



## **Artificial intelligence in social media as an influencer: A review study**

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### **Abstract**

Change is dynamic. If you don't change, the world will change you. This sentence perfectly fits into today's scenario of buying behaviour where Social media is one of the most powerful tools in determining the dynamic shopping habits of consumers in any sector. Social media plays an influential, persuasive, and convincing role in today's era where the majority of the global population uses the Internet on daily basis. The factors within social media affecting Buying behaviour are Word-of-Mouth, Website Quality, Perceived usage, Perceived easiness, Attitude, Perception, Price, Consumer Reviews, Product Recommendations and many more. This paper intends to theoretically study the factors with special reference to Artificial Intelligence and how these factors influence different segments of customers in Online buying behaviour. The focus is to understand the powerful role of social media in influencing and motivating customers through different Social Media platforms like YouTube, Facebook, LinkedIn, Twitter, and Instagram. Secondary sources of data like recent research papers, books, and recent research studies have been considered for the study. The findings of the paper show that Social Media is highly influential in purchase decisions. With the growing usage of the Internet and technology, it is even estimated to grow further at an increasing rate. The Sentiment Analysis enables the optimal usage of data collected, processed and analysed to determine the emotions, opinions and sentiments of the consumers in e-commerce.

**Keywords:** consumer buying behaviour, sentiment analysis, opinion mining, social media, purchase decision

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### **Introduction**

In today's dynamic world where purchases are truly influenced by many people (like social influencers, family friends and referents, and other consumers) as well as Online system-generated recommendations. The comments, recommendations, and reviews generated online generate many emotions, and sentiments in consumers that perhaps change their attitude and perception of buying. It is essential to determine whether the changes are positive, negative or neutral especially when we have millions of such reviews updated on daily basis. The role of Artificial Intelligence is critical here since the generated data is processed and analysed through many techniques like Sentiment Analysis, Image Analysis, Audience Analysis, Natural Language Processing and Deep Learning as well. This paper primarily focuses on the reviews or e-word-of-mouth by online consumers, system-generated recommendations through Social Media platforms like Facebook, Twitter, LinkedIn, and Twitter and the role of Sentiment Analysis in Analysing the change in attitudes of consumers.

With the advent of technology, the new outlook has changed the way of living. Technology has been rapidly changing in the rapid world where products are just a click away from the consumers. The shift from brick-and-mortar to brick-and-click has eventually led to an atmosphere of technological advancements in humans. Internet shopping is now the most common activity performed by people on daily basis. According to New Indian Express, the rapid growth of the Internet has commendably increased the e-commerce trade despite so many regulations by the government. The turnover is estimated to be in billions in 2021. The additions of new shoppers in e-commerce are expected to be 40 million. New Indian Express also highlighted that with the expansion of e-commerce in two and three Tier cities, the users are expected to grow by 3 crores in the next 5 years. The reason being easiness, convenience, affordability, and variety has enabled more use of Internet shopping among people in today's era. According to Live Mint, the three largest giants of e-commerce by 2030 will be the US, China, and India. Broadly, there are many factors that have influenced and motivated users to adopt online shopping. These factors are Demographic, Behavioural, Psychographic, and Personal. The new ones are Internet Penetration and the usage of social media that has completely changed the concept of online shopping. Social Media as a tool is a great motivator, influencer, and persuader in changing the buying decisions of the consumers.

### **Social Media**

Today, when social media has got a global reach, there is hardly any place on the planet with no social media access. This accessibility lays down the significance of social media in today's time. Right to say, gone are the

