

SENTIMENTAL ANALYSIS IN SOCIAL MEDIA AND IT'S IMPACT

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ABSTRACT:

In this day and age, Social Media is influencing the user's preferences by shaping their attitudes and behaviours. Screening the Social Media activities of the people is a good way to measure customers' loyalty, keeping a track on their sentiment towards brands or products. This paper illustrates how Social Media comments influence the feelings of the consumers or users. Here the researcher tries to show the classification of various sentimental analysis based on the reviews of social media and there impacts on other customers or users. The research also shows the positive or negative impact of the collected reviews from the social media on the business. A positive review can help to increase the number users of the product for a business whereas a negative impact can decrease the number of users too. Sentimental analysis of reviews can totally change the business productivity. Here the researcher also tries to show how sentimental analysis play a crucial role on the users of the social networking sites by their experience. The survey taken by the researcher for the above raised questions helps to gather the answers as a result of sentimental analysis and also helps to classify its impact whether is it positive, negative or neutral impact.

Keywords: sentiment analysis, reviews, social media, monitoring tool, impact.

1. INTRODUCTION:

If we see an incomplete information or unprocessed data can be more hazardous for the company or the social media users. So it's important to gather as much as possible raw data to make it as complete information so which can help the users who read that information and give a proper review regarding that company or users of that product or social media sites.

Suppose, If somebody responds (without emojis) with a sarcastic comment, can anyone tell if it's sarcastic? If in reality they are happy, angry or neutral?

That's what makes study of emotions such an expansive and fascinating area. Sentiment Analysis also called personal view mining its method of identifying and classifying opinions in a given piece of text as positive negatives or neutrals. With the growing capabilities of technology, sentiment analyses are

becoming a more used resource for businesses. The software tools are use to provide their users with insights into how the public feels about their businesses, goods or subjects of interest. So it is important to understand the sentiment of every person who uses our product, service or brand. So it becomes important for every company or sites to collect the reviews which show the emotions of the users.

This paper focuses on providing a better understanding of the application of sentiment analysis in social media platform through the examination of related reviews. Analysis of sentiment is an approach that uses many social media tracking tools to extract, turned and interpret views from a text and classify them into positive, negative or natural feelings. Most of the previous study applied sentiment analysis into a product or various review of social sites to better understand their customer and make the necessary decision to improve their product or services.

A systematic review was conducted using recommendations from five measures to perform a systematic management literature review. First, we begin by identifying the problem of the study. Then define the characteristic needed for the analysis. We then synthesize applicable literature details and the final step will be to announce the analysis result.

1.1 The following research issue was dealt with to provide a summary of the review:

- a) Which approach is used when examining social media sentiments?
- b) What kind of social media platform is used for evaluating sentiments?
- c) What are the application tools for applying sentiment analysis to social media?
- d) What is the classification according to the automated monitoring tool for sentimental analysis?
- e) Which impact does the outcome of sentiment analysis have on public?

Knowing exactly how people feel about our business or applying an analysis of sentiments can do the trick. Social media sentiment analysis specifically takes customer or user conversations around the social space and puts them into context. To this end, we use social media tracking tools to help analyse customer feedback.

Once we have collected all this useful data, we will use it to look for trends and observations. As we begin to carry out in-depth analyses and take action based on our conclusions, we have progressed from the simple task of tracking social media to the more complex social listening research.

1.2. Some of Social media tracking tools used to extract data for sentiment analysis:

Types of Sentiment:

Evaluation of sentiment takes different forms, from models focusing on polarity (positive, negative, neutral), to those detecting feelings and emotions (angry, happy, sad, etc.), or even models defining motives (e.g. interested v. not interested).

