

ARTIFICIAL INTELLIGENCE AND ITS IMPACT ON CONSUMER BEHAVIOR AND MARKETING MANAGEMENT

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Abstract

The evolution of artificial intelligence (AI) from algorithmic decision-making to the emergence of generative AI (GenAI) is the main subject of this article, which examines the substantial influence of AI on consumer behaviour. With a move from conventional predictive models to more modern generative models like transformers and diffusion models, it examines how AI's predictive powers have affected consumer behaviour over the past 15 years. With AI-powered solutions enabling more efficient client segmentation, targeted marketing, and individualised customer service—all of which increase customer engagement and loyalty—the study emphasises the growing significance of AI in marketing. Nonetheless, issues like the absence of human engagement in AI-powered interactions and sporadic errors in AI forecasts are addressed. The study ends with a forward-looking assessment of AI's potential, highlighting how it might transform marketing, alter consumer behaviour, and improve corporate brand management. With the help of this study, the paper suggests future topics of inquiry and highlights how companies must adjust to the quickly evolving AI-driven landscape in order to stay competitive.

Key Words: Generative AI, Predictive Analytics, Personalization, Customer Segmentation, Automation

Introduction:

We start by reviewing the extensively researched, yet still growing, field of algorithmic predictions and decision-making, alongside the varied positive and negative consumer reactions it elicits. Subsequently, we delve into the just emerging field of GenAI. Here, we differentiate between Convergent Thinking GenAI, which is more domain-specific and geared towards pre-defined task completion, and Divergent Thinking GenAI, which is more domain-general and oriented towards new task fulfillment. For each of these realms, we identify key areas for future investigation As human capabilities are multifaceted and subject to change, so are AI systems and applications. In this paper, we discuss the impact of AI

technologies on consumer behavior, focusing on consumer-facing applications.¹

In the spirit of this anniversary special issue, our work provides a retrospective, current, and prospective view of this AI journey and how consumer behavior has been, is, and will be influenced by it. The remainder of the paper is structured as follows. After delineating algorithmic predictions/decision-making, consumers' negative and positive responses to it, and future research directions regarding predictive AI, we shed light on the rapidly evolving research on GenAI. Specifically, we distinguish Convergent Thinking GenAI (i.e., human capability imitation, personalized content generation, automated marketing research, synthetic experts and research

¹ Erik Hermann, Stefano Puntoni, Volume 180, July 2024, 114720, <https://doi.org/10.1016/j.jbusres.2024.114720> Artificial intelligence and consumer behavior: From predictive to generative AI^b

subjects) and Divergent Thinking GenAI (i.e., idea generation and creativity), both of which provide ample avenues for future research.

Since the introduction of ChatGPT, a prominent example of Generative Artificial Intelligence (GenAI), its amazing developments and capacity to mimic and in certain situations surpass—human capabilities have captivated both researchers and the general public. With a focus on two significant phases of AI development over the previous 15 years, this study offers a thorough examination of how AI affects consumer behaviour. First, we look at the well-established domain of algorithmic decision-making and prediction and the different customer reactions it produces. We then examine the new field of GenAI, making a distinction between Divergent Thinking GenAI, which is more creative and has a wider range of applications, and Convergent Thinking GenAI, which is more specialised and task-oriented. We also point out important directions for these fields' future study.

AI has attracted a lot of interest in marketing, with numerous studies examining its effects on consumer behaviour, ethics, and strategy. In this study, we examine how AI affects consumer-facing applications, including generative AI (used to create new content) and predictive AI (used to make decisions). The 2020s have seen a move towards generative models, like transformers, which can produce text, graphics, and video, however for the majority of the previous decade, AI's predictive powers were the main focus. This study adopts a forward-looking approach to comprehending the potential of GenAI, given its rapid development. As tools like ChatGPT, which mimic human abilities, become more popular, research on GenAI is growing rapidly.

