

The Role of Big Data and Artificial Intelligence in Shaping Consumer Preferences in the Digital Market

Putu Maha Putra

Politeknik Ganesha Guru, Indonesia

Email: guzpuma@gmail.com

Entered : December 12, 2026
Accepted: March 02, 2026

Revised : January 26, 2026
Published : March 15, 2026

ABSTRACT

The rapid development of digital technology has transformed contemporary markets into data-driven ecosystems where consumer behavior can be continuously monitored and analyzed. The integration of Big Data and Artificial Intelligence has enabled companies to implement highly personalized marketing strategies that influence consumer decision-making processes. This study aims to analyze the role of Big Data and Artificial Intelligence in shaping consumer preferences within digital markets, particularly through mechanisms of behavioral prediction, algorithmic personalization, and repeated exposure across multiple digital touchpoints. This research employs a qualitative descriptive approach based on a systematic literature review of recent scholarly publications related to digital marketing, Big Data analytics, and Artificial Intelligence. Data were collected from reputable academic journals indexed in international databases and analyzed using thematic analysis and conceptual synthesis to identify key patterns and mechanisms through which data-driven technologies influence consumer preferences. The results indicate that Big Data enables firms to collect and analyze large volumes of behavioral data, while Artificial Intelligence transforms these data into predictive insights that generate personalized recommendations, targeted advertisements, and automated interactions. These mechanisms significantly increase consumer engagement, conversion rates, and transaction values, while simultaneously guiding consumer attention toward specific products. Consequently, consumer preferences in digital markets are not only revealed but actively constructed through algorithmic systems embedded within digital platforms. In conclusion, Big Data and Artificial Intelligence function as strategic technologies that reshape consumer preference formation by enabling firms to predict, personalize, and influence purchasing behavior in contemporary data-driven marketing environments.

Keywords: Artificial intelligence, Big data analytics, Consumer preferences, Digital marketing, Data-driven markets

INTRODUCTION

The rapid expansion of digital technologies has fundamentally transformed the structure of contemporary markets and the behavior of consumers in the global economy. Over the past decade, digital platforms have increasingly relied on data-driven infrastructures that integrate Big Data analytics, Artificial Intelligence, cloud computing, and customer relationship management systems to optimize marketing strategies and consumer engagement. These technologies enable firms to capture large volumes of behavioral data generated through online transactions, browsing patterns, and social media interactions, allowing companies to understand consumer needs with unprecedented precision. As a result, marketing strategies are no longer based solely on demographic segmentation or traditional surveys but increasingly rely on predictive models capable of analyzing millions of data points in real time. This transformation has reshaped the logic of competition in digital markets, where companies that possess



advanced data analytics capabilities are able to anticipate consumer needs, personalize offerings, and create more efficient marketing campaigns. Consequently, the integration of Big Data and Artificial Intelligence has become a strategic resource that not only enhances marketing performance but also reshapes how consumer preferences emerge within digital ecosystems (Raji et al., 2024).

In the digital market environment, companies increasingly rely on sophisticated data analytics to transform raw data into actionable insights. Big Data technologies enable organizations to collect and analyze information from multiple sources, including online purchases, browsing histories, geolocation data, and interactions across digital platforms. Artificial Intelligence complements this capability by applying machine learning algorithms that identify patterns in consumer behavior and generate predictive models of future consumption. These analytical capabilities allow companies to move beyond reactive marketing approaches toward proactive strategies that anticipate consumer demand and dynamically adjust marketing messages. Such data-driven strategies have contributed to the rise of highly personalized marketing systems, where consumers receive recommendations, advertisements, and product suggestions tailored to their individual preferences. The integration of these technologies has significantly improved the efficiency of marketing campaigns by enabling firms to target consumers with greater accuracy and deliver relevant content in real time (Na et al., 2025).

Empirical evidence further demonstrates that the adoption of data-driven marketing strategies produces measurable improvements in business performance. Studies show that the implementation of Big Data analytics and Artificial Intelligence in digital marketing can significantly increase consumer engagement, conversion rates, and average transaction values. For instance, empirical research indicates that data-driven personalization strategies can increase customer engagement by approximately 48.57 percent, while conversion rates may increase by as much as 132 percent. In addition, the average transaction value experienced by consumers can increase by around 46.67 percent when marketing strategies incorporate predictive analytics and personalized recommendation systems. These results illustrate how algorithmic analysis and automated decision-making tools have become central to modern marketing practices. By leveraging large-scale data analysis and intelligent automation, companies can continuously refine their marketing strategies and deliver more relevant experiences to consumers, thereby strengthening the relationship between brands and their target audiences (Na et al., 2025).

