

**Design/Practical Experience [EEN1010]  
Department of Electrical Engineering**

**Final Report**

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## **Social Media Influence on Entrepreneurial Intentions**

### **Abstract**

In today's world, the internet is an integral part of human lives. With the growth of the internet, social media has taken over the world. The ever-increasing role of social media in humans' day to day life does not go unnoticed. No wonder social media has played a major role in the decision making process of human beings. With the rise of social media and its increasing influence in the lives of human beings, the dependence on social media in the day to day choices is increasing. As a result, more and more entrepreneurs use social media as a medium to reach a wider audience and analyze their potential customers with the help of social media to know what their customers need from them. Influencer marketing is one of the most useful means of marketing their product. Moreover, their day to day decisions are also influenced by social media. This study aims to analyze the dependence of entrepreneurs and startup enthusiasts on social media and figure out patterns as to how social media and social media influencers affect the decision making process of entrepreneurs. It first examines the impact of social media influencers on their followers by analyzing the followers to analyze the domains which they belong to. Furthermore, it takes the followings of a few top entrepreneurs and analyzes how they are affected by the people whom they follow, and to analyze how they are related to the entrepreneurial world. Then, it analyzes the retweets on the posts of top social media influencers to identify patterns in the followers. Later, a sentiment analysis based model is created on the dataset of the above data to identify the populations and how they are influenced by social media in their day to day decisions. A classifier-based model is trained using algorithms SVM and KNN to predict the relationship between social media and

their effect on the entrepreneurial world. The results of the study show the close correlation between social media and their impact on entrepreneurs which reflects in their day to day choices.

**Keywords:**

Entrepreneurship, Startups, Founders, Co-founders, Social Media, Social Media Influencers, Entrepreneurs, Entrepreneurship growth, Social Network.

## **Introduction**

In the present times, the rise in the usage of social media has played an integral role in every domain of human life. It has helped people to communicate with their kith or kin situated at the other end of the world easily. The number of users on social media platforms like Facebook, Twitter, Instagram has increased significantly. It is estimated that around 4 billion people use social media. Social media has helped people stay connected. Moreover, an increasing number of developments and modern advancements has appended several capabilities to social media, hence, it is no more just a means of communication. Social Media has become a place where people create, share and exchange knowledge, ideas, photographs and their experiences. It has provided a platform for like minded people to come together and collaborate towards a common goal. With such capabilities, it has become a medium for media, government authorities, news groups, businesses and professional organizations to reach a wider audience. In recent times, more and more businesses are being set up using social media sites. It has helped entrepreneurs and businesses reach a greater audience. Marketers have identified the potential of social media in fetching them clients. A large number of industries are switching from traditional forms of advertising to social media platforms. It is beneficial for them as it helps identify the sections of the population that are the potential customers to their services and helps them cater to the needs of their customers. As businesses start to move towards social media, they have begun to create more and more social media profiles, increasing their online presence, influencer and digital marketing, reaching out to their prospective audience. People's decisions are greatly influenced by the actions of social media influencers and hence, influencer marketing is highly used in today's world. Moreover, the ideologies of budding and veteran entrepreneurs and startup founders as well as startup enthusiasts are greatly affected by the actions of top entrepreneurs, business personalities and social media influencers. The day to day engagement of startup founders and entrepreneurship enthusiasts with their followed entrepreneurs reflects the same. The decisions of their followers are also impacted greatly as a result of their actions and ideas.

This study aims to analyze the followers, followings, retweets and tweetCounts of notable entrepreneurs and business personalities and segment them into entrepreneurship engaged and non-entrepreneurship engaged population. Further, it aims to classify and perform a sentiment analysis on the above data to identify patterns in the segments of population and identify how they are affected by social media.

## **Literature Review**

A significant literature on diffusion and social impact demonstrates the importance of social media as pathways for the transmission of private information and the generation of the latest mind. More so, contemporary literature has addressed some of the mechanisms through which social networks might likely have an effect on the entrepreneurial method and some of the consequences of those methods on new organisation formation. Generally, a social network is seen due to the fact the actual set of links has a huge range amongst a difficult and rapid of humans or actors (Mitchell, Smith, Morse, Seawright, Peredo, and McKenzie 2002). Jack (2005) emphasized that a social network gives those who're celebrating a party to this sort of network with privileged information, get proper access to opportunities and allows humans to obtain assets that might be difficult to get proper access to otherwise.