Our grasp of how these technologies will change the economy and society is still in its infancy. A retrospective, present, and future view on how AI has, is, and will continue to influence consumer behaviour is provided in the

paper's conclusion, with a focus on Convergent and Divergent Thinking GenAI.²

The positive impact of AI on Marketing is Better client loyalty, higher conversion rates, and improved engagement are possible outcomes of this. Furthermore, chatbots and virtual assistants driven by AI provide individualized customer support, increasing client happiness while conserving significant time and money. And negative impact of AI on Marketing for instance, chatbots, although commonly used, often offer basic responses and may not have sufficient data to address every customer query accurately. Additionally, AI's predictions and analyses can sometimes be flawed, as even with large datasets, it may struggle with complex tasks like sentiment analysis. For the greatest results, AI still needs human participation and needs a lot of high-quality, well-organised data. Furthermore, even with the development of generative AI tools such as ChatGPT, they are still unable to match the level of creativity that comes from human intellectual thinking.³

The behavioral interaction between artificial intelligence and consumers can bring consumers multifaceted experiences, which are of great value for enterprises to improve brand management and adjust and optimize market strategies. In this paper, we construct a gray multiple linear regression model by combining the classical multiple linear regression model and gray system theory. Taking consumers as the research object, we design a questionnaire and carry out the reliability test to obtain the data related to the experience brought by behavioral interaction with consumers and the brand management and marketing strategy of enterprises. Finally, this paper takes AI and consumer behavioral interaction as the independent variable and corporate brand management and marketing strategy as the

² Robert Farrell, March 21, 2023, The Impact of Artificial Intelligence on Marketing.

³ Hashimy, Sayed Qudrat, The Convolution of Artificial Intelligence and Intellectual Property Rights (April 09, 2023), Available at SSRN: <https://ssrn.com/abstract=4080279> or <http://dx.doi.org/10.2139/ssrn.4080279>

dependent variable The digital media era has transformed marketing, blending traditional and new platforms, and emphasizing the need for effective brand strategies. Since the global economy and technology are changing existing trends, corporate brand management is becoming increasingly important to the success of businesses.

How AI Will Influence Consumer Behavior

- Search Engine Usage by Consumers is AI-powered websites are significantly transforming buying behavior and decision-making. Consumers' spending per session has been notably increasing with these smarter platforms, which guide them through more efficient purchasing channels and reduce the chances of fatigue or distraction.
- Consumer Loyalty is 49% of consumers are more likely to return to an online platform if AI is involved. AI helps match consumers with the right products, hosts, and experiences, ensuring they are satisfied and less likely to shop elsewhere next time they need something.
- Consumer Trust in Brands is the easiest way for brands to build trust is by providing real value in exchange for customer data. AI plays a critical role in this, as seen with platforms like Google Now, where consumers trust AI-driven products that personalize experiences and deliver substantial value.

It focuses on the groundbreaking impact of artificial intelligence on customers and marketing techniques. The study uses quantitative data, including analysis of social media analytics and any information from the customers on the social media platform, the results from the AI market research tools, and lastly, analysis of case studies from the industry. The statistics studies prove the effectiveness of AI's integration into the marketing sphere and the improvements in its outcomes. Regarding the effectiveness of AI-led promotion, it was

found that 'ads placed using AI had a 25 per cent increase in click-through rates compared to the traditional models. Using the chat bots enhanced the general customer satisfaction level, which improved from 69.85 to 84.89. These results point out how AI seems to improve people's level of engagement or happiness and how it can offer deeper and more accurate customer insights and more specific marketing encounters. The paper examines the use of AI in segmentation and targeting. It reveals how the technology could revolutionize marketing procedures by enabling the right identification and management of valuable customer segments. The article also outlines the limitations in the current marketing activities and some ideas for further research, including a shifted ethical use of AI and AI in developing countries. This study, therefore, brings important findings to the existing literature about how knowledge of AI's role in DM can aid in improving marketing strategies during digital transformation. Managers are encouraged to adopt new technological inventions to warrant fairness and accomplishment within their organizations.

