

Research Article

Artificial Intelligence in E-commerce: The Impact of Consumer Behavior on Purchasing Decisions

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Abstract. The development of *Artificial Intelligence* (AI) has made this technology a strategic component in *e-commerce management* through the transformation of digital marketing practices and consumer interactions. The application of AI enables companies to improve personalization, service efficiency, and the quality of consumer experiences through recommendation systems, chatbots, virtual agents, and AI-based content. This study aims to systematically examine the role of *Artificial Intelligence* in *e-commerce* and its impact on consumer behavior in the purchasing decision-making process. The research method used is a *literature review* with a qualitative descriptive approach to national and international journal articles published in the period 2019–2025. Selected articles are analyzed thematically to identify patterns of AI implementation, consumer behavioral responses, and their implications for purchasing decisions. The results of the study indicate that AI has a positive effect on consumer trust, satisfaction, and purchase intention by increasing information relevance, service speed, and marketing personalization. However, issues of data privacy, perceived authenticity, and limited empathy in AI-based interactions have the potential to affect consumer loyalty. Therefore, a hybrid approach that combines the sophistication of AI with human interaction is recommended to create a sustainable consumer experience in the *e-commerce ecosystem*.

Keywords: Artificial Intelligence; Consumer Behavior; Digital Marketing; E-Commerce; Purchasing Decisions.

1. BACKGROUND

Artificial Intelligence (AI) has experienced rapid development in recent years, transforming from a theoretical discipline into a broad technology with practical applications across a wide range of fields. *Artificial Intelligence* (AI) is defined as the use of computing machines to mimic inherent human capabilities (Rust, 2021). AI has emerged as a transformative force in marketing, offering a variety of tools and innovations to improve efficiency, create content, and enhance customer engagement (Kshetri, 2024). AI has been implemented to enhance user experience and service value (Millastre-Valencia et al., 2025) and tailor company offerings to individual customer needs and preferences.

Digital transformation has become a significant driver of change in marketing, particularly the use of *Artificial Intelligence* (AI) in *e-commerce*. AI enables companies to analyze consumer data in real-time and on a massive scale, enabling them to deliver a more personalized, relevant, and efficient shopping experience. The application of AI in *e-commerce* includes product recommendation systems, customer service chatbots, advertising personalization, and the use of *customer service tools* such as virtual agents and AI content. AI's contribution lies in personalization, which tailors products, services, and digital experiences to each consumer's unique preferences, behaviors, and context.

Several studies have shown that the use of AI plays a significant role in building consumer trust and engagement. Studies on AI-generated influencers revealed that artificial realism and empathy can increase consumers' cognitive and emotional trust, although this influence can weaken when consumers perceive a threat to their human identity (Minh & Nguyen, 2025). These findings confirm that AI acceptance is determined not only by functional aspects but also by consumers' psychological responses. On the other hand, the use of generative AI in digital marketing has elicited diverse consumer

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responses. Consumers tend to be more critical of visual content generated entirely by AI, particularly in the context of hedonic services and high-involvement decisions (Jord et al., 2025). Quantitative research on AI-based personalization also found that AI-driven *personalization* significantly increases consumer trust, satisfaction, and purchase intention, with satisfaction playing a key role as a mediator (Sipos, 2025). Therefore, understanding how AI can influence consumer behavior holistically is crucial for developing sustainable digital marketing strategies. Although the study of AI in marketing and *e-commerce* is growing, research that comprehensively synthesizes these findings, particularly in relation to consumer behavior and purchasing decisions, remains very limited. Therefore, this study was conducted to systematically examine previous research findings on the role of *Artificial Intelligence* in *e-commerce* and its impact on consumer behavior in purchasing decisions.

2. THEORETICAL STUDY

Artificial Intelligence in *e-commerce* is positioned as a technological factor influencing consumer behavior through increased personalization, service efficiency, and the quality of digital experiences. These changes in consumer behavior subsequently impact the purchasing decision-making process. Thus, consumer behavior acts as a bridging mechanism between AI implementation and purchasing decisions.

Artificial Intelligence in E-Commerce

The use of AI in *e-commerce* is increasingly emerging as a key strategy to improve digital marketing effectiveness through the implementation of personalization and automation of marketing processes. AI technology enables companies to analyze consumer data in real time, including search history, purchasing patterns, individual preferences, and digital interaction behavior, thereby providing relevant product recommendations, offers, and marketing content tailored to each consumer's needs. AI-driven personalization approaches *have* been shown to not only increase the relevance of marketing messages but also strengthen consumers' perceived value, build trust, and increase consumer satisfaction levels, ultimately positively impacting purchase intention and customer loyalty (Sipos, 2025).

In addition to personalization, the application of AI in *e-commerce* also includes the use of AI *influencers* and *virtual agents* as innovative digital marketing communication tools. The presence of AI *influencers* allows *brands* to deliver marketing messages consistently, in a controlled manner, and adaptively to audience characteristics, while *virtual agents* play a role in providing responsive, interactive, and 24/7 customer service. This two-way interaction not only increases the efficiency of marketing communications but also contributes to building long-term relationships between companies and consumers through more personalized and immersive digital experiences (Minh & Nguyen, 2025). Thus, the integration of AI in *e-commerce marketing strategies* plays a significant role in creating competitive advantage and improving the quality of company-consumer relationships.