		
Positive	Neutral	Negative

Table 1: Different Emoji's for Expressing Sentiments[prepared by researcher]

Types of Social media tracking tools:

a) Nexalogy

Interesting maps give us a visual look at our brand's trending subjects and discussions. We see only the most relevant conversations on Twitter, so we can focus on the data that matters. This software helps us dig into the conversions and see the types.

b) Reputology

Reputology helps companies track comments & gather feedback so they can develop their business. Rapidly engage unhappy customers & monitor all the ways in which customer feedback occurs: polls, comment cards, Google My Business reviews, Facebook reviews etc.

c) Google Alerts

Google Alerts allows you to track your product, rivals, or other related topics throughout the web. Alerts can be set to specific regions and languages.

d) Taking online survey

Online reviews have a significant part to play in the online world. They are influencing our buying decisions and the places we frequent. The ability to understand people's emotions is essential for any service or site, as customers can express their feelings and thoughts more openly than ever before. Through monitoring customer feedback automatically, companies are able to listen closely to their customers from survey responses to social media messages, and tailor products and services to suit their needs.

2. OBJECTIVE:

The objectives of this paper are:

- The researcher presents here various sentiments based on social media platforms.

- The techniques which helps to classify various sentiments based on the reviews collected and this classification how affects the productivity of business or affects the users of social networking sites.

3. LITERATURE REVIEW

J. Clement, Aug 14, 2019 in his article 'Number of global social media users 2010-2021'[1] reveals how Social media usage is one of the most popular online activities. In 2018, an estimated 2.65 billion people were using social media worldwide, a number projected to increase to almost 3.1 billion in 2021.

Federico Neri, Carlo Aliprandi, Federico Capeci, Montserrat Cuadros, Aug 28, 2012[2] in their article their article published in 2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining. This paper describes a Sentiment Analysis study performed on over than 1000 Facebook posts about newscasts, comparing the sentiment for Rai - the Italian public broadcasting service - towards the emerging and more dynamic private company La7. This study takes also in account the data provided by Auditel regarding newscast audience, correlating the analysis of Social Media, of Facebook in particular, with measurable data, available to public domain.

Walaa Medhat, Ahmed Hassan, Hoda Korashy [2014][3] in his article, 'Sentiment analysis algorithms and applications: A survey' published in 'Ain Shams University' reveals the electronic analysis of text thoughts, emotions, and subjectivity. This survey paper addresses a detailed review of this field's last update. The main objective of this survey should be to provide almost complete image with brief summaries of SA techniques and informatics. The major objectives of this article include the comprehensive categorization of a wide number of successful publications and the analysis of the modern trend in the study of sentiments and its specific areas.

Mika V. Mäntylä, Daniel Graziotin, Miikka

Kuutila[2018][4] in his article, 'The Evolution of Sentiment Analysis' published in 'M3S, ITEE, University of Oulu & Institute of Software Technology, University of Stuttgart' this paper represents a computer assisted analysis of the literature using both text extraction and qualitative processing and evaluating 6 996 scopus articles. They consider that the origins of SA are in the early 20th century public opinion research studies and the 1990s text subjectivity research carried out by the computational linguistics community. They consider that the origins of SA are in the early 20th generation public opinion research studies and the 1990s text subjectivity research carried out by the computational linguistics community.

4. RESEARCH METHODOLOGY

This is an exploratory research. The prime objective is to present the results of the impact on social media users and their classification of sentiments.

Here, first for the research a work flow chart for analysing the sentiments or views for the social media was constructed. Then as per the flow chart the social media tracking tool, the survey questionnaires and data from survey were collected.

Once the work flow chart plan was constructed, then secondly for the survey, Google online survey tool was used to collect the live data from the users for analysis. A total number of 11 questionnaires had been administered among the users of social media of several age groups starting from 18-80 years.

A Research Survey was conducted to figure out the impacts to achieve the research objective. The primary data was collected through the questionnaire directly from the public and the secondary data was collected from books, journals and magazines etc.

A sample survey was conducted because of the time and geographic constraints. Convenient method of testing was used. The data were collected from the respondents to learn about their opinions on social media. The survey measured the views toward the social media of users or consumers or business persons. Social media, including Twitter, Facebook, etc., where millions of people express their views through their day-to-day contact, which can be their feelings and opinions on particular things.

The next section of the survey deals with advantages of social media that means the positive impacts of social sites on the users. The third section of the survey deals with disadvantages of social media on users. The section four deals with consumers who gets influence by the reviews of business products. Data collected from the respondents has been shown in the bar chart and is followed by interpretation of the responses.

