

A Study on the Impact of Artificial Intelligence on Social Media Marketing

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ABSTRACT

Artificial Intelligence (AI) has significantly transformed social media marketing by enhancing personalization, automating tasks, and providing deeper insights. Social media marketing is a growing trend and the most effective marketing tool, as it allows companies to reach a wide audience and effectively convey a distinct brand image. It is the most economical advertising method, with most social networking sites providing free accounts and registration. However, social media advertising yields a higher return on investment, allowing businesses to significantly increase their conversion rate. This study aims to analyze the influence of AI on social media marketing and its effect on consumer decision-making and behavior. It aims to predict the relationships between consumer activities, marketing activities, and consumer behavior, particularly among those who spend a significant amount of time on social networking platforms. Social media marketing has significantly influenced consumer behavior and enabled organizations to gain insights into customer behavior. It has revolutionized the internet marketplace by altering the structure of how items are bought and sold. The increasing popularity of social media has prompted marketers to consider it in addition to traditional marketing areas. Social media relies on internet or mobile phone apps and technologies to facilitate information exchange among individuals, and the number of social media users exceeds the population of several nations. The assessment of the influence of social media on marketing can be made by contrasting marketing practices before and after its introduction, taking into account the specific technological advancements used in social media platforms.

Keywords: Artificial Intelligence, Social Media Marketing, Internet usage

1. Introduction

The brand of a business is its most valuable asset, and leveraging it can lead to growth, profitability, and long-term viability. Social media has become an effective platform for advertising and marketing products or services, enhancing their prominence. Entrepreneurs aim to determine how different marketing tools can enhance sales [1]. This study aims to analyze the impact of social media marketing on consumer behavior among individuals who predominantly use social media platforms and determine the projected correlations between different social media marketing activities, customer activities, and consumer behavior[1,2].

Artificial intelligence (AI) has become increasingly influential in the creation and administration of social media content, with platforms like Facebook, Twitter, YouTube, and Instagram enabling online connections and interactions (figure 1). AI algorithms can scrutinize vast amounts of data and detect patterns and insights that may elude human perception, enabling more efficient and effective content development. However, the influence of AI on social media content remains a subject of discussion [3]. The incorporation of AI into social media platforms has resulted in potential advantages, such as enhanced user experience, tailored information and ads, improved search results, and censored content. This has substantial consequences for people, society, and democratic processes. The dissemination of false information and the establishment of echo chambers may hinder people's ability to make well-informed choices and engage in public discussions [3-5].

An important concern is the capacity of AI systems to propagate misinformation and create filter bubbles. Filter bubbles occur when users only see material that validates their own opinions, leading to polarization and a lack of other perspectives [5,12]. The rapid dissemination of false information on social media may be further intensified by the use of AI algorithms to provide tailored material to consumers [6-8]. Therefore, it is crucial to examine the influence of AI on social media marketing and its consequences for both content authors and users [8-11]. The aim of the present study was to evaluate the impact of Artificial Intelligence on social media marketing.