Artificial Intelligence plays a particularly critical role in shaping consumer experiences within digital markets through the implementation of recommendation systems, targeted advertising, and predictive analytics. AI algorithms analyze consumers' historical purchasing behavior, browsing activities, demographic characteristics, and social media interactions to create highly personalized consumer journeys. These systems are capable of recommending products that match individual preferences, optimizing inventory management, and dynamically adjusting marketing content in real time. Moreover, the integration of automated systems such as chatbots and intelligent customer service platforms allows companies to maintain continuous interaction with consumers, thereby improving responsiveness and service quality. The ability of AI technologies to analyze complex behavioral patterns enables companies to predict consumer needs before they are explicitly expressed, transforming marketing from a reactive process into a predictive and adaptive system. Consequently, Artificial Intelligence not only enhances operational efficiency but also significantly influences how consumers perceive products and make purchasing decisions in digital environments (Babatunde et al., 2024).

The emergence of AI-driven personalization has fundamentally altered the way consumer preferences are formed in digital marketplaces. Traditionally, consumer preferences were understood as relatively stable psychological dispositions that guided purchasing behavior. However, in data-driven markets, consumer preferences are increasingly shaped by algorithmic systems that curate information, recommend products, and filter available choices. Through continuous interaction with personalized digital interfaces, consumers are exposed to tailored product recommendations, targeted advertisements, and dynamic pricing strategies that influence their perceptions of value and desirability. By analyzing past interactions and behavioral data, AI systems can identify latent preferences and gradually steer consumer attention toward specific products or brands. As a result, the boundaries between consumer preference discovery and preference formation become increasingly blurred, as algorithmic systems play an active role in shaping the decision-making environment in which consumers operate (Ramesh & Murugan, 2025).

Several empirical studies have demonstrated that AI-based personalization significantly influences consumer purchase intentions and actual purchasing behavior. In sectors such as fashion retail and durable goods, recommendation algorithms and targeted advertising have been shown to increase consumers' likelihood of selecting specific products by presenting them as relevant and desirable options. These personalized marketing strategies reduce information overload and simplify decision-making processes by narrowing the range of choices presented to consumers. As a consequence, consumers are more likely to rely on algorithmic recommendations when making purchasing decisions. Research indicates that personalized marketing tools significantly enhance consumer engagement, improve perceived relevance of products, and ultimately increase the probability of purchase. These findings highlight the central role of Artificial Intelligence in shaping consumption patterns and influencing consumer preferences within digital marketplaces (Gupta, 2025).

Despite these advantages, the increasing reliance on AI-driven personalization also raises critical concerns regarding consumer autonomy, algorithmic bias, and data privacy. While personalized recommendations can improve user experience, they may also limit consumer exposure to alternative options by reinforcing existing preferences through algorithmic filtering. This phenomenon, often referred to as algorithmic steering, raises questions about the extent to which consumer choices remain autonomous in digital environments dominated by intelligent systems. Furthermore, the use of personal data for predictive analytics raises ethical concerns related to privacy protection and data governance. Scholars have also highlighted the potential for algorithmic bias in recommendation systems, where certain products or brands may be systematically prioritized due to commercial incentives embedded within digital platforms. These concerns suggest that the influence of Artificial Intelligence on consumer preferences is not merely a technological issue but also a social and ethical challenge that requires careful examination (Verma & Fatma, 2025).

Although a growing body of literature has examined the role of Artificial Intelligence and Big Data in digital marketing, several research gaps remain. First, many studies focus primarily on the general impact of digital marketing technologies without examining how specific tools, such as personalized advertising, recommendation algorithms, and predictive analytics, influence consumer preferences in particular product categories. For example, research on durable goods and high-involvement purchasing decisions remains relatively limited compared to studies focusing on low-cost or frequently purchased products. This limitation suggests that the mechanisms through which AI-based personalization shapes consumer preferences may vary depending on

the complexity and perceived risk of the purchasing decision. Understanding these variations is essential for developing more comprehensive models of consumer behavior in digital markets (Suleman et al., 2025).