4.1 Sentimental Analysis Work Flow Chart

Step 1: Gather data from survey for sentimental analysis.

Step 2: Pre-processing data means the unnecessary information is eliminated.

Step 3: Select the required information from raw data format for which sentimental analysis approach is to be applied.

Step 4: Use the appropriate software monitoring tool for classification and analysing the sentiments for proper decision making.

Step 5: Gather the final outcome as the statistical ratios of sentimental analysis.

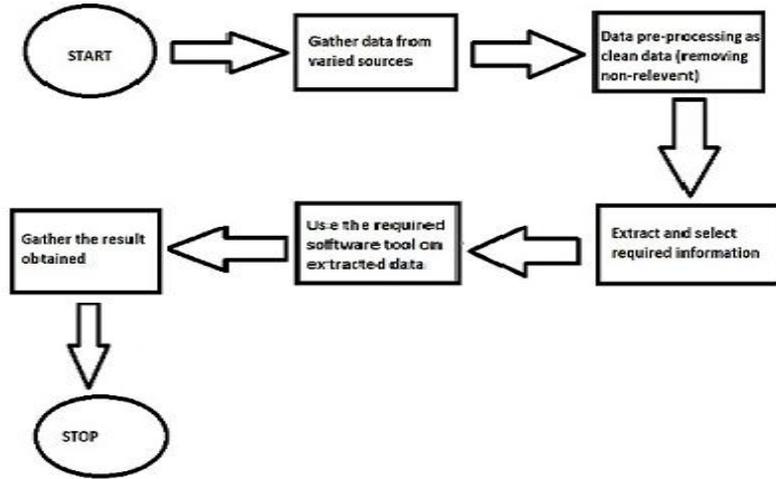


Fig. 1: Flow chart for working of sentimental Analysis. [prepared by researcher]

