

# **An analytical study of Artificial Intelligence in Digital Marketing in 21<sup>st</sup> Century**

*Rahul Raj<sup>1</sup>, & Dr.Rama Singh<sup>2</sup>*

<sup>1</sup>**PhD Research Scholar**, School of Commerce and Management, Arka Jain University, Jamshedpur

Email ; [r.sharma2289@gmail.com](mailto:r.sharma2289@gmail.com) & mobile: 8409377718

<sup>2</sup>**Assistant Professor**, School of Commerce and Management, Arka Jain University, Jamshedpur

## **Abstract**

The shifting marketing landscape has made tracking the consumer journey more difficult. The market is expanding and improving, and clients now have a virtually limitless array of new shopping possibilities experienced the digital marketing. As the need for great customers experiences across all digital platforms rises, customers communicate their wants, attitudes, and views through a variety of channels and mediums. The solution to improving the digital experience and delivering personalized information is artificial intelligence (AI). This reservoir of customer curated data that seems to never end is growing. To extract the information and exploit it, many marketers use AI. AI enables companies to gather and act on comprehensive real-time customer information, and with the help of these insights, they can create tailored digital marketing experiences. Although there is still a long way to go before businesses implement AI-based apps, many see the essential advantage of incorporating AI into digital marketing strategies to create excellent client experiences throughout the purchasing process. This study of the literature focuses on AI-based digital marketing tools that can improve online consumer experiences by using the customer decision process. It extensively examines how digital marketing using AI affects customer purchasing decisions.

**Keywords:** Human Psychology; Artificial Intelligence; Digital Marketing; Customer Decision

## **I. Introduction**

According to Ransbotham et al. (2017), artificial intelligence (AI) is likely to change customer interactions in digital marketing. AI is not intuitive like humans because it is data-driven. Machines can use artificial intelligence (AI), which is frequently referred to as human intelligence processes, to translate data into strategies that direct sensible customer behavior (Haenlein & Kaplan 2019). When companies use digital marketing to change consumer behavior, customer happiness is more likely to increase (Ransbotham et al. 2017). Reaching the appropriate clients at the right moment is now even simpler for firms because to AI-based digital marketing (Ransbotham et al. 2017). A long-term cooperation that boosts consumer satisfaction is the unexpected advantage of purposefully fostering AI innovation to support digital marketing, AI-controlled chatbots, big data, and cognitive technology outputs are all helping businesses. When compared to traditional merchants, AI-powered retailers perform five times better. Digital marketing has had a significant impact on customer behavior, and current consumers now demand an experience that is more dependable and customized. Due to the AI breakthrough in digital marketing, customers may have trust issues. As a result, customers are eager to spend more time learning before they make a purchase (Singh et al. 2019). Today's consumers are more inclined to conduct research before making a purchase since they are better educated (Yussaivi et al. 2019). The future success of AI-enabled digital marketing is yet unknown. Digital marketing can have adverse effects, according to studies, if it is not done correctly (Roggeveen et al., 2021). This can be difficult for companies attempting to integrate AI into their processes (Aceto, Persico, & Pescapé 2018). Businesses who wish to offer effective AI-based digital marketing must have a strong IT infrastructure since AI needs relevant and reliable marketing data. It is crucial to comprehend how consumers view AI innovation as a part of their capacity for learning and how this contributes to brands having more consumer appeal (Roggeveen et al. 2021). The outcomes of a service quality analysis are determined by the correlation between the service read and prior expectations for what that assistance may offer (Nagy & Hajdu, 2021). There is a severe lack of study on how customers respond to machine-controlled services, notably the quality of the services and the shopping experience that is enabled by AI (Chopra 2020). Service quality in AI-enabled services is likely to differ greatly from service quality in social organizations given that self-management

innovations are usually used to build these services (Guha et al. 2021). \

In this article, we consider how digital marketing and AI may be combined to improve customer engagement. Figure 1, and Figure 2, shows the model we created to help with the learning of online customer behaviors and attitudes. This model is based on the AI-centered shopping experience, service quality, and trust-confidence premise. Our model incorporates trust and confidence to close the gap between high quality, ease of use, and AI support to benefit from technology advancement and support successful marketing efforts. This study provides advice to organizations on how to create personalized AI experiences and makes sure that targeted audiences profit from the insightful data obtained by using AI approaches. Additionally, it advances our knowledge of how users of AI-powered systems might collaborate.