times when people hardly knew about the products prior to purchase. The purchase used to depend on the availability of the products. However, with Web 2.0 everything is possible with just a click away. No more waiting for long queues, and cash payments only. Social Media has eventually changed the era of shopping where marketers are more concerned about the products being offered. Not just the products but the flow of experience that a consumer actually has. The digital age has in its store so much to be processed and developed in the future. Earlier studies have highlighted the factors like pricing, promotion, and demographics that affect consumers largely. However, now the concentration has shifted to behavioural factors as well. The tweets, shared posts, shared videos, memes, opinions, etc have an equal weightage to study for the development of products. The attitude and perception of the consumers are studied through these posts. It is important because of the increased use of the internet over time. With just a single post on LinkedIn, a company gets a good push whereas also gets a bad PR if vice-versa. Therefore, it is important to analyse the behaviour using some specialized tools in AI. According to Varma and Agarwal (2014) <sup>[10]</sup>, There is a relationship transformation from just transactions to social where social media gives the opportunity to the users to form communities and share their reviews and ratings of products online. According to Ertemel and Ammoura (2016) <sup>[11]</sup> the power of social media vests in the hands of consumers and not just sellers. Now buyers interact, share and communicate their good as well as bad experiences on social media. The users comment on the experiences and decide to whether buy or not a specific product. That's how the chain of consumers works. The reactions of the consumers influence other users and so on. Hence, marketers have to be cautious about their products. Marketers have now been focusing on how to be more consumer-centric rather than buyer-centric. As per Evans (2008) advertising is a medium of communicating new products to the audience, knowing about the desires of the consumers, to serve consumers with varieties so as to ensure them the best products at reasonable rates. One of the most effective tools used by Marketers and firms in today's era to influence, persuade and motivate consumers in their buying decision is social media. Icha and Edwin (2016) <sup>[16]</sup> said that social media enables consumers to know more about products by sharing information. The platform serves as a perfect platform to understand products and gain more insights into the products. Rossotto *et al.* (2018) <sup>[17]</sup> state that though social media is a widely used tool, however, the literature and the study available in the context are limited, and the factor is yet to be explored fully. Rahman (2015) <sup>[18]</sup> states that internet marketing enables consumers to search for larger information in a short span of time. It saves huge time and money which would have been rather wasted else. According to Xie and Lee (2015) <sup>[9]</sup> the characteristic that differentiates social media from traditional communication tools is the interaction between the seller and the buyer. In traditional marketing like TV, Advertisements, and Billboards, there was no buyer-seller interaction however, now the two-way interaction through social media enables the firms to focus more on consumer's needs and preferences. As per Xie and Lee (2015) <sup>[9]</sup>, the increased use of social media has enabled firms to rethink and design their product offerings in the most suitable possible ways by focusing more on the brand value proposition to enable the positive impact of social media on the brand.

### **Social Media and Artificial Intelligence**

Social and Artificial Intelligence have gone hand-in-hand in the digit era. Many studies have been conducted Internationally to understand the behaviour pattern of consumers in E-Commerce in industries like Fashion, Electronic Goods, Travel and Tourism, etc. The studies illustrate that Pricing (discounts, allowances, special schemes), Promotional Techniques (Ads on Social Media, Websites), Recommendations and Reviews, and Ratings, have majorly affected the behaviour of consumers in the decade. Not only texts, but images, pictures, posters, and videos, have enabled the increased trade from B2B as well as from C2C. (Cortizo, Carrero, & Gomez, 2014) <sup>[6]</sup>. AI plays a vital role in Marketing which includes, Marketing channels, STP, Marketing Strategy, and Performance. (Vlacic, Corbo, Silva, & Dabic, 2021) <sup>[15]</sup>. The extensive literature review shows that Consumer Behaviour is the less researched area in AI, where the research has focused mainly on countries like China and USA, however, India is the largest market that needs to be researched in the Consumer aspect because the Indian Population contributes significantly in the consumer markets. (Bawack, Wamba, Carillo, & Akter, 2022) <sup>[22]</sup>. The use and accessibility of the internet have enabled millions of users to optimally use e-commerce assisted by different times of AI technologies like Cloud (Zhang, Abbas, & Sun, 2019) <sup>[14]</sup>. Sentiment Analysis is a widely used technique of AI in Social Media which includes techniques like the Machine Learning Approach, Lexicon based models, hybrid approach, microbloggers post sentiment analysis, multi-lingual sentiment analysis, active learning for sentiment analysis, feature extraction technique (Singh, Tomar, & Sangaiah, 2020) <sup>[5]</sup>.