4.2 Survey for Sentimental analysis [prepared and conducted by researcher]

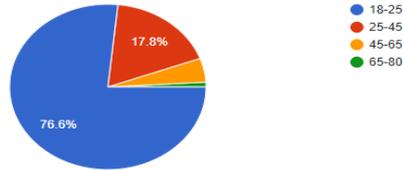
a. Raw data collected from the survey.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Timestamp	Email Address	What is your name?	Your Age Group?	Do you use social media?	Do you use social media?	What social networking?	Who do you use these on?	What are your personal best?	What emotions do you feel?	What do you believe are?	To what extent do you use it?	Do social media reviews?	Do consumers won't use?	Do social me																									
3-1-2020 0:02:28	manishkumarj@gmail.com	Manika	18-25	Yes	Yes	Facebook, Twitter, Insta	keep up with news/social sharing common interest	Positive	cyber-bullying, less soci	Positive	High	Yes	Yes																										
3-1-2020 0:30:45	manishkumarj@gmail.com	Adha	45-65	Yes	Yes	Twitter, Instagram, Link	keep up with news/social sharing common interest	Positive	cyber-bullying, time con	Positive	High	Yes	Yes																										
3-1-2020 0:50:51	manishkumarj@gmail.com	Snehal Mahabare	18-25	Yes	Yes	Facebook, Twitter, Insta	keep up with news/social sharing common interest	Very Positive	less social interaction, ti	Very Positive	High	Yes	Yes																										
3-1-2020 9:21:10	riya233@gmail.com	Riya sharma	25-45	Yes	Yes	Instagram, LinkedIn, Yo	keep up with news/social learn new skills, entertain	Neutral	cyber-bullying, less soci	Negative	High	Maybe	Yes																										
3-1-2020 9:23:36	sonali.1096@gmail.com	Sonal Singh	18-25	Yes	No	Facebook, Instagram, Li	keep up with news/social sharing common interest	Positive	cyber-bullying, unrealis	Neutral	Medium	Maybe	Yes																										
3-1-2020 9:34:33	zakaria08bandab@gmail.com	Sakari Bandab	18-25	Yes	Yes	Facebook, Instagram, Li	keep up with news/social staying connected with	Very Positive	less social interaction, or	Neutral	Medium	Maybe	Maybe																										
3-1-2020 9:37:03	chaitanyashinde2189@gmail.com	Chaitanya Shinde	18-25	Yes	No	Facebook, Instagram, Yo	keep up with news/social sharing common interest	Neutral	less social interaction, or	Neutral	High	Maybe	Yes																										
3-1-2020 9:40:17	shrutishah465@gmail.com	Shruti Dahi	18-25	Yes	No	Instagram, Youtube	keep up with news/social sharing common interest	Neutral	cyber-bullying, less soci	Neutral	High	Maybe	Yes																										
3-1-2020 9:41:30	sonali.arsab@gmail.com	Ashir	25-45	Yes	No	Twitter, Instagram, Yo	to feel a sense of belong sharing common interest	Very Positive	cyber-bullying, time con	Neutral	Medium	Yes	Yes																										
3-1-2020 9:42:14	rahalget1310@gmail.com	Rahul Gupta	18-25	Yes	Yes	Facebook, Instagram, Li	contact and connect with sharing common interest	Neutral	cyber-bullying, unrealis	Positive	High	Maybe	Yes																										
3-1-2020 9:44:43	ameyapradcop@gmail.com	Amey Pradcop Prabhu	18-25	Yes	No	Facebook, Twitter, Insta	keep up with news/social sharing common interest	Neutral	cyber-bullying, time con	Neutral	Medium	Yes	Yes																										
3-1-2020 9:45:32	anuragpachumbare@gmail.com	Anurag Pachumbare	18-25	Yes	No	LinkedIn, Youtube	contact and connect with digital reputation, stayin	Neutral	cyber-bullying, unrealis	Positive	Medium	Maybe	Maybe																										
3-1-2020 9:46:43	st.aryal@gmail.com	Sumit	18-25	Yes	No	Facebook, Instagram, Yo	keep up with news/social sharing common interest	Positive	less social interaction, ti	Positive	Medium	Maybe	Yes																										
3-1-2020 9:51:39	jinjalghedgaonkar9594@gmail.com	Jinjal Ghedgaonkar	18-25	Yes	Yes	Facebook, Instagram, Li	keep up with news/social sharing common interest	Positive	cyber-bullying, less soci	Negative	Medium	Yes	Yes																										
3-1-2020 9:52:41	anjali0919@gmail.com	Anjali	18-25	Yes	No	Facebook, Instagram, Li	keep up with news/social sharing common interest	Positive	less social interaction, ti	Neutral	Medium	Maybe	Maybe																										
3-1-2020 9:53:07	rohannababare09@gmail.com	Rohan nababare	18-25	Yes	Yes	Facebook, Instagram, Yo	keep up with news/social staying connected with	Neutral	time consuming, bad for	Neutral	High	Maybe	Yes																										
3-1-2020 9:53:07	mayedhans96@gmail.com	Mayuri	18-25	Yes	No	Facebook, LinkedIn, Yo	keep up with news/social entertainment	Positive	time consuming	Neutral	Medium	Maybe	Yes																										
3-1-2020 10:00:23	virishah2708@gmail.com	Virishah Singh	18-25	Yes	Yes	Facebook, Instagram, Li	keep up with news/social sharing common interest	Positive	cyber-bullying, unrealis	Positive	High	No	Yes																										