## **II. Review of Literature**

The possibilities are endless as technology develops and AI's potential in digital marketing grows. According to Campbell et al. (2020), artificial intelligence (AI) is being used more and more in operational markets for risk assessment, consumer research, and identifying business activities to collaborate with target clients. While influencing business models, consumer service alternatives, marketing processes, and marketing tactics, the usage of AI in digital marketing will also have an impact on consumer behavior. The major goal of AI in digital marketing is to provide a more stable and dynamic environment for digital marketing rather than to completely replace human dynamics in crucial choices. It will enable marketers to swiftly determine a potential customer's needs and modify the artificial intelligence (AI) they use in digital marketing to boost sales (Campbell et al. 2020). Future digital product development, especially in digital marketing, is predicted to be heavily reliant on AI. According to Juniper Research, retail investment on AI reached \$2 billion in 2018 and is projected to reach \$7.3 billion by 2022 (Smith 2018). Merchants are being taught how to utilize AI to influence consumer behavior by merchants using a variety of sources, such as AI-controlled chatbots, big data, and client information. According to prior study, AI is anticipated to reach the greatest number of consumers in the context of digital marketing. Conventional customers are valued per unit in global workplaces at a rate many times higher than in retail. As a result, stronger digital marketing materials and high levels of personalization will be emphasized (Keiningham et al. 2017).

Consumers and businesses may depend on technologies for value co-innovation, and they can communicate and collaborate with one another through a digital platform, as noted by Kiron and Schrage (2019). Analysts, however, are concentrating on how AI is frequently utilized to create new action plans because this is a potential result of both business and marketing composition usage of the AI technology (Garbuio & Lin 2019). Virtual consumer engagement is described as the behavioral symptoms that customers exhibit when a company or brand is the center of attention in a digital environment as a result of their motivational factors (Garbuio & Lin 2019). This development in AI-based digital marketing organization gains from the mechanization of different marketing-related processes and data products that may be utilized to support AI (Bag et al. 2021). This calls for the use of AI to be coordinated with digital marketing apps, the natural handling of data, and the return of recommendations to these diverse sectors (Haenlein & Kaplan 2019).

Determining how to handle and measure this data to deliver insightful data and foster consumer trust is one of the issues that digital marketers face as a result of the growing amount of data available (Wirth 2018). While highlighting the connection between customer engagement behaviors and big data, it's crucial to analyze in depth how the organization plans to establish trust by collaborating with big data and AI to change consumer behavior (Hoff & Bashir 2015).

Fortunately, artificial intelligence (AI) systems assist service providers in managing and reacting to massive volumes of data in real-time, automating service interactions, and providing customized client experiences (Bettencourt, Lusch, & Vargo 2014). In urgent situations, AI is quickly becoming a crucial marketing tool (Abadir et al. 2020). The information gathered by customer relationship managers regarding the behaviors and preferences of consumers has altered AI strategy and planning (Dewnarain, Ramkissoon, & Mavondo 2019). Merendino and colleagues (2018) found in their analysis that the digitalization of information also has an impact on board choices. Kim et al. (2019) claim that even when AI is used modestly, the dependency on data quality and quantity as well as a lack of AI abilities can impede progress. The output could be greatly increased by combining AI capabilities with relatively crucial business and marketing transcribing talents. Artificial intelligence (AI)-powered chatbots are computer programs that handle natural language conversational enquiries and direct users to streamline human contact in digital marketing platforms (Chopra 2020). They can give systematic research with an informed account, even though they are unable to solicit human assistance in