Second, existing research rarely adopts a longitudinal perspective to analyze how continuous exposure to personalized digital environments influences consumer trust, loyalty, and preference dynamics over time. Most empirical studies rely on cross-sectional survey data that capture consumer perceptions at a single point in time. However, the long-term implications of algorithmic personalization for consumer relationships with brands remain poorly understood. Continuous interaction with AI-driven systems may gradually shape consumer expectations, influence brand attachment, and alter the dynamics of consumer loyalty. Without longitudinal evidence, it remains difficult to determine whether personalized digital marketing strengthens or weakens long-term consumer relationships in the evolving digital marketplace (Cui & Mohib, 2025).

Third, there is still limited theoretical integration between psychological mechanisms of consumer decision-making and the algorithmic architecture that governs digital recommendation systems. Many studies analyze consumer behavior from a psychological perspective, emphasizing constructs such as perceived usefulness, trust, or purchase intention. Conversely, other studies focus on the technical aspects of AI systems without adequately considering how these systems interact with human cognitive processes. This separation between psychological and technological perspectives has limited the development of comprehensive theoretical models that explain how consumer preferences are simultaneously shaped by human cognition and algorithmic mediation. Bridging this conceptual divide represents an important step toward understanding the broader implications of data-driven marketing in digital environments (Anning-Dorson et al., 2025).

Finally, empirical evidence regarding AI-driven consumer behavior remains heavily concentrated in developed economies and technologically advanced markets. Many existing studies are conducted in Western contexts or within single national markets, limiting the generalizability of their findings to other regions. In emerging markets, where digital adoption patterns, cultural values, and consumer expectations may differ significantly, the dynamics of AI-driven personalization may produce different outcomes. The limited availability of cross-cultural empirical studies highlights the need for further research that examines how Big Data and Artificial Intelligence influence consumer preferences across diverse market contexts and cultural environments (Sifat, 2025).

Based on these considerations, the novelty of this study lies in its attempt to provide an integrative analysis of how Big Data analytics and Artificial Intelligence simultaneously shape consumer preferences within digital markets by examining the interaction between algorithmic personalization, consumer behavioral responses, and broader market dynamics. By combining insights from digital marketing, consumer behavior theory, and data-driven technological frameworks, this study seeks to contribute to the development of a more comprehensive understanding of preference formation in contemporary digital ecosystems. In particular, the research aims to address existing gaps by analyzing the mechanisms through which AI-based personalization influences consumer perceptions, decision-making processes, and purchasing behavior in data-driven marketplaces.

Therefore, the objective of this study is to analyze the role of Big Data and Artificial Intelligence in shaping consumer preferences within digital markets, with particular attention to how algorithmic personalization influences consumer decision-making

processes and consumption behavior in contemporary data-driven marketing environments.

METHODS

This study employs a qualitative research approach with a descriptive-analytical design to examine how Big Data and Artificial Intelligence contribute to shaping consumer preferences in digital markets. The qualitative approach is chosen because the research seeks to understand complex interactions between technological systems, marketing strategies, and consumer behavioral responses within data-driven environments. Data collection is conducted through a literature-based research strategy that systematically reviews scholarly articles, empirical studies, and theoretical works related to Big Data analytics, Artificial Intelligence, digital marketing, and consumer behavior. The sources of data consist primarily of peer-reviewed international journal articles published between 2023 and 2025, ensuring that the analysis reflects the most recent developments in digital marketing and AI-driven consumer analytics. The literature sources are obtained through academic databases such as Google Scholar, Scopus-indexed journals, and reputable marketing and information systems publications. The data collection process involves identifying relevant publications, screening them based on relevance to the research topic, and organizing them according to thematic categories such as data-driven marketing transformation, AI-based personalization, and consumer preference formation in digital marketplaces.

The data analysis in this research applies a qualitative thematic analysis technique combined with a conceptual synthesis approach. Initially, the selected literature is analyzed through a process of coding and categorization to identify recurring themes related to the role of Big Data and Artificial Intelligence in shaping consumer behavior and market dynamics. Each study is examined to extract key findings, theoretical frameworks, and empirical evidence that explain how algorithmic personalization influences consumer preferences. After the coding process, the findings are interpreted through comparative analysis in order to identify patterns, similarities, and differences among previous studies. This process allows the researcher to construct an integrated conceptual explanation regarding the mechanisms through which AI-driven analytics shape consumer perceptions, decision-making processes, and purchasing behavior in digital markets. Finally, the results of the analysis are synthesized to develop a comprehensive analytical framework that highlights the interaction between technological infrastructures, algorithmic systems, and consumer behavioral responses within contemporary data-driven marketing environments.

