

## RESEARCH ARTICLE



# Connect with Student-Educational Consumer Brand Management Engagement: A Social Media Management Perspective

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**Abstract:** Social media empowers individuals to express their views regarding the events that take place in their day-to-day life. These events also incorporate the sentiments of students as well as educators toward their educational institutions. Thus, the study aims to analyze the sentiments of the students regarding their educational institutions to hike consumer brand management. However, understanding the student at all levels of his being (physical, mental, emotional spiritual) is crucial to generate valuable learning and bringing forth a sense of belongingness. The study proposes to use social media platforms to connect, understand, and engage the students at the professional as well as personal levels. **Design/methodology/approach:** Sentiment analysis using vectorization and polarity has been applied to data collected from tweets of several leading universities of the world with their social media appearances to acquire significant insights into the objective of the study. During the analysis, it has been observed that symbol such as #hashtags and @ has played an intensified role in arousing the emotions of the individuals which eventually contributed to the branding of a particular designated university. **Findings:** Sentiment and emotional identification play a significant role in increasing brand value and nurturing the relationship between the student and the educator. It has been observed from the study that a sense of intensified community building is promoted which encourages new individuals to become a part of the reputed universities. **Research Limitation/Implication:** Since the field of education plays a great important role in the policies and economy of every country, students are the driving factors of this sector. Hence, it is important to identify the emotion and sentiments of an individual regarding each small role that he goes through while studying. The university plays a very important role; thus, the study focuses on how each activity in the university affects the sentiments of a student and at the same time, it targets the nurturing of the student–educator relationship. The study focuses on how distinctive activities at the university level, their implication, and engagement at social media platforms affect the student’s sentiments. The study is limited to the student–educator relationship. The present study contributes to the increase in consumer brand participation through emotion analysis and natural language processing methodology. **Practical Implication:** It refers to the fulfillment of certain conditions that if gets fulfilled will change reality to some extent. In this study, we have incorporated different tweets collected from several top universities across the world, since the data are in the form of tweets it has been processed to be subjected to analytical purposes. The practical implication for the study lies in the collection of datasets as the core of the study is the tweets that form the dataset. **Social Implication:** The social implication of the study is the representation of the sentiment of an individual regarding his or her university activities (quality of education, research activities, etc.). After the analysis, a sense of pride has been observed among the student regarding the achievements of their educators and university. This not only inculcates a sense of belongingness among a group but also leads to the engagement of the student–educator relationship which further nurtures the policies of the educational universities to increase the brand value and consumer engagement. **Originality/value:** Engaging students on social media platforms not only urges them to pursue it as a

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crucial medium of information but also brings a sense of pride to be part of their university. The study’s findings not only contribute to the current understanding of sentiment analysis in brand engagement but are also important to develop a sense of belongingness in the students toward their educational institution which further nurtures the student–educator relationship management.

**Keywords:** engagement, higher education, learning, management, marketing, social media

### 1. Introduction

Brand communication management means reaching an important value that can contribute to institutions at the highest level in today’s conditions, where the competition is harsh and therefore it is imperative to differentiate from the competitors. Institutions with strong brands differ from competitors in the minds of consumers. The products and services of these institutions are preferred by consumers more, and thus the advantage of gaining superiority in competition is raised. The institutions that gain the upper hand in competition through their brands receive the reward for their brand communication management efforts as financial gains. The critical role that strong brands play in terms of financial success and contributing to the financial performance of institutions exposes us to the need to manage brand communication strategically.

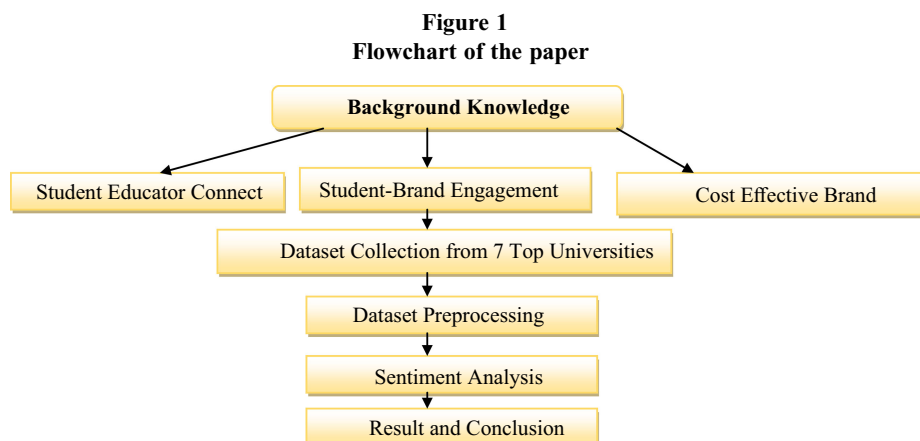
Brand communication is a strategic process that deals with maintaining the communication of brands with their target audiences. It is known that brand managers use various communication tools when carrying out communications for brands. These communication tools can be subjected to a binary distinction in terms of the use of traditional media and the use of new media in terms of brand communication. The use of traditional media is frequently used in the management of brand communication. In addition to effectively using traditional media in terms of communication, it offers numerous opportunities for new media brand communication management that brings brands and audiences together in environments with interactivity and supports two-way communication and dialog.