On the opportunity hand, online social networking is described with the resource of the use of Ellison (2007) as web-based totally completely services or internet-enabled a device that lets in humans to collect a public or semi-public profile internal a bounded system, articulate a list of various clients with whom they percent a connection, and to view and traverse their list of connections and those made with the resource of the use of others withinside the system. In a similar view, Adebisi, Akinbode, Okuboyejo, Agboola, Oni & Aderonke (2015) posit that online social networking generally refers to the interaction of humans the usage of severa social media systems to make new friends or unite the triumphing ones, generate new information and mind with none geographical or time barriers. It has been claimed that over 2.2 billion humans are lively on several social media systems. Online social networks play a pivotal characteristic withinside the making of an entrepreneur.

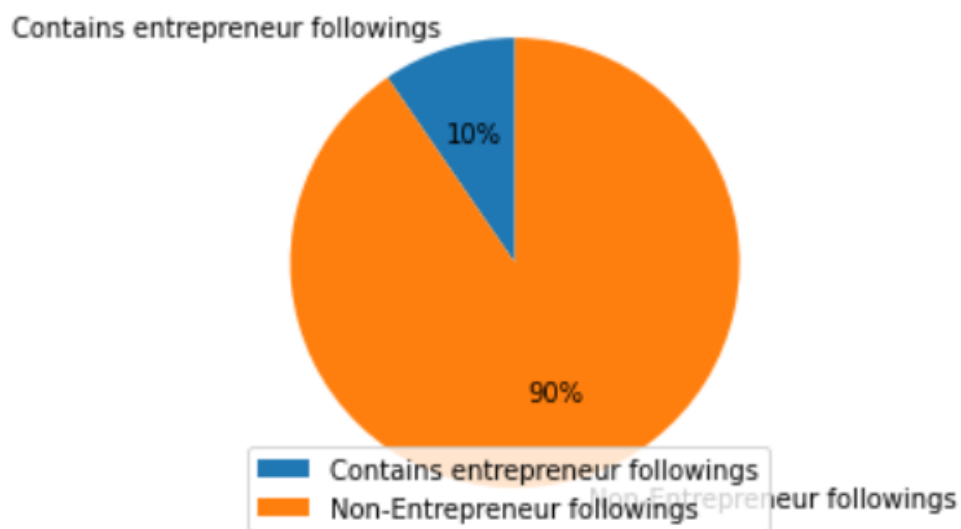
Accordingly, one reason why online social networks shape the entrepreneurial method so vital is they provide without boundary the conduits through which private information flows so that it will be a crucial tool for emblem spanking new minds and innovation. McQuaid (1996) argued that as marketers have restricted time and money, specifically withinside the pre-start-up and early stages of organisation formation, it is usually difficult for them to get proper of access to all the assets required, so the social network (online and offline) gives every assets and cut price in threat through the usage of known contacts, and with the resource of the use of growing Journal of Advance Research in Business, Management and Accounting suitable relationships the entrepreneur can get direct get proper of access to to the factors of producing and the market. More so, Azmitia & Montgomery (1993) country that psychology and sociology literature indicates that several styles of social networks have precise outcomes on man or woman behavior withinside the location of thinking, reasoning, talking, and acting. In contemporary times, social networking has honestly impacted the easy go together with the glide of information amongst humans in an academic environment. Recent findings from the literature have in addition demonstrated that online social (networking) media has obtained massive hobby as a prime detail affecting students' educational performance (Adebisi et al. 2015).

## **Objective**

The aim of this study is to identify the correlation between social media and their effect on the day to day decisions of entrepreneurs and startup enthusiasts by analyzing the relationship between social media influencers and their followers, entrepreneurs and the people whom they follow, tweets related to entrepreneurship and startups, the tweetCounts of the tweets, and using the sentiment analysis of models trained on the data and predict how social media influences the lives of budding and veteran entrepreneurs as well as startup founders and startup enthusiasts.