3-1-2020 10:00:51	ambharvi@gmail.com	Bhavana G.M	45-65	Yes	Yes	Facebook, Twitter, Insta	to feel a sense of belong staying connected with	Positive	time consuming	Neutral	High	Yes	Yes																										
3-1-2020 10:03:52	sushantbhosale2@gmail.com	Sushant Bhosale	18-25	No	No	WhatsApp	contact and connect with staying connected with	Negative	bad for young generatio	Negative	Medium	Maybe	Maybe																										
3-1-2020 10:04:16	neeraj@chacharya.com	Neeraj Kumar	25-45	Yes	Yes	Facebook, Twitter, Link	contact and connect with increase in business, stay	Very Positive	cyber-bullying, time con	Positive	High	Yes	Yes																										
3-1-2020 10:04:31	sahakarshahkar@gmail.com	Mansali Shahkar	18-25	Yes	No	Facebook, Instagram, Yo	contact and connect with staying connected with	Neutral	cyber-bullying, less soci	Positive	Medium	Yes	Yes																										
3-1-2020 10:06:43	seema7@gmail.com	Seema	25-45	Yes	No	Facebook, Instagram, Li	to feel a sense of belong sharing common interest	Positive	cyber-bullying, time con	Positive	High	Yes	Yes																										
3-1-2020 10:12:24	manishkumarj@gmail.com	Mital	18-25	Yes	No	Facebook, Instagram, Li	keep up with news/social staying connected with	Neutral	cyber-bullying, unrealis	Neutral	Medium	Maybe	Yes																										
3-1-2020 10:15:26	chakrat27@gmail.com	Kiranjesh Singh	18-25	Yes	Yes	Facebook, Instagram, Li	keep up with news/social sharing common interest	Positive	cyber-bullying, less soci	Positive	High	Maybe	Maybe																										
3-1-2020 10:15:51	pratikshahbhosale1997@gmail.com	Pratiksha bhosale	18-25	Yes	Yes	Facebook, Instagram, Li	keep up with news/social staying connected with	Positive	cyber-bullying	Neutral	Medium	Maybe	Yes																										
3-1-2020 10:24:38	pampodkar3652@gmail.com	Pampa	25-45	Yes	Yes	Facebook, Twitter, Insta	keep up with news/social sharing common interest	Positive	cyber-bullying, less soci	Positive	Medium	No	Yes																										
3-1-2020 10:27:21	ashik@gmail.com	Ashik Kudam	25-45	Yes	Yes	Facebook, Twitter, Link	keep up with news/social sharing common interest	Very Positive	cyber-bullying, time con	Very Positive	High	Yes	Yes																										
3-1-2020 10:30:03	shilpaibans26@gmail.com	Shilpa	18-25	Yes	Yes	Facebook, Twitter, Insta	keep up with news/social sharing common interest	Very Positive	negative feelings/ emoti	Very negative	Medium	Yes	Maybe																										
3-1-2020 10:34:04	shamoli03@gmail.com	Shamli Vishnu Kobal	18-25	Yes	No	Instagram, LinkedIn, Yo	keep up with news/social staying connected with	Neutral	less social interaction, ti	Neutral	Medium	Maybe	Maybe																										
3-1-2020 10:35:42	pampodkar3652@gmail.com	Pampodkar	45-65	Yes	No	Facebook, Instagram, Yo	to feel a sense of belong increase in business, digi	Positive	time consuming	Positive	Medium	Maybe	Yes																										
3-1-2020 10:44:32	priyankasharma1995@gmail.com	Priyanka sharma	18-25	Yes	No	Instagram, Youtube, Wh	keep up with news/social staying connected with	Positive	time consuming	Positive	Medium	Maybe	Maybe																										
3-1-2020 10:52:17	manjishankar3003@gmail.com	Manjishankar	65-80	Yes	No	Facebook	contact and connect with entertainment	Neutral	bad for young generatio	Neutral	Medium	Maybe	No																										
3-1-2020 10:55:32	aksharidh2395@gmail.com	Piddhi akshar	18-25	Yes	Yes	Facebook, Instagram, Yo	keep up with news/social sharing common interest	Very Positive	bad for young generatio	Very Positive	High	Maybe	Yes																										
3-1-2020 10:59:21	bliveddudu098@gmail.com	Bhiveddudu	18-25	Yes	No	Facebook, Instagram, Yo	contact and connect with sharing common interest	Neutral	less social interaction, ti	Neutral	Medium	Maybe	Maybe																										
3-1-2020 11:00:30	hasthali09@gmail.com	Zeba	18-25	Yes	No	Facebook, Twitter, Insta	To support small staying connected with	Very Positive	time consuming, unreal	Positive	High	Maybe	Yes																										
3-1-2020 11:05:45	rupalipuro240@gmail.com	Rupal	25-45	Yes	No	Facebook	keep up with news/social learn new skills, entertain	Neutral	negative feelings/ emoti	Neutral	Low	Maybe	Maybe																										
3-1-2020 11:08:43	pranprabhakar28786@gmail.com	Pratiksha Pawar	18-25	Yes	No	Facebook, Instagram, Li	keep up with news/social staying connected with	Positive	less social interaction, ti	Positive	Medium	Maybe	Maybe																										
3-1-2020 11:10:43	pranprabhakar28786@gmail.com	Pratiksha Pawar	18-25	Yes	No	Facebook, Instagram, Li	keep up with news/social staying connected with	Positive	less social interaction, ti	Positive	Medium	Maybe	Maybe																										