To include brand-oriented messages in traditional mass media that are not under the control of enterprises, newsletters, explanations, and materials prepared for the media must be news. It is not in line with today’s contemporary professional ethics to request that material that is not news be sent to the media and published or to press for the publication of various promises to the members of the media. It can be said that the new media that emerges as a result of new communication technologies reduces

the need for traditional media as businesses present a new alternative to traditional mass media that is not under their control. New media has been frequently used as communication tools under the control of enterprises and has come to the forefront because it has some features that traditional media cannot provide. Therefore, it is very important to consider the new media and the brand communication efforts that arise as a result of the new media during the realization of communication processes between the brand and the target audiences. Social media has emerged as a crucial platform to brand building. The use of social media has significantly increased. Brand building from the perspective of social media has been crucial in the world of digitalization. Social media use is enhanced over the years. In 2005, the use of social media, according to the Pew research center report, was 5% of American adults which increased in 2021 to 72%. The research shows that the day-to-day life has largely been affected due to engagement with the World Wide Web over traditional media [1]. Hence, over the years, the traditional media has thoroughly been displaced by the new media [2]. Universities globally are observed, taking use of social media platforms to establish themselves as a brand in higher education (HE). It is natural that over the period, social media has emerged as a phenomenon because of its multiple functioning, from the dissemination of information to the development of the community, and to the purpose of communication [3]. In the beginning, the use of these platforms was limited at the time of students’ recruitment. However, the role of new media has significantly increased. The flow of the paper is represented in Figure 1.

### 2. Background Knowledge

Social media leads innovations in four different dimensions: to learn from the content; to create the content; to connect learners, and to support collaboration between students and teachers. Social media happens to create a sense of connection between the students and the institution [4]. Above all, almost all types of needs, especially social



and emotional needs, are catered by social media sites [5]. The impact of social media has majorly transformed the traditional style of delivering education [6]. As the study reveals that learning in a real sense could be possible by implementing well-organized active learning rather than passive learning. This is evident that if social media platforms are used intelligently and strategically, they could provide prolific results. The institutions should endure to explore and open distinctive methods of communication to engage the consumers with mediums like blogs, Instagram, Facebook, and other promotion tools [7]. The presence of the university on social media should be well-maintained as it provides a crucial link to the candidate to choose the university and to decide whether the university is right or not for him [8]. Student of present times is more comfortable with new media platforms. They would like to spend more time on Instagram, Snapchat, Blogs, Facebook, etc. Social media creates more dynamism than traditional media. The simple reason is that it creates a thread of collaborative participation, which allows the community to remain in constant conversations by generating meaningful relationships [9]. There is a need to understand that the institutions are not just for teaching and learning, but these places are also used to connect as well as to network. Social networking sites are being used to connect with friends, reconnect with long-lost classmates, to get an update about the news and day-to-day developments [10]. Using social media as a counseling tool is interesting. The potential of social media as a worthy communication channel could be used as a tool for building relationships and “public engagement” [11]. Hence, it is evident that social media is not just a platform for accessing information but people are also benefited from it, for building relationships and “emotional support.” Despite at the present outset, except few universities, it seems at HE, the student’s involvement with social media platforms should be used widely but has still not been fully employed by educators worldwide.

### 2.1. Student–educator connect

The establishment of a brand relies on building trust and connectedness with the consumer. The consumer of a college is an adult, each carries a specific individuality. Social media has immense potential to bring people from all around. The potential of social networking to build a network, friendship, and “connectedness” has been well recognized [12]. It is observed that the aspiring candidates of the university mostly get connected online even before meeting with each other. Social media networks are a convenient tool for them to connect before meeting on campus. They connect, talk, chat, and know each other online before they meet physically. Networking, bonding, and connectedness play a crucial part in the life of a college student. Hence, one should realize that building a brand of the university fundamentally depends on establishing a long-lasting emotional connection between a student and an educator. People with distinctive identities meet in college and eventually associate with one community. The identification with the brand builds a community that associates everyone with the brand which enhances understanding and reduces judgment [13]. At this juncture, the role of an educator is central. Any possible gap between educator and student disseminates dissatisfaction among the students. The utilization of expectations and current needs/wishes of students needs to be checked to measure the

satisfaction level of the customer [14]. The education sector like any other business aims to satisfy its consumer [15].