encouraging interactions (Brandtzaeg & Flstad 2017). Perceived value and transparency have a significant impact on how people behave when it comes to preferences (Hoff & Bashir 2015). According to Chopra (2020), chatbots have recognized human nature, social intelligence, the existence of society, trust, skills, and usability in relation to social demands. Chatbots are able to identify different psychological kinds, and messages are generated that resonate with tendencies that result in unique recommendation structures (Haenlein & Kaplan 2019). These artificial intelligence (AI) powered solutions, which are already used by many businesses, can offer digital marketing purchasers individualized guidelines to assist clients in locating pertinent goods and services (Haenlein & Kaplan 2019). Unstudied is the area of AI applications for consumer decision-making. To close this research gap, a thorough review of the literature has been conducted.

### **III. Objective**

- To identify the consumer buying behavior is influenced by AI
- To study the AI in digital marketing to beneficial for better marketing decisions

### **IV. Research Methodology**

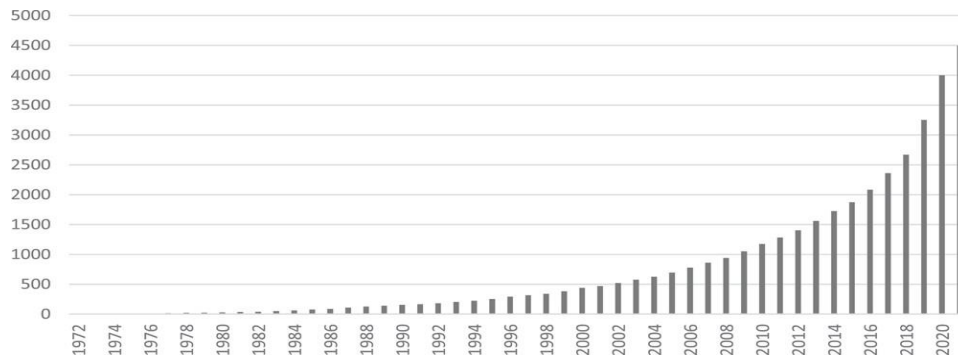
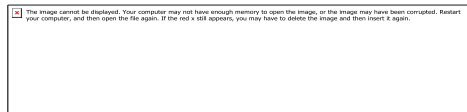
A scientific analysis of the literature review has been done. Academic research, articles, and publications were compiled and discussed from 1972 to till the year 2021 to use of AI innovations in digital marketing. The literature review has been done from the secondary data source. The simple descriptive statistics has been used. The papers were analyzed and discussion has been done in the context of the review, and the research objectives, results and findings were the main keywords.

### **V. Analysis ,Discussion and Findings**

We analyzed the development of literature on the subject of artificial intelligence in digital marketing in our three domains from 1972 to June 2021. This evolution is shown in Figure 1, it reveals a quick and exponential growth over the past ten years, which attests to the rising scientific interest to use the artificial Intelligence in digital marketing . We see that the years from 2017 to June 2021 account for the majority of growth to use of AI in digital marketing on the global arena (53.7% of 4497 articles).

**Figure-1; AI in Digital marketing , Consumer decision and Human psychology**

AI in digital marketing ,consumer decision and human psychology:



*Source of Data; <https://onlinelibrary.wiley.com/doi/full/10.1002/mar.21619>*

**Figure 2; Artificial Intelligence in Digital Marketing in 21<sup>st</sup> Century**



*Source of Data ; <https://link.springer.com/article/10.1007/s43039-022-00057-w>*

## **Discussion of Results**

### **(A) Use of Artificial Intelligence in selected Shopping behavior**

**H<sub>1</sub>: Artificial intelligence can improve customer experiences and affect how people shop for products and services.**