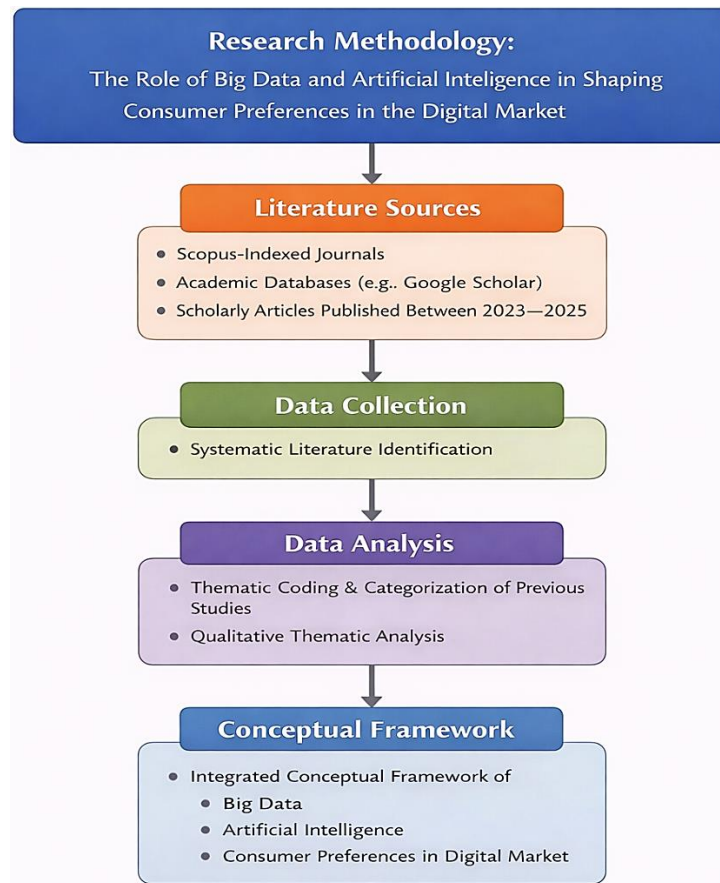


Figure 1. Diagram Conceptual Research

RESULTS AND DISCUSSION

The analysis of the role of Big Data and Artificial Intelligence in digital markets shows that data-driven technologies significantly influence marketing performance and consumer preference formation. The integration of predictive analytics, recommendation systems, and personalized advertising allows companies to analyze consumer behavior patterns and deliver targeted marketing strategies that shape purchasing decisions. Previous empirical studies demonstrate that AI-based personalization not only improves marketing efficiency but also affects how consumers interact with digital platforms and respond to product offerings. The following table summarizes the main impacts of Big Data and Artificial Intelligence on marketing performance and consumer preference formation in digital markets.

Table 1. The Impact of Big Data and Artificial Intelligence on Marketing Performance and Consumer Preferences

Indicator	Technology Used	Empirical Impact	Implication for Consumer Preferences
Customer Engagement	AI Recommendation Systems	+48.57% increase in user interaction	Consumers are more likely to explore products aligned with their interests
Conversion Rate	Predictive Analytics & Personalized Advertising	+132% increase in purchase completion	Consumers are guided toward purchase decisions through relevant product suggestions
Average Transaction Value	Dynamic Pricing & Personalized Promotions	+46.67% increase in	Consumers tend to purchase higher-value products due to personalized offers

		spending per transaction	
Product Discovery	Behavioral Data Analysis	Improved relevance of product recommendations	Consumer preferences are gradually shaped by algorithmic suggestions
Purchase Decision Efficiency	Automated AI-based Filtering	Reduced information overload	Consumers rely more on algorithmic recommendations in decision making

The results presented in Table 1 demonstrate that Big Data and Artificial Intelligence significantly influence both marketing performance and consumer preference formation in digital markets. The increase in customer engagement indicates that personalized content and AI-driven recommendation systems are capable of capturing consumer attention more effectively than traditional marketing approaches. Similarly, the substantial improvement in conversion rates suggests that predictive analytics and targeted advertising help consumers identify relevant products more quickly, thereby increasing the likelihood of purchase decisions. The rise in average transaction value also illustrates how dynamic pricing and personalized promotional strategies can influence consumer perceptions of product value and encourage higher spending behavior. In addition, the improvement in product discovery shows that algorithmic recommendation systems play an important role in guiding consumers toward specific products that match their behavioral profiles. Overall, these findings highlight that Artificial Intelligence and Big Data technologies do not merely analyze consumer preferences but actively participate in shaping consumer choices and purchasing behavior within data-driven digital marketplaces.