Naturally, universities are constantly working on a consumer/student-centric model. Besides regular teaching–learning, systematic interaction is also required with students. Regular checking by the educator enhances the social–emotional support which eventually builds rapport with the student. The rapport and the reputation of any university are detrimental to satisfaction [16]. Social media platforms open the possibility to connect and fill the gap between students and educators. The research shows that millennials and generation Z tend to connect more on the Internet. The Internet provides information as well as entertainment to people. The study shows that the “Web” could be perceived both positively and negatively. However, those who connect to the Internet for information or entertainment remain positive about the “Web” [17]. The information on the Internet is not static, the way it is in a book or a newspaper. Here, the information is dynamic where Internet user keeps on sharing the information by using social networking tools [18]. The Internet gives liberty to the user to respond to information in multiple ways. So, information is disseminated in distinctive ways. The information could be shared, created, recreated, liked, loved, and commented on online [19]. The type of content the user shares, likes, comments, or assesses also suggests the likings of the consumer. The chain of information essentially contributes as a significant source of “behavioral learning paths” [20]. It is interesting that chatting on WhatsApp or commenting on Facebook perceive to be less stressful to the students than interacting in the classroom sometimes. People appreciate the convenience of sharing their views and knowledge using Weblogs. The comfort of the consumer with the Internet should be utilized by the universities by encouraging the students to share the content as well as to build a constructive human network [21].

### 2.2. Student brand engagement as co-creators

The 2021 social media industry report noted that the trend in the HE sector is more focused on Instagram and Twitter. The report further suggests toward HE engagements in social media, to keep the focus on Instagram and Twitter. The use of Instagram is performed in the form of “carousels,” whereas videos and statuses are uploaded on Twitter (retrieved October 27, 2021, from, 2021 Social Media Industry Benchmark Report-Rival IQ). The acknowledgment of new media and wider media by the consumer of the institutions is crucial [22]. Like any other business, education businesses should also recognize the need for “customer engagement.” The consumer at HE is dynamic and vibrant and might not be an expert in his enrolled course but is already skillful in creating, editing, and producing videos, content writing, and images. The engagement of this tribe of consumers might be easy by involving them in co-creation. The involvement of the consumers with the institutions is directly linked to making of the “brand loyalty” [23]. The engagement of the customer with the brand also co-creates the customer experience [24]. Collaboration is of great importance to almost every enterprise, and social media is an able tool to collaborate and work with others. Thus, the communication of some common attributes on social media demonstrates the commonality which builds a brand personality [25]. The popularity of the functioning of hashtags to generate content is common in education sectors these days.

For instance, Harvard with 2M followers on Instagram drives the pride campaign. The campaign involves its students delivering

their views on the difficulties faced by LGBTQ, black women, and the queer community. In one such post, Diego Garcia Blum, a fellow at the Center for Public Leadership at the Harvard Kennedy School, writes, “In the closet, the rainbow LGBTQ flag terrified me. During Pride we recommit to reject the discrimination we experienced in our lives, to love ourselves fully, and to keep fighting for those who still need it.” With 17,678 likes and 92 comments to the post, one follower comments, “so proud to call @diegogblum my friend and classmate.” Involvement with the consumer in the true sense is only possible by understanding consumers’ needs, interests, and values. It is intelligent to involve the consumer to make him feel connected. Listening and opening interaction with the audiences in social media makes them feel more connected to the organization [26]. With this type of engagement, the flow of learning is practical and experiential [27]. Facebook opens up plenty of opportunities to create positive educational experiences for its students. In another example of consumer brand engagement, Stanford and Yale Universities introduce their new students and feature the biography of the professors on their Instagram and Facebook pages. Personal stories on social media by the consumer create a significant impression, as these stories are more likely to be shared, repeated, and remembered [28]. Sense of belongingness is viewed as fundamental to the existence of a group that is highly inter-correlated by this reciprocal relationship. Therefore, a sense of belonging among the consumer could be created by engaging them with the brand [29]. The student of the digital era deeply associates and connects with information on digital platforms. The social media posts on their profile page are part of their lives. It is necessary to be in touch with them through social media. The connection via social media with a student helps build a strong relationship between the student and educator, at the same time sharing of information also creates a dynamic of “co-creation” [30]. Hence, it is necessary to value the customer in the space where he is comfortable the most. The recent study is indicative that posting the personal success stories of the students strengthens the association which further builds a positive brand community [31]. The research reports that students feel enthused while sharing their interests and learning [32]. The educator needs to ignite the learning part of the information to build a community of learning on social media. Hence, social media builds a free space by being student centric where everyone is allowed to present their opinions [33]. It is not possible to create this type of freedom in a traditional classroom setup with limited time and space. Knowledge sharing on social network pages creates a real and positive learning experience [34]. In that respect, a genuine discussion could be possible by maintaining the balance between everyday life experiences and the sociological concepts taught in lectures [35]. Involving the learners with the educators while setting the mode of teaching as well as developing the curriculum is important. Effective teaching–learning could be possible only by engaging students as “active participants” [36]. As it is, the consumer in the education sector consumes the information and further on that base creates an opinion about the information. In that context, it is much needed to engage him psychologically [37]. The principal role of an educator at the HE level should be to promote a constructive teaching–learning environment. The in-depth study also shows that discussion other than academics also tends to create meaningful learning [38]. Student brand engagement builds a positive relationship of cooperation among the community [39]. In