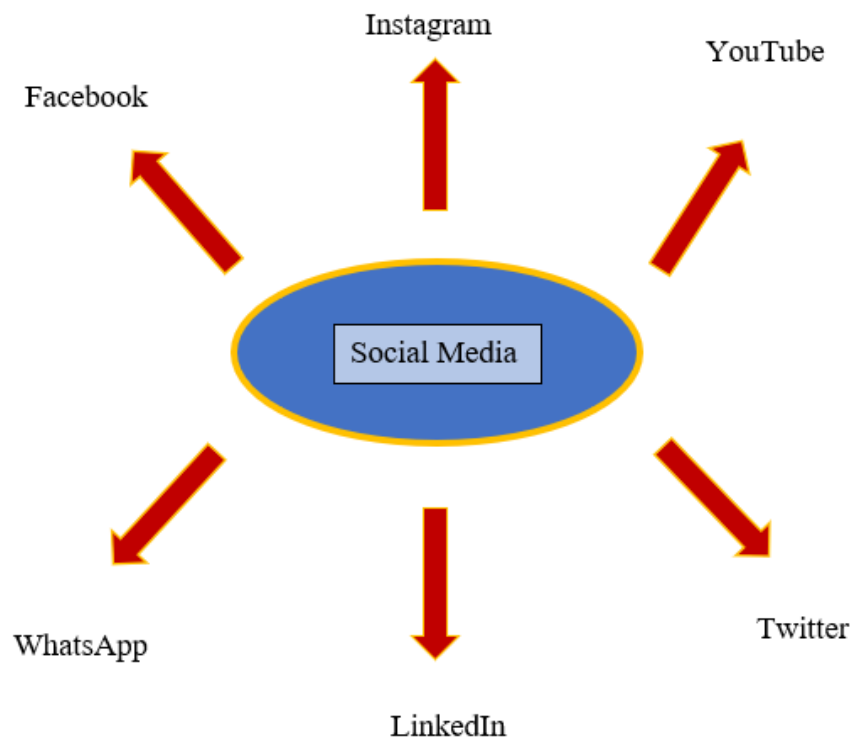


Figure 1: Various social media platforms.

2. Methods

2.1 Sample Design

When it comes to acquiring a sample from a certain population, the sampling design is the definitive strategy that is in place. The sample size, the sampling unit, the sampling procedure, and the sampling region are some of the components that fall under this category. The primary data collected in this study

are primarily qualitative and were collected through online questionnaires with different types of customers. These questionnaires were pre-coded and pre-tested contacts. On the other hand, secondary data were collected from a variety of sources, including various social websites, various literature reviews, national and international journals, and various theses. A design method known as probability sampling was used in the course of this research [13].

2.2 Sampling Technique

Stratified random sampling is the method of information collection that was used for the project. One method of doing an analysis is known as stratified random sampling, which involves splitting the population into many separate strata and selecting one of those strata accordingly [13,14].

2.3 Sample Size

Techniques of sampling will be used in the process of carrying out the survey. There are a total of two hundred potential consumers. In the city of Malappuram, the researcher is going to build a sample design, and the responders will be gathering information from 200 consumers, which is one percent of the total population. This study will be conducted in Malappuram district [15].

2.4 Area of Study

The selected area of study was Malappuram (Kerala).

2.5 Period of Study

The study was conducted for a period of three months from January 2024 - March 2024.

2.6 Sources of Data

The study used both primary data and secondary data

2.7 Primary Data

The primary data was collected through 128 respondents.

2.8 Secondary Data

The secondary data was collected from reviewing various literature, internet and marketing related books.

2.9 Analytical Tools

Various tables and charts are used as a means for easy representation of data analyzed through Percentage Analysis.

2.10 Software Used

Microsoft Excel, SPSS: Statistical Package for the Social Science (IBM, 21.0)

2.11 Hypothesis testing

The hypothesis will be tested by the following techniques:

2.12 ANOVA

Chi-square is a statistical measure that evaluates the deviation between observed and expected frequencies of a sample. It is based on the χ^2 distribution, introduced by Helm in 1875. It is used to test hypotheses by providing theoretical frequencies with which observed frequencies are observed. In statistics, the mean of two popular people is often equal, and to determine this, ANOVA (analysis of variance) is used. This type of statistical hypothesis testing is commonly used in the analysis of experimental data. In the typical application, the null hypothesis is that all groups are random samples of the same population. ANOVA is a synthesis of various ideas and is used for various purposes and implementation [15].

2.13 Questioner

Yes/No Questionnaire on AI Impact in Social Media Marketing

- Are you aware that AI is used in social media marketing?
- Do you find AI-enhanced content relevant to your interests?