## Methodology

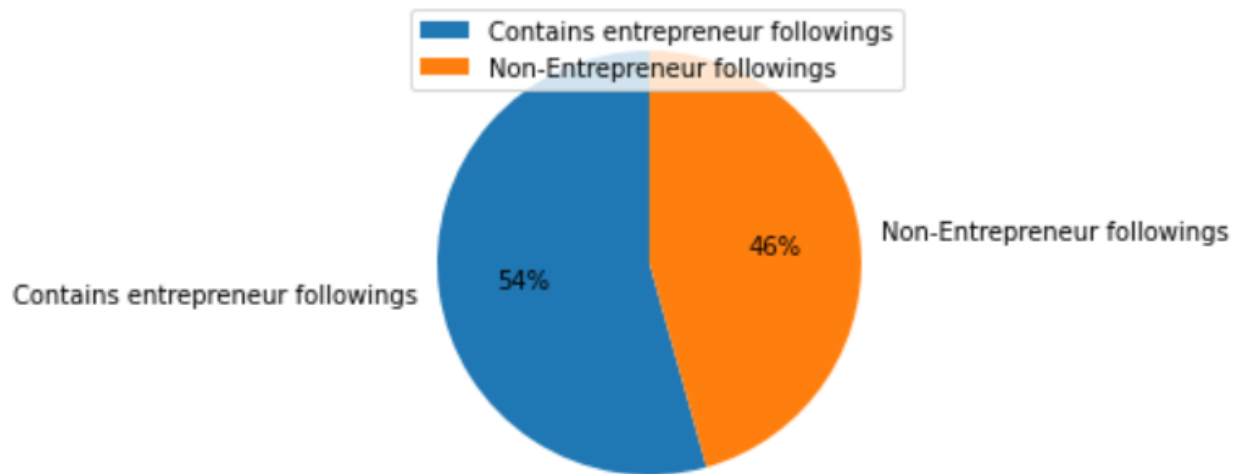
Made use of the Twitter API and POSTMAN to create separate datasets which consisted of the followers of top social media influencers. For the purpose of this study, top business personalities like Elon Musk, Bill Gates, Jack Dorsey, Parag Agrawal and Jeff Bezos were chosen and a random sample of their followers were analyzed. The data was feature trained and patterns and groups were analyzed to identify the distribution of the population and classified it into entrepreneurship-related and entrepreneurship-unrelated populations and were assigned a boolean value for the same based on the description of the users.



*Analysis of followers of top entrepreneurs and business personalities*

The above chart shows that around 10% of the followers are entrepreneurs or related to entrepreneurship and startup in some way or the other. This is a fairly good amount and reflects the direct engagement of the users with these entrepreneurs' ideas through social media.

Similarly, datasets of the people who were directly followed by top entrepreneurs in the nation were created and analyzed and classified into entrepreneurs and startup founders and co-founders based on their profession extracted from their profiles and social media handles. For the purpose of this study, top entrepreneurs and startup founders like Bhavish Aggarawal, Vidit Atrey, Vijay Shekhar Sharma, Ritesh Agrawal and Kunal Shah were chosen and the users they followed on Twitter were analyzed, datasets were cleaned and graphs were plotted for the same.