the present context, social media tools could be significant in generating a cohesive and comfortable environment of learning and brand building in an informal setting by catering to the digital habits of the students [40]. These informal mediums of social media could also be synchronized with formal teaching–learning. Thus, “multimodal literacy” dynamically allows us to know and update innovative ways of learning engagements. The update in teaching–learning methods could only be possible by co-creating the content in sync with the students’ concept of personal life experiences, academic concepts, and practices of utilizing consumer space at new media [41]. Wikipedia has constantly been performing to thrive in online communities by engaging students in developing the content while maintaining pioneering projects. Wikipedia uses the virtual space in education by allowing public visibility [42]. The global public visibility of the projects on Wikipedia also breaks the limited space between a student and a teacher. In the virtual space, everyone is creating, co-creating, and simultaneously learning. Social media has tremendous potential to shift the conventional teaching–learning pattern. The unique selling proposition of social media is that it has distinctive platforms of expression with mass appeal: Instagram, Facebook, WhatsApp, Twitter, etc. [43]. Educators and students are free to choose the platform for brand engagement in social media. The platform is also found to be used for study purposes [44]. Facebook is a networking site, based on networking, collaboration, and “people’s engagement.” This flexible nature of Facebook has turned out to be “an advantageous teaching resource” where one can freely interact and discuss with a group of similar interests by also maintaining a connection with past, present, and future students of the university. Hence, formalized literacy practices in educational settings could become effective if constantly enfolded and enmeshed.

The selection of the university is done based on its popularity and interesting engagements by them on social media. It is interesting to observe how are, these informal platforms, formalized, to engage with their students and other stakeholders. The hashtag (#) at the rate (@) is the popular nomenclature of millennials which has interestingly been customized by these universities. With a huge following of 1.9M, Harvard University at Instagram supports pride, to get engaged with the cause of LGBTQ, black, and brown trans-women [45]. The post with pride features a student with his/her views about the cause. The followers give their views in the comment box. The free flow of comments forms a constructive dialog which also bridges the gap and ultimately builds a strong bonding. Stanford University uses social media to break the ice and build a strong relationship with its stakeholders, especially students [46]. Students are encouraged to express their personal stories which ultimately boosts the sense of community. In such a post, the biography of the student is written under his/her profile picture. #Stay TogetherAsBuckeyes drive is a good example, initiated to support the Buckeyes. Listening to someone leads to understanding, and understanding is the prerequisite for building long-lasting relationships. As educators must understand their student’s academic and social backgrounds before reflecting and planning their lessons, the pedagogical techniques they intend to use and the types of assessments that they believe will highly engage their students in the learning process [47].

The love stories of students are tweeted by Buckeye Love. Yale University took the initiative of making short clips of the campus, keeping the natural sounds in the background. The recordings of

rhythmic sounds of snowfall, the blowing of the wind, and the ringing of church bells are insightful, to reconnect with students who were disconnected after the pandemic breakdown. Yale also tweets to tip students on maintaining a work-life balance. Posting photos and tagging them are observed as a common habit, among millennials and Princeton invites its followers to post their photos and tag them. By giving space to all types of students on the social page of the university produces holistic engagement. Hence, unlike the restricted physical classroom settings, social media offers autonomy to users, to participate virtually, any time all time. Featuring special content via GIF TikTok ([titok.com/@lsu](https://www.tiktok.com/@lsu)) by LSU is an innovative, yet intelligent medium, to engage the students through the apps which they like to use as well. In today's world, the impact of emojis cannot be ignored and the evolution of social media is an important reason behind the popularity of emoji culture. It is noteworthy to discover the post by the Ohio University on World Emoji Day (retrieved October 26, 2021, from [fb://photo/10161238828313858?set=a.72798423857](https://www.facebook.com/photo/?fbid=10161238828313858&set=a.72798423857)).