- Have you interacted with AI chatbots on social media platforms?
- Do you prefer receiving personalized ads?
- Have you ever felt that an ad was perfectly targeted to you?
- Are you comfortable with AI tracking your online behavior?
- Do you trust AI-generated content on social media?
- Have you purchased a product after seeing a targeted ad?
- Do you think AI improves your social media experience?
- Have you received faster responses from AI chatbots than human agents?
- Do you believe AI can accurately predict your interests?
- Have you noticed an increase in personalized content on your feeds?
- Do you find personalized recommendations helpful?
- Are you concerned about data privacy due to AI usage?
- Do you feel more connected to brands that use AI for engagement?
- Have you ever unfollowed a brand due to irrelevant content?
- Do you appreciate receiving product suggestions based on past purchases?
- Have AI-driven ads influenced your purchasing decisions?
- Do you find AI-generated content as engaging as human-created content?
- Have you noticed improvements in customer service through AI?
- Do you think AI helps brands understand customer needs better?
- Are you satisfied with the relevance of ads you see on social media?
- Do you believe AI can enhance the quality of social media interactions?
- Have you interacted with brands more because of personalized content?
- Are you open to more AI-driven personalization in the future?
- Do you feel overwhelmed by personalized ads on social media?
- Have you ever clicked on a product suggestion based on AI recommendations?
- Do you think AI has improved the quality of social media advertising?
- Are you likely to follow brands that provide personalized content?
- Would you recommend that more brands use AI in their social media marketing?

3. Results

3.1 Age, gender, education, marital status and occupation

From the data, total respondents are 169, from which 132 members are below 25, meaning 78.1%; 26 members are between 25 and 35, meaning 15.4%; 09 members are between 35 and 45, meaning 5.3%; and 02 members are 45 and above, meaning 1.2%. The inference was that the majority of the respondents are between 15-25 years old, i.e., 78% (table 1). In gender, From the above data, the total number of respondents is 33, from which 19.5% of the respondents are men and 80.5% are women. The inference was that the majority of the respondents are female, i.e., 80.5%. In the education profile, a total of 169 respondents are from which 28 members, i.e., 16.6%, are postgraduates; 121 members, i.e., 71.6%, are undergraduates; 15 members, i.e., 8.9%, are high school graduates; 5 members, i.e., 3%, are PhD & above; and the 4 members, i.e., 3.1%, are others (table 2,3). In the occupation data, the total number of respondents is 169, from which 58 members, i.e., 45.3%, are postgraduates; 54 members, i.e., 42.2%, are undergraduates; 06 members, i.e., 4.7%, are high school graduates; 06 members, i.e., 4.7%, are PhDs &

above; and the 04 members, i.e., 3.1%, are others. The majority of the respondents are postgraduates, i.e., 45.3% (table 4).

Table 1. Shows the respondent of age

Particulars	No. of Respondents	Percentage of Respondents
Below – 25	132	78.1%
25 -35	26	15.4%
35 – 45	09	5.3%
45 – 55	02	1.2%
Total	169	100%

Table 2. Shows the gender of the respondent.

Particulars	No. of Respondents	Percentage of Respondents
Male	33	19.5%
Female	136	80.5%
Total	169	100%

Table 3. Shows the marital status of the respondents.

3.5 Particulars	No. of Respondents	Percentage of Respondents
Married	38	22.7%
Un Married	131	77.3%
Total	169	100%

Table 4. Shows the occupation profile of the respondent.