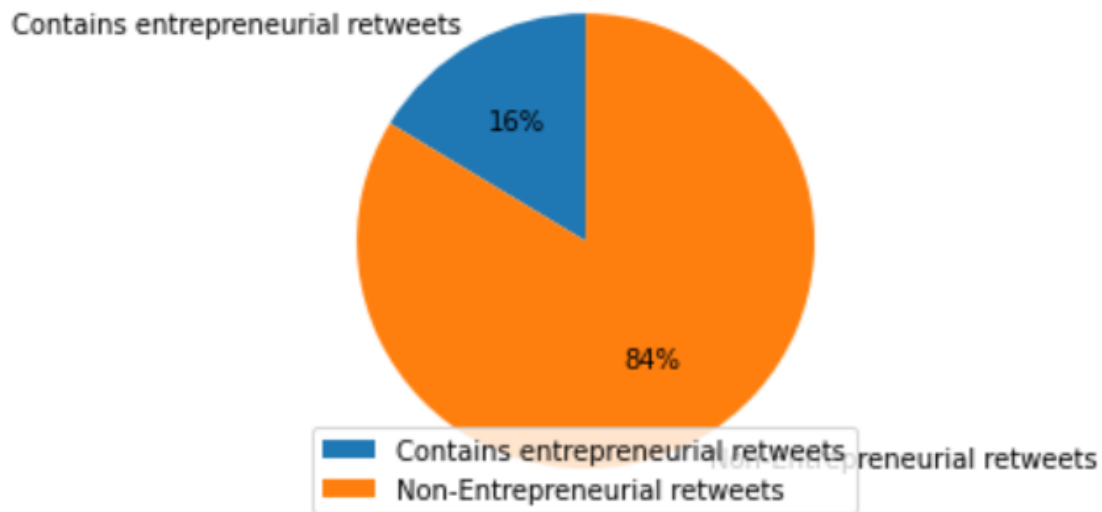


#### *Analysis of the users followed by top entrepreneurs and startup founders*

The above chart shows that around 54% of the users followed by these startup founders are entrepreneurs and business personalities. This shows the direct influence of these business personalities and influencers on these entrepreneurs.

Further, data extracted and datasets created for the retweets on the posts of social media influencers and entrepreneurs, were feature engineered, analyzed and classified into entrepreneurial profiles and non-entrepreneurial profiles based on the social media profiles. For this study, business personalities like Elon Musk, Jeff Bezos, Parag Agrawal, Bill Gates and Jack Dorsey were chosen and the users who retweeted on their posts were analyzed.

The above data was cleaned, analyzed and graphs were for better understanding of the distribution of the population to find the people related to entrepreneurship and startups.

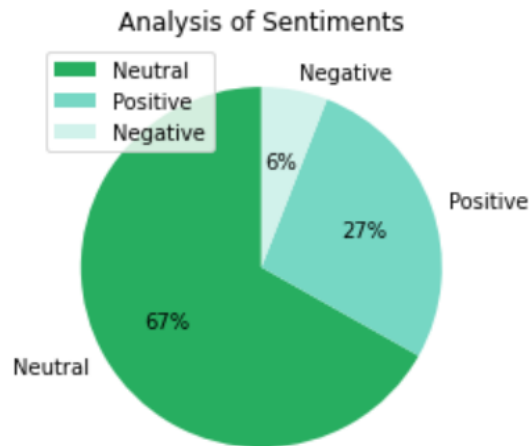


*Analysis of the retweets on the posts of top entrepreneurs and business profiles*

The above chart shows that around 16% of the users engaged in retweeting the posts of the entrepreneurs and business personalities are related to entrepreneurship and startups in general. This shows the direct influence of these business personalities and influencers on these entrepreneurs and their effect on the day to day activities and decisions of this population.

Moreover, data from Twitter consisting of the tweets related to Startups, Entrepreneurship, founders and co-founder profiles posted recently was extracted to visualize the large impact of Social Media sites directly on startup enthusiasts and entrepreneurs.

Analyzed and created graphs for visualization of the data and generated and provided a score which reflected the closeness and dependence of social media on Entrepreneurs and Startup-founder's day to day decisions.



*Analysis of Sentiments*

## **Model Formulation**

Dataset consisting of the tweets related to Entrepreneurship and Startups was used for Sentiment Analysis. Dataset consisted of the id of the tweets and the tweet text. The dataset was preprocessed. The data was cleaned, special characters, links and hyperlinks were removed.

The text was tokenized into words using nltk's word tokenizer. Nltk's PorterStemmer was used to convert the words into their root words. Python's TextBlob library was used to find the Polarity and Emotion of the text was generated using the Polarity. Datafields consisting of Emotion and Polarity were appended to the dataset. Dataset split into train and test data, leaving 20% data for test. The N-gram model was created. Sklearn's Countvectorizer was used to generate a sparse representation of matrix of token counts on text. Language of the tweet was taken into account. A N-gram model using the K-Nearest Neighbor model was trained on the dataset. Different values of nearest neighbors like 1, 3, 5, 7 and 10 were used to train the model. The accuracy score was predicted using Sklearn.metrics' accuracy\_score and classification report created using sklearn.metrics' classification\_report. Model was tested against the test dataset and accuracy was predicted. A Support Vector Classifier based on the Support Vector Machine model was created and trained using a 2-gram and 3-gram model. Accuracy was predicted using this model on the test dataset. Graphs were created to visualize the results.