There are certain aspects of life like human values, which would always be challenging to teach but are crucial. In this regard, the #BeKind drive by Ohio University involves the students in promoting kindness which brings forth many possibilities to induce kindness among the participants. These days, personal vlog-making and creating content for YouTube are quite common. It seems to be an innovative step by the University of Michigan, to engage their students, in creating vlogs, to spread the university message. The recently uploaded vlog received 3.5K views. The table specifies the followers which further indicates that the university pages on social media about the sport and especially football receive the maximum viewers. The posts which make the student at the center also receive a good response. The research reports and news also engage the students, constructively. In the virtual environment, people tend to share on social networks. It is important to acknowledge the popular activities among the students, and the popularity of any activity could be measured by the number of viewers, likes, shares, and comments. There are a few topics of the post that are popular among the followers: athletics, updates on university news, the highlight event of the university, and admissions. It is worth to note down that the quality content, catering to the needs of the consumers, creates active participation to further enhance the brand value. However, social media is a virtual platform but it is much easier to measure the impact of a post from the post's likes, views, and comments. All those activities which receive attention from the students could be further utilized to establish a strong connection with the students. Hence, what universities show on social media and how the users respond to it are interrelated. The number of views, likes, comments, and shares ultimately marks the success or failure of the post. However, the stakeholders should be careful about the expectations of the users before posting on social media. If the post does not match the expectations of the users, it could drive negative results. Another aspect of positive brand engagement is the activeness on social media by uploading regular posts; otherwise, the vacancy of posts would lead to a negative impression among the students. It is essential to make use of social media intelligently. There are majorly two types of engagements on social media: entertainment and social use [48, 49]. The use for entertainment purposes is addictive, whereas the use for socializing would help to enhance the "subjective well-being." The constructive use of social media is possible and should be encouraged by educators and parents.

### 2.3. Cost-effective brand engagement

The study report suggests that 58 out of 100 aspirants while selecting an institute do visit the social media platforms of schools. The report reveals that the aspirants value more to the comments and posts shared by the students more and give less attention to the sponsored posts. Interestingly, the customer is intelligent enough to analyze the university branding from the perspective of the current student. It seems that aspirant or prospective customer is much more likely to take interest in the engagement. At the same time, it is easy to quantify effective brand engagement by analyzing the response of the consumer. However, marketing in the education sector is dynamic which is dealt with humans and not just products. One needs to be alert to be in regular touch with the customer, as brand building depends on constant performance and satisfaction of the people. Sharing of information is a significant way to remain in the market, simultaneously it is a tool for building a healthy relationship. In the education sector, the university needs to provide adequate resources with constructive learning in response to "value for money." Social media engagement should be treated as a prominent part of university marketing. The traditional marketing approaches have been constantly changed especially in a higher education institutions (HEIs). Due to the increasing popularity of social media and its cost-effectiveness, the marketing for HE via social media has increased. At this juncture, one needs to be also attentive as social media is an open public platform where a student is free to visit and search all the public domain social media sites. He has freedom with a greater scope to compare, regulate, react, and comment publicly upon the actions of his institution as well. It is evident that as a market strategy, universities mostly project the campus experience as unique to sell better in the market. However, the experience of a place is subjective, but the beautiful pictures of the campus, images of activities, comments, and reactions by the students have the potential to create an impression of an experience associated with the university. While marketing and displaying an image of the university on social media, one must keep a fine balance among the aspirant students, current students, alumni, parents, and followers. It is clear that in HE, the engagement of students on social media platforms through testimonials and interactions enhances the experience of the student as well as elevates the reputation of the university. A student speaking with a sense of pride about his institution impacts largely in comparison to any other actors in an advertisement. Creating and ultimately co-creating powerful content at these platforms not only urge students to pursue it as a crucial joint to get worthy information but also gradually become significant brand ambassadors. In the social media platforms like Facebook, Instagram, and Twitter, the content is created, posted, and shared which by default allows "many-to-many media usage." The content "worthy posts" on new media is more likely to be shared by the students which further creates not only the bond but also the branding. The phenomenon of sharing posts exposes them to many folds which are crucially designed to viral the posts. Sharing content is an experiential moment where an individual shares worthy information with his network of acquaintances. It is a feeling of satisfaction to find something useful. With evolving technology, the web space is based on its consumption and diffusion. The visibility of popular posts would increase by default. Presently, social media sites are filled with content but still, quality content is missing. The content on Instagram, Websites, Facebook, and Twitter is user generated, and the social media platforms make

business by attracting advertisers. The basic principle of Twitter is to share information that rebuilds itself in the form of retweets, comments, and likes. Even social media sites also share the advertising revenue with contributors. Using social media for marketing is a win-win situation because it costs less, whereas engagement with customers is the most. Moreover, creating the content with a conscious effort could increase the brand value and its reputation. Hence, before posting the content, one needs to acknowledge the interest of the target customer. The interesting and worthy content on social media would be liked, commented, and shared even by outsiders and followers. University is a place where events almost of kinds are happening, from academics to extracurriculars; from research to culture; from studies to sports, etc. Hence, it is easy as well as difficult to select the highlighted events from the perspective of the likings of the target customer. The chances of exemplary work becoming viral are the most and perform better than any other sponsored advertisement. Moreover, advertisements of any university do not attract the student (as the consumer) much so they are less likely to get involved in the process of promotion. Overall, the whole process of brand engagement of selecting, creating, posting, sharing, and eventually making the viral post is cost-effective. The popularity and legitimacy of the post also depend on the individuals who share the post. Users believe in the posts which are shared by the trusted individuals in their network. For example, the chances to trust the institution turn out to be higher when a successful person or an influencer promotes the institution. The sharing of content ultimately increases the reach of the content which further increases the brand value. However, one needs to ensure the quality of the content to increase constructive brand value.