According to earlier study, the four components of the customer experience are cognitive, emotional, physical, and social (Pires et al. 2015). Social components also define the psychological nature of a client's perspective or the social attitudes that underlie them (Keiningham et al. 2017). According to Jarrahi (2018), advances in AI and a shared understanding of typical language usage can enable people to analyze consumer feedback and conclusions at a sizeable, realistic, and fast-paced rate. As a result, AI is probably one of the key digital marketing tools for companies looking to continuously increase client capacity (Haenlein & Kaplan 2019). AI is frequently linked to many digital marketing technologies used by online firms, including augmented and virtual reality, vision-driven photography, and predictive inventory management (Singh et al. 2019). To enhance the customer experience, it is crucial to have a full grasp of the client, their preferences, and their prior encounters. As information and customer profiles are used by AI devices to suggest consumer engagement in the context of digital marketing, this technology can help to accelerate understanding (Ransbotham et al. 2019).

### **(B) Artificial Intelligence Empowered Service Quality**

**H<sub>2</sub>: Artificial intelligence in digital marketing raises the level of customer care and increases productivity.**

How customers view a brand's service contributions can be used to gauge efficiency and service quality. The distinction between intended and acquired service contributions is taken into account when setting these metrics (Ransbotham et al. 2019). The anticipation dis-affirmation hypothesis backs up this notion of service quality. The relationship between the perception of service received and prior expectations for what that help may supply is what leads to the examination of service quality and operational efficiency (Haenlein & Kaplan 2019). There is a dearth of study on how clients respond to machine-controlled services, especially those

incorporating AI, despite the fact that current research is rich with an emphasis on the standard of social services (Montes & Goertzel 2019). Because AI-enabled services are typically constructed around self-management breakthroughs, there may be a major difference between the operational efficiency and service quality between AI-enabled services and social services.

### **(C) Building Trust and Confidence**

#### **H<sub>3</sub>: Building confidence in digital platforms is made easier by artificial intelligence.**

Customers and sellers can interact online for easy use to relationships built on trust and responsibility (Jarrahi, 2018).

The theory has been studied in a variety of contexts over time, such as online delivery behavior, fan pages via web-based media, digital marketing, search engines, and complete linkages in online networks (Bag et al., 2001). Any research takes into account the many roles that trust and partnership obligation play in mediated interactions between customers and retailers. One of the crucial variables—trust—benefits the confidence-responsibility hypothesis (Wirth, 2018). Because it illustrates the interaction between people and robotization, trust has been crucial to the success of machine-controlled administrations (Wirth, 2018). Considering that consumers expect to keep control over how their personal information is used by retailers, Hoff and Bashir (2015) view security as a crucial element of trust. Additionally, prior studies have demonstrated that confidence can change the connections between different components when used in conjunction with AI, for example, to enhance quality and accommodation (Xu et al. 2020).

### **Findings**

Artificial intelligence (AI) has the ability to identify underlying trends in consumer purchasing habits based on the things that customers have already purchased, and it can then provide them with more informed product recommendations to entice them to complete a purchase.

The customer's dynamic journey is shaped by AI-powered customer experience to make it convenient and pleasurable by integrating services provided by computers or other machines to quality assessments.

AI is reshaping the future of digital marketing by fostering consumer trust and delivering individualized experiences.



## **VI. Conclusion**

The delivery of goods and services to clients could change as a result of AI engineering. In conclusion, we can state that digital marketing automation is more dynamic than ever and that data used to analyze consumer behavior yields very predicative outcomes. Through the use of AI, organizations are able to more clearly understand their target customers' wants and preferences, as well as identify them in digital marketing platforms. With its potential to have a greater impact on customer behavior, artificial intelligence (AI) is a relatively new technology in digital marketing. A new marketing playbook called AI marketing makes it easier for businesses to switch from marketing automation to marketing customization. The impact of AI on digital marketing has grown in recent years, enabling marketers to more fully customize their sales and marketing campaigns. Marketers have tailored their sales and marketing efforts and far surpassed their clients' expectations because to the abundance of data that is now available.