Discussion

The findings of this study demonstrate that Big Data and Artificial Intelligence play a critical role in shaping consumer preferences within digital markets. The results presented in the previous section indicate that data-driven technologies significantly improve consumer engagement, conversion rates, and transaction value through personalized marketing strategies. These findings support the argument that digital market environments are increasingly governed by algorithmic systems capable of influencing how consumers discover, evaluate, and select products. In data-driven markets, consumer preferences are no longer shaped solely by intrinsic motivations or traditional marketing communications but are increasingly influenced by predictive algorithms that analyze large volumes of behavioral data. This transformation reflects a broader shift in contemporary marketing practices in which companies rely on Big Data analytics and Artificial Intelligence to anticipate consumer needs and deliver tailored experiences that influence purchasing decisions. The increasing integration of data-driven technologies in marketing strategies demonstrates that the relationship between firms and consumers is becoming progressively mediated by algorithmic infrastructures capable of shaping market interactions and consumption patterns (Du & Du, 2025).

One of the most important mechanisms through which Big Data contributes to consumer preference formation is the ability to collect and analyze massive volumes of behavioral data generated by consumers during their interactions with digital platforms. In digital environments, consumers continuously generate data through activities such as browsing product pages, clicking advertisements, interacting with social media content,

and completing online transactions. These data provide valuable insights into consumer interests, intentions, and purchasing patterns. Big Data technologies enable companies to process these large datasets in order to identify behavioral trends and predict future consumption behavior. As a result, companies can construct detailed consumer profiles that reveal preferences, lifestyle patterns, and purchasing tendencies. This analytical capability allows firms to tailor their marketing strategies in ways that directly influence consumer perceptions and preferences. Through the systematic analysis of consumer data, companies are able to anticipate emerging trends and deliver personalized product recommendations that align with individual interests. Consequently, Big Data serves as the foundation of data-driven marketing strategies by enabling firms to transform raw consumer data into predictive insights that shape consumer decision-making processes in digital markets (Samsukha et al., 2025).

Artificial Intelligence complements Big Data by transforming analytical insights into actionable marketing strategies that directly interact with consumers. AI technologies such as machine learning algorithms, natural language processing, and predictive analytics enable companies to process complex datasets and generate personalized marketing content in real time. These technologies analyze consumer behavior patterns to predict purchase intentions and recommend products that match individual preferences. The ability of AI systems to learn from historical data allows them to continuously refine their predictive models, thereby improving the accuracy of product recommendations and marketing messages. This process creates a dynamic feedback loop in which consumer behavior informs algorithmic predictions, and algorithmic predictions influence subsequent consumer behavior. As a result, Artificial Intelligence becomes an active participant in shaping consumer preferences rather than merely responding to them. The findings of this study align with previous research indicating that AI-driven recommendation systems significantly influence consumer attention and purchasing decisions by presenting products that match predicted interests and consumption patterns (Raji et al., 2024).

Another important aspect of AI-driven marketing strategies is the development of hyper-personalized consumer experiences. Personalization technologies allow companies to customize marketing messages, product displays, and promotional offers based on individual consumer profiles. By analyzing historical purchase records, browsing behavior, and demographic data, AI systems can generate personalized recommendations that increase the relevance of marketing content. These personalized interactions enhance the consumer experience by reducing information overload and presenting consumers with options that closely match their interests. Research indicates that hyper-personalized marketing strategies significantly increase consumer engagement and satisfaction, which in turn strengthens brand loyalty and increases the likelihood of repeat purchases. The ability of AI technologies to deliver relevant and timely recommendations creates a sense of convenience and efficiency for consumers, encouraging them to rely on algorithmic suggestions when making purchasing decisions. As a result, personalization becomes a powerful mechanism through which Artificial Intelligence influences consumer preferences and shapes consumption patterns within digital marketplaces (Babadoğan, 2024).