### 3. Proposed Methodology

Distinctive interactive behaviors of versatile learners trigger different emotions and lead to more intensified discussions. The field of natural language processing (NLP) is made up of two important words: sentiment and emotion. These terms are subjective but have different perspectives according to the individual’s psychological prospect. Emotion defines a complex psychological state, whereas sentiment is a mindset attitude that is devised due to the existence of a particular emotion. This diversification between emotion and sentiment arises due to the variant individual’s experiences; these experiences are a combination of cognitive, psychological, and social aspects. It has also been observed that out of sentiments and emotions, sentiments are a way ahead than emotions because they are not psychologically restricted. Sentiment analysis is apt for observing

an individual’s opinion regarding a specific fact, and this opinion or attitude could either turn out to be positive, negative, or neutral. These three terms are referred to as the sentiment polarity measured between zero and one. However, sentiment analysis is prone to opinion mining, but it is also connected to the testimony and interpretation of emotionally loaded opinion.

#### 3.1. Dataset for sentiment analysis

In today’s digital world, we are witnessing social media as an emanate repository of Big Data, which are high in volume and veracity. This study involves seven leading universities of the world with their social media appearances to acquire significant insights into the objective of the study. Table 1 describes the number of followers on the social media platform for each of the universities.

The dataset subjected to sentiment and emotion analysis comprises tweets and posts (containing audio and video content). The posts were more focused on the campus activities and activities related to promoting new and ongoing research. During the analysis, it has been observed that a symbol such as *#hashtags and @* has played an intensified role in arousing the emotions of the individuals. Individuals use these hashtags to explore all the posts related to their universities which eventually contributed to the branding of a particular designated university. In Table 2, we have presented a glimpse of some of the posts and tweets from the seven universities.

After analyzing the tweets, the polarity of the sentiments is positive and neutral and no negative sentiment has been encountered from the tweets. This reveals that there is a sharpened relationship between the stakeholder student and the designated university. There is a sense of pride being expressed in the posts related to the universities research program and for many other

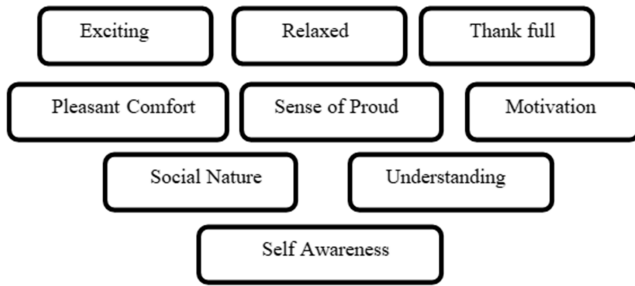
**Table 1**  
**Follower’s percentage**

University name	Follower percentage
Harvard	53
Stanford	12
Yale	11
Princeton	5
LSU	6
Ohio	6
University of Michigan	7

**Table 2**  
**Tweet from the University**

University	Post and Tweets
Harvard University	In the post, <i>Gratitude at Harvard</i> , Jena Line comments, “I’m so grateful, last month I was able to fulfill my high school dream to see Harvard University in real. Dreams are possibilities. Cherish your dreams” In the post, <i>Fall views from around Harvard’s campus</i> , Sitotawu Robel Folla comments, “#Harvard the next year, 2022. I will be studying #computer science there. Prepare a place to me dear#Harvard
Stanford University	In the post about <i>Researchers at Stanford are working to develop a single-dose vaccine for SARS-CoV-2</i> , Linsters Odyssey comments: And then once you have one only give it to the rich folks . . . Right?! The Stanford Way. You all sicken me with your BS Luis Alberto CACERES WRITES: Very interesting article. Well done Stanford!! Michael Maurice writes: Stanford Immunology is awesome!!!

**Figure 2**  
Identified dimensions of the emotion



activities. Figure 2 presents the dimensions of emotions identified through the analysis.

### 3.2. Preprocessing and feature extraction

The data posted on social media are currently being termed as social data that amount to metadata (in the form of audio, video, links, text, images, etc.); thus, there is an immense availability of versatile data which are unstructured. Hence, the preprocessing of this unstructured data is a dreary task making the sentiment analysis a bit tedious. An appropriate and convenient method is followed to perform the analysis of tweets and posts given in Figure 3.