Review of Literature:

- Mr. Patil Sudhir Rajdhar Dr. D. Y. Patil Vidyapeeth's Global Business School & Research Centre Pune, JANURY-DECEMBER 2021, Vol I, Issue I (ISSN: 2583-0864), Artificial Intelligence (AI) Impact on Consumer Buying Behavior regarding Internet Shopping.⁴

Before making a purchase, consumers now research things online, compare possibilities, seek for opinions on social media, and access content like podcasts and online courses. Previously, buying was easier and involved direct interactions with salespeople. Due to this change, businesses now have less direct control on customer behaviour,

⁴ Mr. Patil Sudhir Rajdhar Dr. D. Y. Patil Vidyapeeth's Global Business School & Research Centre Pune, JANURY-DECEMBER 2021, Vol I, Issue I (ISSN: 2583-0864), Artificial Intelligence (AI) Impact on Consumer Buying Behavior regarding Internet Shopping.

particularly in light of the growth of e-commerce, which allows customers to shop whenever and wherever they choose. Due to rising internet and smartphone usage, the Indian e-commerce business is expanding quickly. These days, consumers assess things in numerous ways, looking for quick fixes, investigating several companies, and appreciating online experiences. Businesses can maintain their competitiveness by comprehending how AI has influenced consumer behaviour.

- Lei Luo, Jul 02, 2024, Volume 9 (2024): Issue 1 (January 2024), The Impact of Artificial Intelligence and Consumer Behavior Interaction on Corporate Brand Management and Marketing Strategies.⁵

This study looks at how artificial intelligence (AI) affects customer behavior and how it affects marketing strategies and corporate brand management. Using information gathered via a questionnaire, a gray multiple linear regression model was created by fusing gray system theory and classical regression. According to the report, brand management and marketing tactics are greatly impacted by sensory, emotional, cognitive, and personalized experiences as well as privacy issues. The results demonstrate how strategically important it is for companies to use AI to better analyze customer behavior, manage their brands, and modify their marketing tactics.

- Abid Haleem, Mohd Javaid, Mohd Asim Qadri, Ravi Pratap Singh, Rajiv Suman, 2022, Volume 3, 2022, Pages 119-132.⁶

In this study, the effects of artificial intelligence (AI) on consumer behavior,

corporate brand management, and marketing strategies are examined. A questionnaire was used to gather data for the development of a gray multiple linear regression model that combined gray system theory and classical regression. According to the report, privacy concerns and sensory, emotional, cognitive, and personalized experiences have a big impact on brand management and marketing tactics. The results emphasize how crucial it is for companies to use AI strategically in order to better understand customer behavior, manage their brands, and modify their marketing plans.

- Anju B. Nandrajog; Navjot Singh; Komal Ahuja; Shiva Mehta, 24-28 June 2024, 10.1109/ICCCNT61001.2024.10725771, AI and Consumer Behavior: Innovations in Marketing Strategy and Consumer Engagement.⁷

The impact of AI on customer engagement and marketing tactics is examined in this study using data from case studies, social media analytics, and AI market research tools. The results showed that chatbots increased customer satisfaction from 69.85% to 84.89% and that AI-powered ads increased click-through rates by 25%. AI also makes targeting and segmentation better, which results in more customized marketing and more in-depth customer insights. The paper points out areas that still need research and offers suggestions for additional study on the ethical use of AI and how it works in underdeveloped countries. The usage of AI to improve marketing strategies is pushed on managers throughout digital transformation.

⁵ Lei Luo, Jul 02, 2024, Volume 9 (2024): Issue 1 (January 2024), The Impact of Artificial Intelligence and Consumer Behavior Interaction on Corporate Brand Management and Marketing Strategies

⁶ Abid Haleem, Mohd Javaid, Mohd Asim Qadri, Ravi Pratap Singh, Rajiv Suman, 2022, Volume 3, 2022, Pages 119-132

⁷ Anju B. Nandrajog; Navjot Singh; Komal Ahuja; Shiva Mehta, 24-28 June 2024, 10.1109/ICCCNT61001.2024.10725771, AI and Consumer Behavior: Innovations in Marketing Strategy and Consumer Engagement

- Chris Livadiotis, Aug 25, 2024, The Impact of Artificial Intelligence on Consumer Behavior Analysis in Digital Marketing⁸

When it comes to applying context and strategy, human expertise is still crucial. As AI develops, new tools like sentiment analysis and voice search will help companies expand and remain competitive.