Table 3.7 Particulars	No. of Respondents	Percentage of Respondents
Employed	46	27.3%
Un Employed	30	18%
Self Employed	15	8.6%
Students	74	43.8%
Others	09	2.3%
Total	169	100%

3.2 Income and online shopping

In the date of income, the total number of respondents is 169, from which 166 members are below 2,00,000, i.e., 60.2%; 23 are between 2,00,000 and 4,00,000, i.e., 18%; 10 members are between 4,00,000 and 6,00,000, i.e., 7.8%; and 18 members are 6,00,000 and above, i.e., 14%. Here, the majority of the respondents are below 2,00,000, i.e., 60.2% (table 5). In the table 6, the total number of respondents is 169, in which 40 members are shopping online once a month, i.e., 31.7%; 38 members are shopping online twice a month, i.e., 30.2%; 16 members are doing online shopping in 16 months at once, i.e., 12.7%; 1 member is doing yearly shopping, i.e., 0.8%; and 31 members are doing it occasionally, i.e., 24.6%. in the inference. The majority of the respondents are doing online shopping once a month, i.e., 31.7%.

Table 5. Shows respondents of online shopping.

Particulars	No. of Respondents	Percentage of Respondents
Yes	166	98.4%
No	03	1.6%
Total	169	100%

Table 7. Shows respondents how often does online shopping.

Particulars	No. of Respondents	Percentage of Respondents
Monthly Once	54	31.7%
Monthly Twice	51	30.2%
Six Month	21	12.7%
Yearly	01	0.8%
Occasionally	42	24.6%
Total	169	100%

3.3 Internet usage and online shopping

In internet data (figure 2), the total number. of members is 169, in which 69 members are using the internet for less than 1 year, i.e., 10.2%, and 17 members are using the internet for 1–2 hr., i.e., 12.5%. 40 members are using the internet daily for 2–3 hr., i.e., 23.4%; 22 members are using the internet daily for 3–4 hr.; and 52 members are using the internet daily for more than 4 hr., i.e., 40.6%. in inference The majority of the consumers show the respondents that they often use the internet for more than 4 hrs. In a day, i.e., 40.6%.

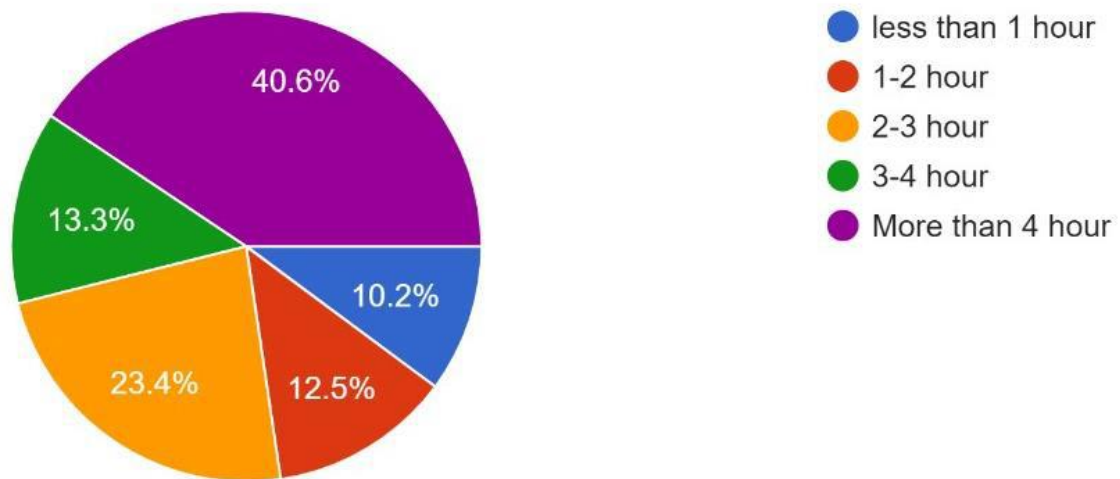


Figure 2: Shows the Respondents how often do use internet every day.

In the internet shopping data, total number. of members is 169, in which 17 members use the internet daily for online shopping, i.e., 10.2%; 28 members use the internet weekly for shopping, i.e., 16.4%; 5 members use the internet for online shopping weekly twice, i.e., 3.9%; 49 members are using the internet for online shopping monthly twice, i.e., 28.9%; 69 members use the internet for online shopping. Occasionally, i.e.,

40.6%, in the inference. The majority of consumers show the respondents to often use the internet for shopping is occasionally, i.e., 40.6%.