The techniques that are used for data preprocessing include tokenization, stemming, and removal of words through stop word removal. When the raw text is split down into a small number of chunks, the process is termed tokenization. For example, “I am so grateful as I can fulfill my dream to Harvard,” then this sentence when subjected to tokenization results in “I,” “grateful,” “dream,” and “Harvard.” Tokenization plays a decisive role in NLP as it interprets the text through the analysis of the sequence of words.

Another technique that has been employed for the preprocessing and analysis of tweets and posts in the study includes the removal of unwanted words such as articles and prepositions which is referred to as stop removal. In the study, during the analysis of the words the sentences such as “if” and “but”. are removed without having any effect on the semantic structure of the sentences. This technique is generally preferred as it improves the performance of the model.

Another crucial step in sentiment analysis is the modeling of textual data so that it can be supplied as fixed inputs to the machine learning models and for this, we have the process of

feature extraction. Since the social data and its metadata are in unstructured form and hence for efficient processing, the data need to be converted to the numerical form. The process of mapping the words or text to real vector values is known as word vectorization and leads to the formation of a word vector that helps in the identification of the class of the sentiment or can say the polarity of the sentiment. Word vectorization also goes by the name of word embedding and falls under the techniques of feature extraction. Word vectorization splits down the document into sentences, and sentences are further split into words; words built the feature matrix. In the feature matrix, a sentence is represented by an arrow while a column is represented through a feature. The second feature extraction technique that can be used is the bag of words (BOW). BOW is stated as the representation of text in the documents using a vocabulary and a measure of known words. To give more insights into the dataset, we have employed the visualization of sentiments using a word cloud. Word cloud is a visualization technique that gives an image of each word with its importance in the main context. Figure 4 depicts the word cloud for the positive sentiments that have been identified from the data.

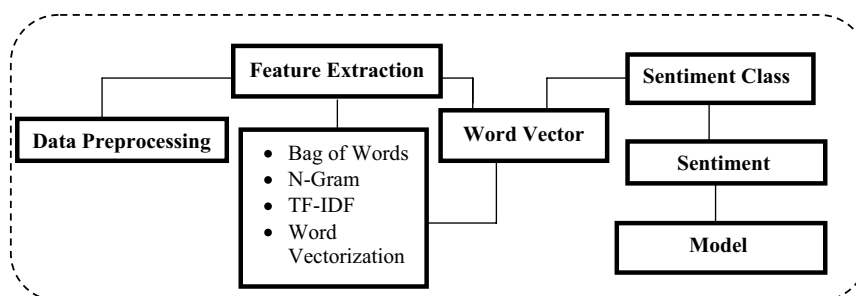
### 4. Results

To resolve the order of words in a sentence, the N-gram technique is used where the text is presented as a collaboration of unique N-gram vector representations. Here, N-gram means a group of n-adjacent words and the value of n can be any natural number. The N-gram approach has outperformed the BOW technique as it is capable of capturing the syntactic patterns but at the same time has high dimensionality. The following observations have been drawn after analyzing the posts of the universities on major social media platforms given in Table 3.

**Figure 4**  
Word cloud of positive sentiments



**Figure 3**  
Methodology of sentiment analysis



**Table 3**  
**Observation after the analysis**

University	Post and tweets	Popular hashtags	Conclusion drawn
Harvard University	Alluring virtual tours of museum exhibits; photos shared by Summertime Harvard Yard visitors, promote the teaching, learning, and research accomplishments of professors, students and alumni	<i>#Pride, #PrideMonth; #Harvard; #HarvardInSummer; #HarvardLocal; #BosArts; #BookLoversDay</i>	Promotion of teaching and research brings the sense of pride and generates trust which encouraged the emotional bond
Stanford University	Posts on achievements of students and faculty, artistic performances by students, alluring pictures of the campus; feeds about the accomplishments of its faculty and students; promotes learning programs by university	<i>@EngageStanford @StanfordEd; @GoStanford @StanfordOnline</i>	Promoting the students stories has enhanced the brand value and expression of campus life attracts attention of masses
Yale University	Content highlights on academic programming and innovation by the students and faculty; Yale students' experience dealing with pandemic and mental health.	<i>@yalepress; @YaleUGA; @YaleAthletics</i>	Mental health of the student is taken care and at the same time an emotional bond is created between the educator and the student, thus increasing the brand value
Princeton University	Research talks by the experts, featuring Princeton voices and online events; features on academic content with regular updates on new programs	<i>@Princeton; @PrincetonUPress; @princetonian</i>	Sharing of the research by university's expert builds the trust about the university and engages the users in a constructive way
LSU	Exciting video uploads about move-in day tutorial, summer commencement, and tours of the state-of-the-art football stadium; posts on research and university events	<i>@LSUNews; @LSUfootball; @LSUsports; @LSUbaseball</i>	Engaging students in the activities like community bound allowed students to make new connections
Ohio University	Boastful video on workout spots on campus by the student; posts feature to guide to travel during COVID19 pandemic	<i>@OhioState; @OhioStateNews; @StudentLifeOSU; @OhioStateAthletics</i>	Video about workout spots on campus with 6.1K views signify that taking care of physical health is the need of the users
University of Michigan	Research audio on Spotify. Tweets on activities happening on campus	<i>@UMichiganNews; @UMichStudents;</i>	Research video and sport videos are viewed the most