### **Objective**

The objective of the paper is to see the impact of social media on consumers using Artificial Intelligence, which factors affect the purchasing behaviour of consumers in e-commerce and the most common tool used for analysis.

### **Research Gap**

The present era of digitalisation has given consumers an amazing platform to exchange their views, suggestions, e word-of-mouth and recommendation online. The online data is tremendous which provides good insights to the firms in determining the purchase behaviour of the consumers. This study aims at reviewing the use and scope of AI in social media to enable encoding and decoding of the information available through to understand consumer needs and wants especially in E-Commerce.

## Literature Review

As per Richards and Shen (2006) the purpose of their research is to explore and analyse the factors of purchase in e-commerce in China. The study is based on the concept of Fundamental Objectives (or the end needs) and Mean Objectives (or the ways or different channels opted to achieve the fundamental objectives). The Fundamental Objectives include Products or Services whereas the Mean Objectives include channels opted for purchasing products and the overall flow of experience in the channel by consumers. The findings showed the 3 major FO- Joyful Shopping, Brand Consciousness and Risk affect the five Mean Objectives. It is necessary to study how different marketing strategies play an imperative role in building brand propositions for different social media platforms like Facebook, LinkedIn, Instagram, etc. along with the aim to study how different social media platforms play an imperative role in building brand proposition of the various online shopping platforms where Social Media is an apex platform with a plethora of opportunities for many businesses since majority of the users now use the online platform to interact, chat, buy. Customers are made aware of the businesses, products and schemes offered which enable them to buy. The physical, as well as the virtual presence of the business, will ensure fuller utilisation of the Social Media Platform while they can build better-branded e-commerce, especially in e-commerce (Amin, Nowsin, Hossain, & Bala, 2020) <sup>[7]</sup>. As per Mishra and Tyagi (2015) <sup>[2]</sup> the advent of social media has been a boon to the industry. The authors examined the effect of Social Media on the attitude and buying behaviour of the people. The paper talks about SNS (Social Networking Sites) and how it influences youngsters in their shopping habits. The study examines the driving factors that enable people to buy brands. The study shows that the performance usefulness is a positive factor that directly relates social media to Consumer Buying Behaviour now while the convenience and the quick usability factor have a positive effect. The Risk factor has also significantly influenced buying behaviour hence it is essential for marketers to understand the risk factor. The last conclusion derived is that shopping behaviour is influenced by the Personality of the consumer and hence it is important to study the personality factor also. Hajli (2014) <sup>[3]</sup> states that social media has broadened the scope of doing business. The paper focuses on the trust element to determine the shopping behaviour of consumers in e-commerce. Social Networking Sites Theory has been used in the study. The objectives of the paper are- Firstly to examine whether trust affects different social platforms. Secondly, whether there is any relationship between trust and shopping behaviour. Thirdly, whether product usefulness and trust are correlated or not in buying behaviour. The results show that a lot of content is generated through communities, consumer reviews and their feedback which in turn is a powerful tool for their colleagues and friends. The performance ensures the usefulness of the product which in turn is a driver in promoting a product. The trust factor is developed which enables the consumer to buy through social media sites. Results show with the advent of Web 2.0, the consumers are content creators. They influence each other and there is a high-level involvement which is a positive driver for social media platforms. According to Benlian, Titah, & Hess (2012) <sup>[4]</sup> Consumer Reviews (CR) and Product Recommendations (PR) have an impact on Instrumental Beliefs (Perception of something being useful and easy to use), Affective Beliefs (Perception of Good Quality), and Trust Perception, whereas Trust, Belief and Quality assurance are more in Experienced Product Type. Providing consumers with more detailed and effective OPRs will enable them to feel delightful while shopping. Sentiment Analysis is the most powerful tool used for processing data available online. Therefore, continuous improvements would enable better customer reach thus helping firms in improving their products. (Vanaja & Belwal, 2018). Opinion Mining includes a review base and Sentence based Analysis in Artificial Intelligence is the most used and powerful tool in predicting the emotions and sentiments of the consumers. The sentence framing and the word usage depicts the behaviour of the consumers as positive, negative or neutral. (Jabbar, Urooj, JunSheng, & Azeem, 2019) <sup>[13]</sup>. Though many techniques are available however widely used Lexicon-based method is Senti Word and TF-IDF whereas if we talk about Machine Learning it is Naïve Bayes and SVM. Bigger data calls for a Machine Learning approach whereas small messy and less time data requires a Lexicon approach however the combined usage of both is a great combination to work on. (Drus & Khalid, 2019) <sup>[8]</sup>