b. Graphical representation of the final outcome from the raw data.

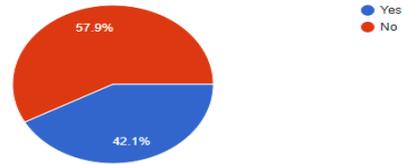
**1. Your age group?
business?**

Your Age Group?
107 responses



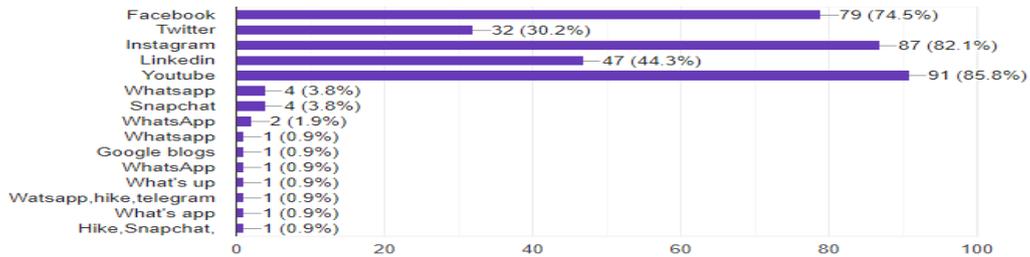
2. Do you use social media as a part of job or business?

Do You use social media as a part of job or business?
107 responses



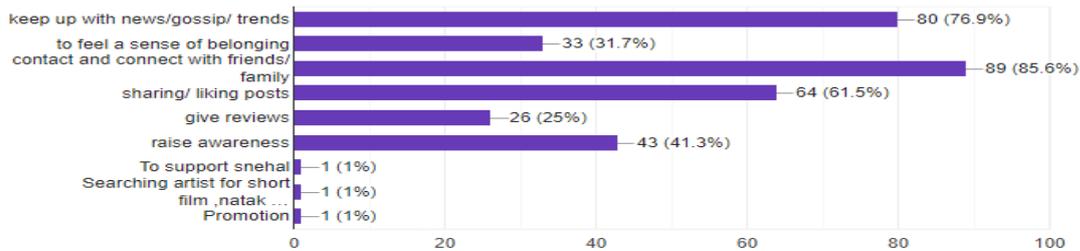
3. What social networking sites do you use?

What social networking sites do you use?
106 responses



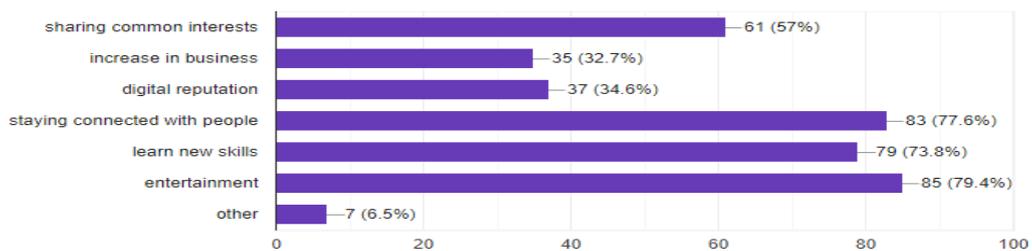
4. Why do you use these social networking sites?

Why do you use these social networking sites?
104 responses



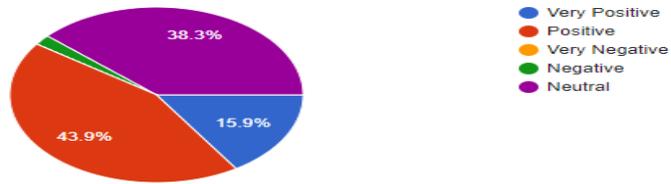
5. What are personal benefits of using social networking sites?