Thus, the observations drawn are #hashtags have played a significant role in increasing the brand value and nurturing the relationship between the student and the educator. Moreover, at the same time, it has aroused the interest of the students in the trending research which inculcated a sense of pride among the students.

The crucial finding of the present study concludes that the reputed universities formulate a sense of intensified community building to influence the target consumers. Hence, it can be attributed that as the interplay between cognition and emotion is involved in every phase of teaching in a similar way the student's profile also needs to be enhanced. To achieve this, sentiment analysis is serving this end by performing analysis on students' behavioral traces and is playing a critical role in teaching management and evaluation. Encompassing sentiment analysis in the field of education has made us realize the need to carry out real-time analysis of the learning process and teaching effectiveness. It has reformed the overall impression of course evaluation and could lead to impressive improvements in the process of decision-making. The subjects that are a common point of interest for students from all seven universities include research, student-educator connections, mental and physical well-being, and communal bonding. The research positive tweets account for almost 80%; for student educator connects, the positive tweets are around 74–79%; positive sentiment polarity for mental and physical health is around 65%; and positive sentiment polarity for community bond is 58%.

## 5. Conclusion

The present study contributes to analyzing the constructive engagement of the student-educator relationship on social media. The first responsibility of any university is to take in-charge of the holistic development of students. Only classroom teaching would not suffice the purpose to know, nurturing, understanding, and fully connecting with the students. The study provides substantial insight into how these universities build their brand by reaching out to their past, present, and future stakeholders. It is interesting to observe how these activities build a positive rapport, a profound relationship between student and educator. Unlike the restricted physical classroom settings, social media offers autonomy to users, to participate virtually, at any time. The present research observes that sharing the personal stories of the stakeholders on public platforms develops a sense of belongingness and connectedness. The participation of the students in the posts suggests that emojis have become a crucial part of the conversation in social media. There is much possibility to break the ice between students and educators by promoting open discussion on social media.

It has been observed that sensitive socio-cultural issues are being sensibly handled by the universities on social media platforms. Introducing classmates on social media is gaining popularity. The trend of giving recognition to each student enhances the confidence of the student toward the university. Other than academic information, extracurricular activities are promoted on social media which are making the maximum impact in building the brand. The social, cultural, mental, and emotional side of the students is being intelligently catered to by social media activities. Hence, the study drives the attention of HEIs toward promoting activities that deal with the overall nurturing of the human being. Hence, building a positive bond between student and educator is possible, if the students are constructively

engaged in social media. The study observes that teaching human values in the classroom otherwise would be challenging but is possible by promoting constructive hashtag drives. The hashtag (#) and at the rate (@) are the popular nomenclatures of millennial and have successfully been utilized by a few universities. #Kind by Ohio is a good example of it. Overall, the process of creating the branding on new media platforms is far more cost-effective. Creating and ultimately co-creating powerful content at these platforms not only urge students to pursue it as a crucial joint to get worthy information but also gradually become significant brand ambassadors. Hence, it is more likely that worthy posts on social media increase the brand value of the institutions. However, except few universities, it seems at HE, the student's involvement with social media platforms has still not been fully employed by educators worldwide. At the present outset, we advise HEIs to utilize social media as a medium to understand and connect to the most central stakeholder, the student. Social media will contribute as a tool to enhance the current learning management system and serves as a global platform where students from different regions can express their ideas and lay out quality meaningful discussions.

## Ethical Statement

This study does not contain any studies with human or animal subjects performed by any of the authors.

## Conflicts of Interest

The authors declare that they have no conflicts of interest to this work.

## Data Availability Statement

Data available on request from the corresponding author upon reasonable request.

## Author Contribution Statement

**Amit Kumar Mishra:** Conceptualization, Software, Validation, Investigation, Data curation, Writing – review & editing, Supervision, Project administration. **Shachi Negi:** Methodology, Software, Resources, Writing – original draft, Writing – review & editing, Visualization. **Esra Sipahi Dongul:** Conceptualization, Resources, Writing – original draft, Writing – review & editing. **Shweta Paliwal:** Methodology, Software, Validation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization. **Saurav Mallik:** Conceptualization, Validation, Investigation, Data curation, Supervision, Project administration, Funding acquisition. **Aimin Li:** Validation, Formal analysis, Resources, Data curation, Supervision, Project administration.

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