The empirical findings of this study also highlight the importance of predictive analytics in shaping consumer preferences. Predictive analytics uses machine learning algorithms to analyze historical consumer data and identify patterns that indicate future purchasing behavior. By predicting consumer needs before they are explicitly expressed, AI systems can proactively recommend products that match anticipated preferences. This predictive capability allows companies to influence consumer decision-making processes

by presenting relevant products at the right moment in the consumption journey. For example, predictive recommendation systems can suggest complementary products based on previous purchases, thereby increasing the probability of additional transactions. This proactive approach to marketing shifts the traditional logic of consumer demand, where companies respond to expressed needs, toward a predictive model in which companies anticipate and shape consumer demand. Consequently, predictive analytics plays a crucial role in guiding consumer attention and influencing purchasing decisions within digital markets (Sahu & Anjana, 2025).

In addition to predictive analytics, recommendation systems represent another key mechanism through which Artificial Intelligence shapes consumer preferences. Recommendation algorithms analyze user behavior, including browsing patterns, product ratings, and purchase histories, to identify products that are likely to interest specific consumers. These systems then present recommended products through personalized product lists, suggested items, or targeted advertisements. The continuous exposure of consumers to algorithmically curated recommendations gradually influences their perceptions of product desirability and relevance. Over time, repeated exposure to specific product categories or brands can reinforce consumer preferences and increase the likelihood of purchase. This process illustrates how algorithmic systems actively participate in shaping consumer preferences by directing attention toward particular products while limiting exposure to alternative options. The findings of this study support previous research indicating that personalized recommendation systems significantly influence consumer purchasing behavior by guiding product discovery and shaping perceptions of value within digital marketplaces (Iqbal et al., 2025).

Another important mechanism identified in this research is the role of real-time micro-segmentation in digital marketing strategies. Traditional marketing segmentation typically categorizes consumers into broad demographic groups based on factors such as age, income, or geographic location. However, Big Data analytics enables companies to perform micro-segmentation by analyzing behavioral data in real time. Through this process, consumers are categorized into highly specific segments based on their browsing behavior, purchasing patterns, and engagement history. This granular segmentation allows companies to deliver customized marketing messages tailored to the interests of individual consumers. The use of micro-segmentation strengthens the effectiveness of personalized marketing campaigns by ensuring that each consumer receives content that aligns with their behavioral profile. As a result, consumers are more likely to perceive the recommended products as relevant and desirable, which reinforces existing preferences and encourages future purchases. The ability to dynamically segment consumers based on real-time behavioral data represents a significant advancement in digital marketing practices and further demonstrates the influence of Big Data and Artificial Intelligence in shaping consumer preferences (Joseph et al., 2025).

Beyond marketing optimization, Artificial Intelligence also transforms consumer-brand interactions through automated communication technologies such as chatbots and virtual assistants. These systems enable companies to provide immediate responses to consumer inquiries, recommend products, and assist consumers during the purchasing process. The automation of customer service interactions enhances the efficiency of digital platforms while creating more personalized consumer experiences. Chatbots and virtual assistants use natural language processing technologies to interpret consumer requests and provide relevant responses based on previous interactions. Over time, these automated systems accumulate knowledge about consumer preferences and behavioral patterns, allowing them to provide increasingly accurate recommendations. This continuous interaction between consumers and AI-driven systems strengthens brand

relationships and influences consumer perceptions of reliability and convenience. As consumers become accustomed to interacting with automated systems, they may develop trust in algorithmic recommendations, which further reinforces the influence of AI technologies on consumer preferences (Babatunde et al., 2024).

However, while AI-driven personalization offers numerous benefits for both companies and consumers, it also raises important psychological and ethical concerns. One of the primary concerns relates to the potential reduction of consumer autonomy in decision-making processes. When recommendation systems consistently present consumers with products that match their previous preferences, consumers may be exposed to a limited range of options. This phenomenon, often referred to as the filter bubble effect, can restrict consumer exposure to alternative products or viewpoints. As a result, consumer preferences may become increasingly shaped by algorithmic filtering rather than independent exploration. This dynamic raises questions about the extent to which consumer choices remain autonomous in digital environments dominated by algorithmic recommendation systems. Scholars argue that while personalization improves convenience and efficiency, it may also subtly influence consumer preferences by guiding attention toward particular products or brands (Sifat, 2025).

Another ethical concern relates to issues of data privacy and algorithmic bias. Big Data analytics relies heavily on the collection and analysis of personal consumer data, including browsing behavior, location information, and social media activity. While these data enable companies to deliver personalized services, they also raise concerns regarding privacy protection and data security. Consumers may be unaware of the extent to which their personal data are collected and used for predictive marketing purposes. In addition, algorithmic systems may inadvertently reproduce biases present in historical data, leading to unequal treatment of different consumer groups. These concerns highlight the importance of developing transparent and responsible AI governance frameworks that balance technological innovation with ethical considerations. The increasing influence of algorithmic systems in shaping consumer preferences requires careful regulation to ensure that digital marketing practices remain fair, transparent, and respectful of consumer rights (Theodorakopoulos & Theodorakopoulou, 2024).