- Tiago Dias, Rui Gonçalves, Renato Lopes da Costa, Leandro Pereira, Álvaro Dias, Volume 19(1), May 2023, 121-148, The impact of artificial intelligence on consumer behaviour and changes in business activity due to pandemic effects.⁹

AI's application in digital marketing has altered how businesses communicate with their customers. AI methods like machine learning and predictive analytics process vast amounts of data, yielding insights that power round-the-clock chatbots and customized recommendations that boost consumer satisfaction and income. For the use of context and strategy, human skill is still crucial. As AI develops, new technologies like voice search and emotion analysis will help companies expand and remain competitive.

- Khuslen Gantumur, 12 Jan 2025, The Impact of Artificial Intelligence Marketing Offers on Online Shopping Behavior.¹⁰

The results demonstrate how AI enhances consumer experiences by streamlining decision-making and personalizing purchasing experiences. The report does point out a research void on the ethical facets of AI, including cybersecurity, trust, and data privacy. Businesses are encouraged to implement ethical standards in order to gain the trust of consumers as AI

handles increasingly sensitive data. The study emphasizes how investments in AI can improve marketing plans and provide a competitive edge.

- Tiago Dias, Renato Lopes da Costa, Leandro F. Pereira, Alvaro Dias, Submitted: 2022-11-29, The impact of artificial intelligence on consumer behaviour and changes in business activity due to pandemic effects, DOI: 10.14254/1795-6889.2023.19-1.8¹¹

Due to societal alienation brought on by the COVID-19 epidemic, e-commerce has exploded and interest in artificial intelligence has grown. Through a poll of both consumers and businesses, this study investigates if the epidemic has prompted businesses to embrace AI. The results demonstrate how COVID-19 has increased the significance of AI for businesses due to its alleged advantages. Half of the participants choose online purchasing, indicating that consumers are more receptive to AI and seek completely automated interactions.

- Varsha Jain, Ketan Wadhvani, Jacqueline K. Eastman 23 August 2023, Artificial intelligence consumer behavior: A hybrid review and research agenda

<https://doi.org/10.1002/cb.2233>.¹²

With AI tools like machine learning and recommendation systems improving personalization and decision-making, this study looks at how developments in AI have affected consumer behavior (CB). Key themes including customer trust, engagement, and decision-making are identified in a survey of 107

⁸ Chris Livadiotis, Aug 25, 2024, The Impact of Artificial Intelligence on Consumer Behavior Analysis in Digital Marketing

⁹ Tiago Dias, Rui Gonçalves, Renato Lopes da Costa, Leandro Pereira, Álvaro Dias, Volume 19(1), May 2023, 121-148, The impact of artificial intelligence on consumer behaviour and changes in business activity due to pandemic effects.

¹⁰ Khuslen Gantumur, 12 Jan 2025, The Impact of Artificial Intelligence Marketing Offers on Online Shopping Behavior.

¹¹ Tiago Dias, Renato Lopes da Costa, Leandro F. Pereira, Alvaro Dias, Submitted: 2022-11-29, The impact of artificial intelligence on consumer behaviour and changes in business activity due to pandemic effects, DOI: 10.14254/1795-6889.2023.19-1.8

¹² Varsha Jain, Ketan Wadhvani, Jacqueline K. Eastman 23 August 2023, Artificial intelligence consumer behavior: A hybrid review and research agenda <https://doi.org/10.1002/cb.2233>.

papers. Gaps in the literature are also highlighted, particularly with regard to ethical concerns like prejudice and privacy. It provides a platform for further research and urges deeper investigation into how AI affects consumer behavior and companies. This review advances theory and offers useful information to businesses and scholars alike.

Difficulties and Moral Aspects

The application of AI in marketing has many benefits, but there are drawbacks as well. The possible lack of human interaction in customer service is one of the main worries. Even while AI is capable of handling simple tasks, many customers still prefer speaking with human agents, particularly when handling delicate or complicated matters.

Conclusion

Targeted marketing, consumer segmentation, and content production have all benefited from the move to generative models. But even with these developments, problems like the absence of human involvement and sporadic mistakes in AI forecasts still exist. While taking into account the ethical ramifications and the need for additional research in areas like AI transparency, privacy, and its role in developing markets, the study emphasizes the significance of adjusting to this quickly evolving AI-driven landscape. In order to be competitive and maintain a balanced approach to customer connections, businesses must continue to be proactive in embracing AI breakthroughs.