Through the use of Chatbot, AI solutions from digital marketing platforms are incorporated into live chat and used to engage customers by quickly and simply replying to their questions. Through a deep dive, businesses may create pleasant, personalized client experiences and increase trust in digital platforms by utilizing artificial digital marketing intelligence tools in conjunction with human-produced data.

## **References**

1. Adler, S., & Sarstedt, M. (2021). Mapping the jungle: A bibliometric analysis of research into construal level theory. *Psychology & Marketing*, 121, 800. <https://doi.org/10.1002/mar.21537>
2. UNCTAD. (2021). *Technology and innovation report 2021: Catching technological waves—Innovation with equity*. New York: United Nations.
3. Poushneh, A. (2021). Humanizing voice assistant: The impact of voice assistant personality on consumers' attitudes and behaviors. *Journal of Retailing and Consumer Services*, 58(1), 1–10
4. Bag, S., Gupta, S., Kumar, A., & Sivarajah, U. (2021). An integrated artificial intelligence framework for knowledge creation and B2B marketing rational decision making for improving firm performance. *Industrial Marketing Management*, 92, 178-189.

5. Abadir, A.P., Ali, M.F., Karnes, W., & Samarasena, J.B. (2020). Artificial intelligence in gastrointestinal endoscopy. *Clinical endoscopy*, 53(2), 132.
6. Belk, R., & Sobh, R. (2019). No assemblage required: On pursuing original consumer culture theory. *Marketing Theory*, 19(4), 489–507.
7. Aceto, G., Persico, V., & Pescapé, A. (2018). The role of Information and Communication Technologies in healthcare: taxonomies, perspectives, and challenges. *Journal of Network and Computer Applications*, 107, 125-154.
8. Bettencourt, L.A., Lusch, R.F., & Vargo, S.L. (2014). A service lens on value creation: marketing's role in achieving strategic advantage. *California management review*, 57(1), 44-66.
9. Brandtzaeg, P.B., & Følstad, A. (2017). Why people use chatbots. In *International conference on internet science* (pp. 377-392). Springer, Cham.
10. Campbell, C., Sands, S., Ferraro, C., Tsao, H.Y.J., & Mavrommatis, A. (2020). From data to action: How marketers can leverage AI. *Business Horizons*, 63(2), 227-243.
11. Chopra, S.S. (2020). Helping Entrepreneurs and Small Businesses Make the Digital Transformation. In *The Evolution of Business in the Cyber Age* (pp. 39-51). *Apple Academic Press*.
12. Dewnarain, S., Ramkissoon, H., & Mavondo, F. (2019). Social customer relationship management: An integrated conceptual framework. *Journal of Hospitality Marketing & Management*, 28(2), 172-188.
13. Garbuio, M., & Lin, N. (2019). Artificial intelligence as a growth engine for health care startups: Emerging business models. *California Management Review*, 61(2), 59-83.
14. Guha, A., Grewal, D., Kopalle, P. K., Haenlein, M., Schneider, M.J., Jung, H., & Hawkins, G. (2021). How artificial intelligence will affect the future of retailing. *Journal of Retailing*, 97(1), 28-41.
15. Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California management review*, 61(4), 5-14.
16. Hoff, K.A., & Bashir, M. (2015). Trust in automation: Integrating empirical evidence on factors that influence trust. *Human factors*, 57(3), 407-434.
17. Jarrahi, M.H. (2018), 'Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making', *Business Horizons*, vol. 61, no. 4, pp. 577-586.
18. Keiningham, T., Ball, J., Benoit, S., Bruce, H.L., Buoye, A., Dzenkowska, J., & Zaki, M.