## Research Methodology

The paper is conceptual in nature while emphasizing the usage of social media and the role of AI in analysing the behaviour of consumers. The literature review has been done to understand how Artificial Intelligence has helped companies in Social Media to understand the concept of buying from a consumer's mindset. The papers reviewed are from various journals of Scopus, Emerald, Springer, and Taylor and Francis.

## Conclusion

The growing use of the Internet has enabled more data in e-commerce. The data available online includes all sorts of information like pictures, images, and comments, on various Websites and Social Media platforms. Consumers purchase on daily basis because of the increase in the purchasing power of the consumers. Consumers get swayed by their family members, colleagues, friends, and social communities. Hence there is a change in their behaviour. The influential effect is quite high in today's scenario where it is seen that consumers don't even buy after reading any negative comments about a product. The data available online is the data used by consumers for their decision-making process. The huge data is not fully utilized by firms in understanding the dynamics of consumer behaviour. However, with the advent of Web 2.0, it is quite evident to capture huge data and process it into useful information. There are many tools available to process and understand this data. The

Statistical tool used in the study is Sentimental Analysis. Sentiment Analysis has enabled studying the available online inputs from consumers and categorising them as positive, negative or neutral. A consumer after buying a product usually now shares their product experience via Facebook, Twitter, LinkedIn or Instagram. These reviews are read by others. Such data is being extracted by global firms like Amazon, Flipkart, and eBay. Such data helps firms in improving the quality and services of their products. Further, the use of Opinion Mining has also deepened the area of study. The extensive review shows that the use of Sentiment Analysis in predicting purchase behaviour is quite high. Many studies have used this technique in the literature to understand the behaviour of consumers. The impact of family, friends and recommendation systems is tremendous however the least researched concept is the impact of socio-cultural elements in e-commerce, especially in India where diversity plays a significant role. The socio-cultural aspect of consumer behaviour is still not yet worked out optimally. With digitalization, this analysis can be more effective if the scope of research is broadened in understanding the emotions, perceptions, and attitudes of the customers while taking into consideration the cultural effects of society. The paper highlights the fact that Indian market is the fifth largest market using Internet services. However, very few studies have been conducted in India to study the factors related to attitude, perception, and opinions of the consumers during their buying behaviour, especially in Electronic Commerce dealing in Electronic Goods. Also, how E-Word-of-Mouth plays a significant role in influencing the buying intentions of the consumers. Since the age is digital, hardly we know people with no internet. Therefore, it is necessary to study this market that is exceptionally growing constantly. Also, digit marketing has enabled the demand for Social Influencers. An interesting yet very limited study has been done to evaluate the word-of-mouth influence of social influencers on their followers in e-commerce while purchasing. Largely, the youth get inspired by Influencers on different platforms like Facebook, LinkedIn, Twitter, and YouTube. These Influencers affect the perception and attitudes of their fans. Millions of views are generated through such influencers online. It is essential for marketers to analyse these emotions and sentiments generated. The trend supports the theory of Influencer Marketing. Lastly, Sentiment Analysis has been extensively used in Literature Review whereas there are other tools also available to analyse the data. Therefore, there is a need the updating the tools as well.

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