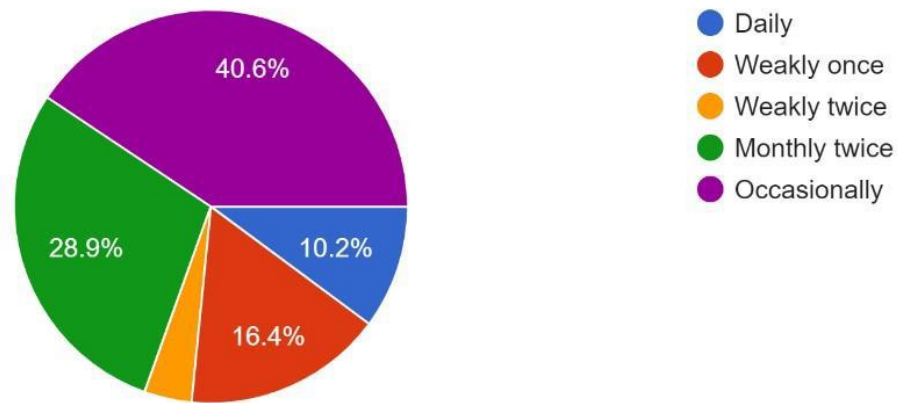


Figure 3: Shows the Respondents how often use internet for shopping

4. Discussion

Artificial Intelligence (AI) has profoundly altered social media marketing via improved personalisation, work automation, and the provision of more profound insights. This emerging trend serves as the most potent marketing instrument, enabling organisations to engage a broad audience and communicate a brand identity effectively. Social media marketing is the most cost-effective advertising strategy, since several sites provide complimentary accounts and registration [16,17]. This research seeks to examine the impact of AI on social media marketing and its effects on consumer decision-making and behaviour, especially among those who allocate considerable time to social networking sites. Social media marketing has transformed the online economy and significantly influenced customer perceptions, necessitating its incorporation into firm marketing strategy.

Social media has a considerable influence on global enterprises. By promoting their websites on social media, they create a unique brand identity. Social media reveals customer preferences for products using various data analytics and data science methodologies [18,20]. Individuals subscribe to brand pages on social media to get alerts. Social networking is essential rather than optional for modern businesses. Consequently, the burgeoning social media marketing landscape offers several opportunities for new firms, while also presenting challenges in achieving customer engagement. Social media is revolutionising traditional marketing techniques into digital advertising for businesses and their products.

5. Conclusion

Artificial Intelligence (AI) has revolutionized social networking marketing by providing deeper insights and enhancing personalization. This trend allows companies to reach a wide audience and effectively convey a brand image. Social media marketing is the most economical advertising method, with many platforms offering free accounts and registration. This study aims to analyze the influence of AI on social media marketing and its effect on consumer decision-making and behavior, particularly among those who spend a significant amount of time on social networking platforms. Social media marketing presents opportunities for new businesses while also posing challenges in securing client engagement.