	id	text	Polarity	Emotion
0	1.470000e+18	rt beggar turn entrepreneur child beggar studi...	0.000000	0
1	1.470000e+18	digit payment system conveni afford connect en...	0.418182	1
2	1.470000e+18	rt weve seen africa young agritech entrepreneur...	0.100000	1
3	1.470000e+18	rt eager give frozenfood good entrepreneur inn...	0.418182	1
4	1.470000e+18	beggar turn entrepreneur child beggar studi sc...	0.000000	0

*Dataset with Emotion and Polarity after preprocessing*

## Results

Result		SupportVectorClassifier	KNeighborsClassifier
FeatureExtraction	Metric		
2-grams	Accuracy Training %	100	97.92
	Accuracy Testing %	89.41	88.23
3-grams	Accuracy Training %	100	90.80
	Accuracy Testing %	90.59	78.88

*Accuracy of the models*

Both the Support Vector Classifier and K-Nearest Neighbor models predict decent accuracy on the test Dataset both on 2-grams and 3-grams model. The table above provides the accuracy on the dataset for all models on the training and test data. The table reflects that the SVC model correctly predicted the sentiments of 89.41% data on the 2-grams model and 90.59% data on the 3-grams model. The KNN classifier correctly predicted the sentiments of 88.23% data on the 2-grams model and 78.88% data on the 3-grams model.

## Discussions and Conclusion

From this study, with the help of the data analyzed and the sentiment analysis performed using the above model, the influence of social media on the entrepreneurs was reflected. It can be concluded that social media plays a vital role in the day to day activities, ideology and decision making process of entrepreneurs, startup founders, and entrepreneurship enthusiasts and plays an important role in their



ventures, and it also reflects the strong relationship between top entrepreneurs and their followers, budding and veteran entrepreneurs who, by the means of social media are connected to them, and in turn, their decisions are directly influenced by the actions of social media influencers and top business personalities.

This study provides an opportunity to research further on various other social media platforms to analyze and study the influence of social media on the entrepreneurial world and how it has proved to be helpful and has impacted the lives of entrepreneurs and startup enthusiasts.

## References

“Impact of social networking sites’ use on entrepreneurial intention among undergraduate business students: the case of Saudi Arabia”

- Mahmoud M Hussein Alayis, Imam Abdulrahman Bin Faisal University Nadia A Abdelmegeed Abdelwahed, Imam Abdulrahman Bin Faisal University Nermine Atteya, Madonna University

“Impact of social media on students entrepreneurial Orientation: a study of selected institutions in Nigeria”

- ADEBAYO, P. O. Department of Business and Entrepreneurship, Kwara State University, Malete, Ilorin Nigeria

“How does social media affect entrepreneurial leadership”

- Carl Johan Dahlin Philip Gratell, Department of Business Studies Uppsala University

“The Impact of Social Media on Entrepreneurial Networks”

- Debashish Mandal, Waikato Management School

“Entrepreneurial Entry: The role of social media”

- Wei Wang (School of Management, Xi’an Jiaotong University), Qiazhuan Liang (School of Management, Xi’an Jiaotong University), Raj Raj Mahto (Anderson School of Management, The University of New Mexico), Wei Deng (School of Management, Xi’an Jiaotong University), Stephen X. Zhang (University of Adelaide)

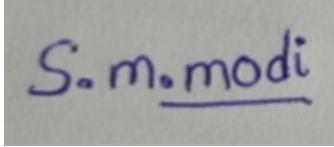
“The Social Media and Entrepreneurship growth”

- Ambrose Jagongo, PhD. MKIM, Lecturer of Entrepreneurship and Finance Kenyatta University Kenya

“How are businesses using social media”

- <https://www.marketingcharts.com/digital/social-media-117074>

7. **Declaration:** I declare that no part of this report is copied from other sources. All the references are properly cited in this report.



**Signature of the Student**

**Signature of the Supervisor**

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**Supervisor's Recommendation for the Evaluation**

Please tick any one of the following

1. The work done is satisfactory, and sufficient time has been spent by the student. The submission by the student should be evaluated in this term. ✓
  2. The work is not complete. Continuity Grade should be given to the student. The student would need to be evaluated in the next semester for the same Design Project with me.
  3. The work is not satisfactory. There is no need for evaluation. The students should look for another Design Credit Project for the next semester.
  4. [Other Comment, if 1-3 are not valid]
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