- (2017). The interplay of customer experience and commitment. *Journal of Services Marketing*.
19. Kim, Y., Kim, C.K., Lee, D.K., Lee, H.W., & Andrada, R.I.T. (2019). Quantifying nature-based tourism in protected areas in developing countries by using social big data. *Tourism Management*, 72, 249-256.
  20. Kiron, D., & Schrage, M. (2019). Strategy for and with AI. *MIT Sloan Management Review*, 60(4), 30-35.
  21. Lysaght, T., Lim, H. Y., Xafis, V., & Ngiam, K.Y. (2019). AI-assisted decision-making in healthcare. *AsianBioethics Review*, 11(3), 299-314.
  22. Merendino, A., Dibb, S., Meadows, M., Quinn, L., Wilson, D., Simkin, L., & Canhoto, A. (2018). Big data, big decisions: The impact of big data on board level decision-making. *Journal of Business Research*, 93, 67-78.
  23. Montes, G.A., & Goertzel, B. (2019). Distributed, decentralized, and democratized artificial intelligence. *Technological Forecasting and Social Change*, 141, 354-358.
  24. Nagy, S., & Hajdú, N. (2021). Consumer Acceptance of the Use of Artificial Intelligence in Online Shopping: Evidence from Hungary. *Amfiteatru Economic*, 23(56).
  25. Pires, G.D., Dean, A., & Rehman, M. (2015). Using service logic to redefine exchange in terms of customer and supplier participation. *Journal of Business Research*, 68(5), 925-932.
  26. Ransbotham, S., Kiron, D., Gerbert, P., & Reeves, M. (2017). Reshaping business with artificial intelligence: Closing the gap between ambition and action. *MIT Sloan Management Review*, 59(1).
  27. Chong, A. Y. L., Ch'ng, E., Liu, M. J., & Li, B. (2017). Predicting consumer product demands via Big Data: The roles of online promotional marketing and online reviews. *International Journal of Production Research*, 55(17), 5142–5156.
  28. Roggeveen, A.L., Grewal, D., Karsberg, J., Noble, S.M., Nordfält, J., Patrick, V.M., & Olson, R. (2021). Forging meaningful consumer-brand relationships through creative merchandise offerings and innovative merchandising strategies. *Journal of Retailing*, 97(1), 81-98.
  29. Singh, J., Flaherty, K., Sohi, R.S., Deeter-Schmelz, D., Habel, J., Le Meunier-FitzHugh, K., & Onyemah, V. (2019). Sales profession and professionals in the age of digitization and artificial intelligence technologies: concepts, priorities, and questions. *Journal of Personal Selling & Sales Management*, 39(1), 2-22.
  30. Smith., S. (2018), *Juniper Research: Retailer Spending on AI to Grow Nearly Fourfold*,

*Reaching \$7.3 Billion by 2022*, Businesswire, viewed 30 March 2021, <<https://www.businesswire.com/news-/home/20180131005068/en/Juniper-Research-Retailer-Spending-on-AI-to-Grow-Nearly-Fourfold-Reaching-7.3-Billion-by-2022>>.

31. Wirth, N. (2018). Hello marketing, what can artificial intelligence help you with?. *International Journal of Market Research*, 60(5), 435-438.
32. Xu, Y., Shieh, C.H., van Esch, P., & Ling, I.L. (2020). AI customer service: Task complexity, problem-solving ability, and usage intention. *Australasian marketing journal*, 28(4), 189-199.
33. Yussaivi, A.M., Lu, C.Y., Syarief, M.E., & Suhartanto, D. (2021). Millennial Experience with Mobile Banking and Artificial Intelligence (AI)-enabled Mobile Banking: Evidence from Islamic Banks. *International Journal of Applied Business Research*, 39-53.
34. <https://onlinelibrary.wiley.com/doi/full/10.1002/mar.21619> Berry, M. J., & Linoff, G. S. (2004). *Data mining techniques: For marketing, sales, and customer relationship management*. John Wiley & Sons.