What are personal benefits of using social networking sites?
107 responses



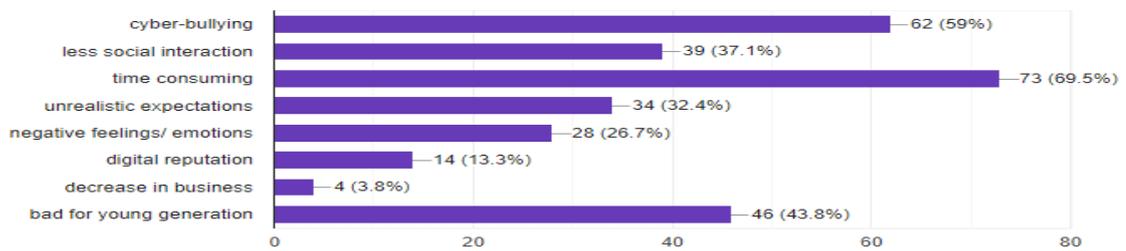
6. What emotions do you experience when using social networking sites?

What emotions do you experience when using social networking sites?
107 responses



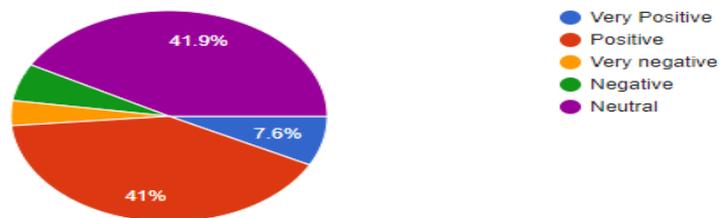
7. What do you believe are the disadvantages of using social networking sites?

What do you believe are the disadvantages of using social networking sites?
105 responses



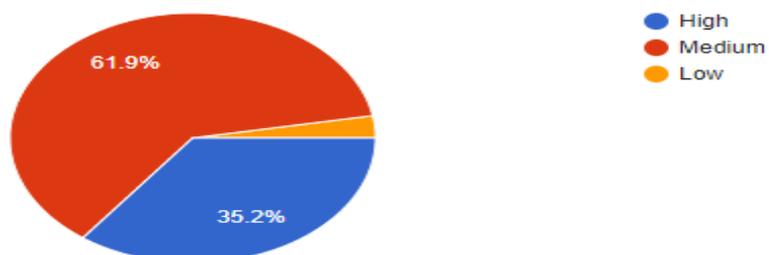
8. To what extent do you think social networking sites are impacting your overall wellbeing?

To what extent do you think social networking sites are impacting your overall wellbeing?
105 responses



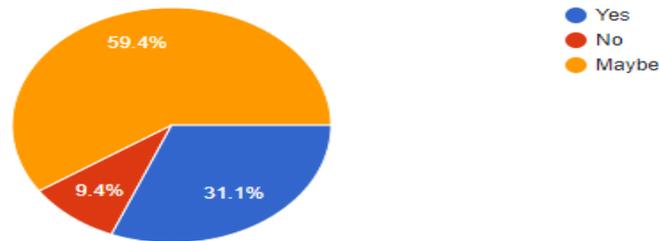
9. Do social media reviews influence the consumer buying behaviour.

Do social media reviews influence the consumer buying behaviour.
105 responses



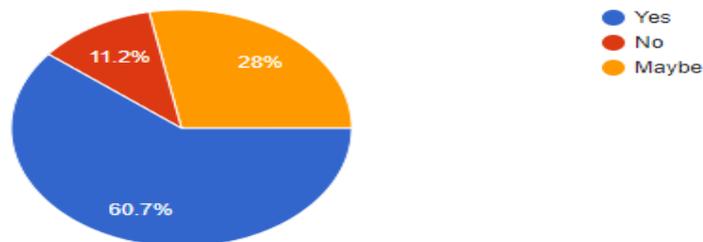
10. Do consumers won't use a business product if it has less than a 3* rating ?