Overall, the findings of this study confirm that Big Data and Artificial Intelligence actively shape consumer preferences in digital markets through multiple interconnected mechanisms. The combination of behavioral data analysis, predictive analytics, personalized recommendations, and automated consumer interactions creates a complex digital ecosystem in which algorithmic systems continuously influence consumer perceptions and purchasing decisions. Through repeated exposure to personalized content across various digital touchpoints, consumers gradually develop preferences that align with algorithmic predictions and recommendations. This process illustrates how consumer preferences in digital markets are increasingly co-constructed through interactions between human decision-making processes and algorithmic systems. The integration of Big Data and Artificial Intelligence therefore represents a transformative force in modern marketing practices, redefining the ways in which companies understand, predict, and influence consumer behavior in the evolving digital marketplace.

CONCLUSIONS

The findings of this study conclude that Big Data and Artificial Intelligence play a significant role in shaping consumer preferences within digital markets through the mechanisms of behavioral data analysis, predictive analytics, and algorithmic personalization. By collecting and processing large volumes of consumer behavioral data,

Big Data technologies enable companies to identify patterns of interest and purchasing intentions, while Artificial Intelligence transforms these insights into personalized recommendations, targeted advertisements, and automated consumer interactions across multiple digital touchpoints. These technologies create hyper-personalized consumption experiences that guide consumer attention toward specific products, reduce decision complexity, and influence purchasing behavior through repeated exposure to curated options. As a result, consumer preferences in digital markets are not only revealed through existing demand but are also actively constructed through continuous interactions with algorithmic systems embedded in digital platforms. Therefore, this study confirms that the integration of Big Data and Artificial Intelligence fundamentally reshapes consumer decision-making processes by enabling firms to predict, influence, and reinforce consumer preferences within contemporary data-driven marketing environments.

REFERENCE

- Anning-Dorson, T., Baba, F., Zulu, M., & Acheampong, G. (2025). Data-driven dynamic capabilities in emerging markets: A grounded theory approach to digital transformation in African retail banking. *International Journal of Information Management*, 84, 102914. <https://doi.org/10.1016/j.ijinfomgt.2025.102914>
- Babadoğan, B. (2024). Unveiling the power of AI-driven personalization: Transforming consumer behavior in the age of digital marketing. *Next Frontier for Life Sciences and AI*. <https://doi.org/10.62802/fj43xy18>
- Babatunde, S., Odejide, O., Edunjobi, T., & Ogundipe, D. (2024). The role of AI in marketing personalization: A theoretical exploration of consumer engagement strategies. *International Journal of Management & Entrepreneurship Research*. <https://doi.org/10.51594/ijmer.v6i3.964>
- Cui, W., & Mohib, M. (2025). Exploring the impact of AI on consumer behavior and digital marketing through the lens of social media. *Concurrency and Computation: Practice and Experience*, 37. <https://doi.org/10.1002/cpe.70284>
- Du, R., & Du, Q. (2025). The future of marketing: Harnessing digital transformation, AI, and big data for personalized strategies and consumer insights. *International Journal of Global Economics and Management*. <https://doi.org/10.62051/ijgem.v6n3.04>
- Gupta, R. (2025). Personalized marketing through AI: Exploring consumer preferences and purchase behaviour. *International Journal of Scientific Research in Engineering and Management*. <https://doi.org/10.55041/ijsrem44558>
- Hassan, Y., & Zeebaree, S. (2025). Big data cloud computing and AI-driven digital marketing in enterprise systems. *Engineering and Technology Journal*. <https://doi.org/10.47191/etj/v10i04.28>
- Hussain, H., Alabdullah, T., Ahmed, E., & Jamal, K. (2023). Implementing technology for competitive advantage in digital marketing. *International Journal of Scientific and Management Research*. <https://doi.org/10.37502/ijsmr.2023.6607>