6. References

1. Achille SJ. World statistics on the number of Internet shoppers. US: Sante J. Achille Available: <http://blog.webcertain.com/world-statistics-on-the-number-ofinternet-shoppers/>[Accessed]. 2008.
2. Syarief SB. The Analysis of Communication between Friends on Social Media towards Purchase Intension (A Study Case of Companies in Entrepreneurship Project of President University, Bekasi, Indonesia). *Procedia-Social and Behavioral Sciences*. 2015 Jan 20;169:31-42.
3. Miles D. Social Media and Consumer Behavior: A Marketing Study On Using Structural Equation Modeling for Measuring the Social Media Influence On Consumer Behavior. *Journal of Marketing Perspectives*. 2014;2(1):43-74.
4. Suhail PT. Comparative evaluation of antioxidant activity of methanolic extract of Saraca asoca and its commonly used substitute plants. *Int. J. Res. Rev.* 2019;6:37-43.
5. Sharma S. Assessing the impact of web 2.0 on consumer purchase decisions: Indian perspective. *International Journal of Marketing and Technology*. 2012 Jul 1;2(7):125.
6. Barhemmati N, Ahmad A. Effects of social network marketing (SNM) on consumer purchase behavior through customer engagement. *Journal of Advanced Management Science*. 2015 Dec;3(4).
7. SUHAIL P, CHRISTAPHER PV, JOSEPH S, PRASANTH NV, NISHIDA M, ANJU T, RANI S. Comparative evaluation of anti-obesity effect through pancreatic lipase inhibition of methanolic extract of the bark of Saraca asoca and Cynometra travancorica. *Journal of Research in Pharmacy*. 2023 Nov 1;27(6).
8. Hayta AB. A study on the of effects of social media on young consumers' buying behaviors. *European Journal of Research on Education*. 2013;1(2):65-74.
9. Suhail PT, Balasubramanian T, Roshini KV, Anil K. A Comparative Evaluation Study of Anti-inflammatory Activity of Saraca asoca and its Commonly used Substitute Plants. *Asian Journal of Pharmaceutical and Health Sciences*. 2019;9(4).
10. Belch GE, Belch MA. Advertising and promotion: An integrated marketing communications perspective. mcgraw-hill; 2018.
11. Bhatt, M and Bagga, T. (2013). A Study of Intrinsic and Extrinsic Factors Influencing Consumer Buying Behaviour online. *Asia pacific Journal of Management Research and Innovation*, 9 (1), pp.77-90. Xvii
12. Roshini KV, Thirumalaisamy B, Suhail PT. Wound healing and medicinal plants: A systematic review. *Asian Journal of Pharmaceutical and Health Sciences*. 2019;9(2).
13. Birol Topcu and Erkan Akar (2011) ,“An examination of the factors influencing consumer’s attitudes towards social media marketing”, *Journal of Internet Commerce*, Routledge Informa Ltd, pp. 35-67, Vol. 10, Iss. 1.
14. Charita Jashi Nugzar Todua, (2015) , Some Aspects of Social Media Marketing (Georgian Case), *International Journal of Social, Behavioral, Educational, Economic and Management Engineering*, ISSN (Print): 1307 6892 Volume:9, No:4, pp 1165-1168
15. Abidfaheem T, Joy J, Rahaman AR, Nagappan K, Anbiah SV, Rani S, Suhail P. Pharmacological Activities of Polyherbal Formulations of Saraca asoca and Its Substitute Plants: A Comparative Evaluation Study. *Journal of Pharmacology and Pharmacotherapeutics*. 2025 Jan 10:0976500X241309438.

16. Brengman, M and Karimov, F., (2011). "The Role of Online Social Media Applications in Initial Trust Formation Towards Unknown ERetailers." Multi Conference on Computer Science and Information Systems, PP : 73
17. Cvijikj Irena Pletikosa (2010), "Influence of Facebook on Purchase Decision Making," paper presented at 8th International Conference on Pervasive Computing. Helsinki, Finland.
18. Dr.K.V.A Balaji Bidyanand Jha, (2015) , Social Media Communication and Purchase Intention: Learning style as moderating variable, Research Journal of Social Science & Management-, ISSN Number : 2251-1571 ,Vol: 05, Number: 2, June 2015, PP- 59-74.
19. E. Lee Impacts of social media on consumer behavior: decision making process., Bachelor's Thesis Turku University Of Applied Sciences xviii International Business Bachelor of Business Administration May 2013 pp.77 page. Edison (2011).
20. Girish Ramani, Alok R. Saboo, V. Kumar, , Evaluating the impact of social media activities on human brand sales, International Journal of Research in Marketing, Available online 10 April (2015), ISSN Number 0167-8116.