Do consumers won't use a business product if it has less than a 3* rating
106 responses



11. Do social media help the brand loyalty and brand enthusiasts?

Do social media help the brand loyalty and brand enthusiasts?
107 responses



4.3 Impact of reviews data received between 2017-2020[1] [5] [7]

We need to understand the basics of search rankings to understand the impact of the comments. Simply put, search engines rate Web sites based on authority perceived. Authority is based on a number of variables, including the age and scope of a website.

The following study was carried out on the feedback showing comparative effects on different users and websites that were received between 2017 and 2020

1. 91% of millennial trust online reviews as much as friends and family.
2. More than half of consumers won't use a business if it has less than a 4* rating.
3. 82% of consumers visit review sites because they want to purchase a service or a product.
4. Google accounts for 57.5% of all reviews worldwide.
5. Facebook affects more than 50% of consumers' purchase decisions.
6. More than four negative reviews about a company or product may decrease sales by 70%.
7. 86% of people hesitate to do business with a company if it has negative online reviews.

5. SENTIMENT ANALYSIS APPROACH



Fig:-Different Emoji's for Expressing Sentiments

Examination of the feeling helps you to automatically identify the meaning of the emotion in a document. Thanks to Human language Processing (HLP), it is possible to create systems able to understand the viewpoints involved in interactions of all kinds and gaining valuable insights about products and services.

It may also be used by companies to evaluate all types of internal data, such as NPS surveys, employee surveys and customer support chats, just to name a few examples. Whether positive or negative, Viewpoints are strong. They can boost or ruin the reputation of a company within the digital world.

Statistics data show that after studying two-three online reviews, 40 percent of buyers form an opinion of a company, and that 64 percent of software buyers read at least 6 online reviews before making a purchase, giving us an idea of how important it is for companies to monitor the discussion around them and reveal the feelings behind what is being said.

Example of sentiment analysis---

Analysis of sentiment studies subjective information in an expression that is thoughts, evaluations, and feelings even attitudes towards an issue, individual, or entity.

For example in this case:

- a. "I love the website's new design!" is a Positive approach
- b. "I am not sure I like the website's current design" is a Neutral approach
- c. "The new design is awful!" is a Negative approach

In addition to defining polarity, advanced sentiment analysis systems may extract other relevant attributes such as the subject (the subject matter, individual, person, or event to which the opinion refers) and the opinion holder (the person who expresses the opinion).

Because human experience is complex, and often contradictory, it is hard for machines to understand those sentences.

Some of the greatest challenges of an examination of emotions are focused on understanding implicit attitudes (such as metaphors), sarcasm, and polysemic terms.

A tweet, for example, that says ' Wow! That is great customer service now! # NOT, is simply using irony to convey unhappiness.

Sentiment analysis is a powerful tool in certain business areas, such as social networking sites management, marketing, product, and customer support, that can greatly impact. These are some of most popular methods for an analysis of sentiments:

6. CONCLUSION:

The systematic literature review conducted provides information for research on expression of feelings in social media or social platforms. The paper makes the contributions which follows. Firstly, what are the methods can be used to analyze the feelings of the different social platforms. The proper method of analyzing sentiments depends on the data itself. Both methods exhibited similar precision. The things that need to be taken into account are the text structure, the time and the data platform. Different tools can be used to extract data.

Second, we have used Google online survey tools to display the statistical ratios to compare what is the most common type of social media site to extract sentiment analysis information. The survey shows the impact of various reviews on the users and their opinions for various social platforms. The content of each social media could be different, and exploring other sources might open up new knowledge and findings are worth exploring. Sentiment analysis is widely applied and can be used in various areas such as improving business efficiency and strategy, political forecasting of election results, tracking disease outbreaks, raising awareness of the value of data security, understanding of a particular sport, and enhancing location and disaster response. This shows that an analysis of sentiments plays an enormous role in understanding perception of people and helps in decision making.

More investigation is needed for future guidance to establish a standardized model of sentiment analysis that can be applied to a particular type of data, explore other possible social networking sites to obtain user opinion and extend the context of the application of sentiment analysis.

7. REFERENCES

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