : 'Excited', 'Enthusiasm' : 'Excited', 'Inspired' : 'Excited',  
'Inspiration' : 'Excited', 'Arousal' : 'Excited'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Hate' : 'Angry', 'Disgust' :  
'Angry', 'Bitterness' : 'Angry', 'Betrayal' : 'Angry', 'Frustration' : 'Angry', 'Frustrated' :  
'Angry', 'Anger' : 'Angry'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Pride' : 'Proud', 'Admiration' :  
'Proud', 'Awe' : 'Proud', 'Reverence' : 'Proud'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Contentment' :  
'Content', 'Acceptance' : 'Content', 'Serenity' : 'Content', 'Fulfillment' : 'Content',  
'Calmness' : 'Content', 'Satisfaction' : 'Content'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Indifference' : 'Neutral',  
'Numbness' : 'Neutral', 'Indifference' : 'Neutral', 'Ambivalence' : 'Neutral'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Hope' : 'Hopeful',  
'Determination' : 'Hopeful', 'Resilience' : 'Hopeful', 'Empowerment' : 'Hopeful'})  
sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Shame' : 'Embarrassed',
```

'Embarassment' : 'Embarassed'})

sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Gratitude' : 'Grateful'})

sentiment_df['Sentiment'] = sentiment_df['Sentiment'].replace({'Compassionate' :
'Compassion', 'Tenderness' : 'Compassion', 'Empathetic' : 'Compassion'})

Table 2 Sentiment Analysis-1

Sentiment	
Happy	146
Sad	64
Neutral	36
Hopeful	28
Grateful	22
Compassion	15
Embarrassed	8
Surprise	6
Enchantment	4
Excited	66
Content	38
Angry	34
Reflection	4
Proud	28
Curiosity	16
Nostalgia	11
Confusion	8
Overwhelmed	4
Boredom	4

In broader categories happy and sad are two emotion which is most depicted by the social media users in the there social media posts.

3. CONCLUSION

Sentiments in social media refer to the emotions, opinions, or attitudes expressed in posts, comments, tweets, and other forms of communication on platforms like Twitter, Facebook, Instagram, and others. Understanding these sentiments is important for various applications, such as marketing, customer service, public relations, and social research. Sentiments expressed on social media encompass a wide spectrum of emotions and attitudes, playing a crucial role in shaping online discourse. Positive sentiments like happiness, excitement, love, and support foster community engagement and brand loyalty, while negative sentiments such as anger, sadness, and criticism often signal dissatisfaction, issues with products, services, or broader social concerns. Neutral sentiments focus on sharing information, asking questions, or expressing curiosity without a strong emotional charge. Mixed sentiments, such as bittersweet or conflicted feelings, capture the complexity of human emotions, often reflecting ambivalence or simultaneous positive and negative reactions.

Humor and sarcasm add layers of subtlety to social media interactions, where users might mask their true feelings behind jokes or irony. Empathy and compassion are frequently seen in responses to personal stories or global events, indicating a strong sense of community and shared experiences. On the other hand, frustration is commonly expressed in contexts like customer service, where users voice their dissatisfaction or disappointment. Hopefulness and surprise emerge in reactions to positive developments or unexpected news, respectively, contributing to the dynamic and ever-changing nature of online conversations. Understanding these sentiments through analysis tools helps brands and individuals gauge public opinion, tailor responses, and enhance engagement on social platforms.

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