- Ingriana, A., & Rolando, B. (2025). Revolutionizing e-commerce: Investigating the effectiveness of AI-driven personalization in influencing consumer purchasing behavior. *Jurnal Ilmiah Manajemen dan Kewirausahaan (JUMANAGE)*. <https://doi.org/10.33998/jumanage.2025.4.1.2040>
- Iqbal, F., Afiat, A., Shoily, M., Turzo, S., & Arafat, M. (2025). AI-driven personalization in e-commerce: Evaluating the transformative effects on consumer behavior. *International Journal of Science and Research Archive*. <https://doi.org/10.30574/ijrsra.2025.16.1.2035>
- Joseph, O., Akintola, A., Offiong, E., Olajuwon, O., Offia, U., & Faniyan, A. (2025). AI-enhanced consumer insights: Leveraging behavioural analytics for hyper-personalised marketing strategies. *Journal of Artificial Intelligence, Machine Learning and Data Science*. <https://doi.org/10.51219/jaimld/omotoso-oluwayomi-joseph/511>
- Khatri, M. (2021). How digital marketing along with artificial intelligence is transforming consumer behaviour. *International Journal for Research in Applied Science and Engineering Technology*. <https://doi.org/10.22214/ijraset.2021.36287>
- Na, I., Jae, Y., & Hwa, P. (2025). Personalized digital marketing strategies: A data-driven approach using marketing analytics. *Journal of Management and Informatics*. <https://doi.org/10.51903/jmi.v4i1.149>
- Pagala, I., Asir, M., Mere, K., Lestari, U., & Siddiqa, H. (2024). Consumer behavior in the age of AI: The role of personalized marketing and data analytics in shaping purchase decisions. *Dinasti International Journal of Education Management and Social Science*. <https://doi.org/10.38035/dijemss.v5i6.2947>
- Raji, M., Olodo, H., Oke, T., Addy, W., Ofodile, O., & Oyewole, A. (2024). E-commerce and consumer behavior: A review of AI-powered personalization and market trends. *GSC Advanced Research and Reviews*. <https://doi.org/10.30574/gscarr.2024.18.3.0090>
- Ramesh, K., & Murugan, R. (2025). AI-driven marketing and its influence on consumer preferences for durable goods. *International Journal of Scientific Research in Engineering and Management*. <https://doi.org/10.55041/ijrem52658>
- Sahu, J., & Anjana, D. (2025). Personalized marketing in the digital age: The role of AI in consumer behavior analytics. *European Economic Letters*. <https://doi.org/10.52783/eel.v15i3.3415>
- Samsukha, A., Trivedi, P., Baldi, V., Store, S., Naik, P., Chauhan, R., Maselena, A., & Raisa, K. (2025). Impact of artificial intelligence and digital technologies on consumer behavior and brand perception: A study of young consumers in Ahmedabad. *Greenation International Journal of Engineering Science*. <https://doi.org/10.38035/gijes.v1i4.339>

- Shingh, P. (2025). The relationship between AI-driven personalization and consumer behaviour in digital marketing. *International Journal of Scientific Research in Engineering and Management*. <https://doi.org/10.55041/ijrem50421>
- Sifat, A. (2025). The algorithmic consumer: A conceptual investigation of AI's influence on consumer preferences and decisions. *Asian Management and Business Review*. <https://doi.org/10.20885/ambr.vol5.iss2.art14>
- Stella, U., Nwabekee, U., Yetunde, O., Agu, E., & Ijomah, T. (2024). Digital transformation in marketing strategies: The role of data analytics and CRM tools. *International Journal of Frontline Research in Science and Technology*. <https://doi.org/10.56355/ijfrst.2024.3.2.0047>
- Suleman, D., Wianti, W., Sofyanty, D., Ariawan, J., & Setyaningrum, E. (2025). The effect of AI-driven personalized marketing on consumer purchase decisions: Evidence from the fashion industry. *Jurnal Ekonomi Bisnis Manajemen dan Akuntansi (JEBISMA)*. <https://doi.org/10.70197/jebisma.v2i3.96>
- Theodorakopoulos, L., & Theodoropoulou, A. (2024). Leveraging big data analytics for understanding consumer behavior in digital marketing: A systematic review. *Human Behavior and Emerging Technologies*. <https://doi.org/10.1155/2024/3641502>
- Verma, S., & Fatma, S. (2025). How personalization and AI are transforming digital marketing campaigns. *International Journal of Scientific Research in Engineering and Management*. <https://doi.org/10.55041/ijrem42751>
- Wang, Z. (2025). The influence of AI on consumer behavior: Shaping choices and preferences in the digital marketplace. *Systems and Soft Computing*. <https://doi.org/10.1016/j.sasc.2025.200397>