Consumer Behavior in the Digital World

Consumer behavior in *e-commerce* is influenced by perceptions of convenience, information quality, trust, and the shopping experience. The use of AI in customer service, such as *chatbots*, can increase satisfaction through efficiency and speed of service. However, limited empathy and human touch can impact consumer loyalty (Ok, 2025). In line with these findings, AI *chatbots* are effective in handling structured and informational service tasks, and can increase consumers' perceptions of comfort and convenience (Lin et al., 2025). Consumer trust in *e-commerce platforms* also increases when AI is able to provide accurate and consistent recommendations and exhibit behavior that is perceived as responsive and reliable (Minh & Nguyen, 2025).

Artificial Intelligence and Purchasing Decisions

Consumer purchasing decisions are the result of a cognitive information evaluation process and emotional experiences formed during consumer interactions with *e-commerce platforms*. In a digital environment, consumers assess not only functional aspects such as price and product quality, but also trustworthiness, perceived authenticity, and the perceived shopping experience (Angel & Nistor, 2025). Consistent, relevant, and responsive interactions are important factors in shaping positive consumer attitudes that lead to purchasing decisions.

Artificial Intelligence (AI) -based content in marketing communications has been proven to increase the efficiency of message delivery through content personalization, speed of information distribution, and the ability to tailor messages to individual consumer preferences and behaviors. AI-based recommendation systems and personalized content can accelerate the alternative evaluation process and increase consumer purchasing interest by presenting relevant and contextual information (Sipos, 2025) ; (Rust, 2021) . Furthermore, AI also contributes to reducing consumer uncertainty by providing consistent and accurate information, thereby strengthening trust in *e-commerce platforms*. (Minh & Nguyen, 2025) . Furthermore, the literature shows that consumer responses to AI content are contextual and influenced by the balance between technological efficiency and emotional value. A hybrid approach that combines the sophistication of AI with creativity and human presence is considered capable of maintaining the perception of authenticity while increasing the effectiveness of marketing communications, thus positively impacting consumer purchasing decisions (Angel & Nistor, 2025) ; (Ok, 2025) ; (Sigala et al., 2026) .

3. RESEARCH METHODS

This research used a literature review method with a qualitative descriptive approach. Data were obtained from national and international journal articles discussing *Artificial Intelligence*, *e-commerce*, consumer behavior, and purchasing decisions. The primary data sources included Google Scholar, SINTA, and reputable international journals. Inclusion criteria included articles published between 2019 and 2025, available in full text, and relevant to the research focus. Ten articles meeting the criteria were analyzed thematically by grouping research findings into main themes: the application of AI in *e-commerce*, consumer behavior, and the impact of AI on purchasing decisions.

4. RESULTS AND DISCUSSION

Table 1. Research Results.

No	Author & Year	Research Focus	Method	Main Research Findings
1	Minh & Nguyen (2025)	AI Influencer & Consumer Trust	Quantitative (PLS-SEM, 265 respondents)	The visual and behavioral realism of AI influencers increases <i>perceived empathy</i> , which significantly shapes consumers' <i>cognitive</i> and <i>emotional trust</i> . However, the <i>perceived threat to human identity</i> weakens the influence of empathy on consumer trust (Minh & Nguyen, 2025).
2	Jord et al (2025)	Generative AI vs Real Images	Mixed methods	Consumers prefer real images over AI-generated images . The negative impact of AI images is stronger on hedonic services and high-involvement consumers, as AI is perceived as less authentic and credible (Jord et al., 2025).
3	Yanta (2025)	AI Personalization in E-Commerce	Quantitative (SEM, 473 respondents)	AI-powered personalization increases <i>trust</i> and <i>satisfaction</i> , with satisfaction being a key mediator of <i>purchase intent</i> . However, <i>privacy concerns</i> act as a barrier to AI's positive effects. (Yanta et al., 2025)
4	Ok (2025)	AI vs Human Customer Service	Comparative quantitative	AI-based services excel in speed and efficiency, but human services excel in <i>emotional intelligence</i> and loyalty building. The AI- human hybrid model yields the highest levels of satisfaction and loyalty. (Ok, 2025)
5	Gurunathan (2025)	Consumer Satisfaction with AI Marketing	Quantitative descriptive	AI improves satisfaction through responsiveness and personalization, but concerns about data privacy and the lack of a human touch continue to undermine consumer trust. (Gurunathan, 2025)

No	Author & Year	Research Focus	Method	Main Research Findings
6	Yang et al (2024)	Global Adoption of Generative AI	Cross-country quantitative	AI adoption is influenced by technological infrastructure, R&D investment, and organizational readiness. Misaligned government policies can hinder the use of AI in digital marketing and services (Yang et al., 2024).
7	Lin et al. (2025)	Chatbot & Service Augmentation	Mixed methods	Chatbots are effective for structured tasks, supporting employee performance through <i>informational</i> and <i>emotional support</i> . However, chatbots are ineffective for complex tasks, so AI should serve as an augmentation, not a replacement, for humans (Lin et al., 2025).
8	Angel & Nistor (2025)	AI & Customer Experience (Synthesis)	Integrative literature review	AI enhances the consumer experience through <i>personalization</i> , <i>warm responses</i> , and <i>parasocial interactions</i> . The effectiveness of AI depends on authenticity, transparency, and a balance between technology and the human touch. (Angel & Nistor, 2025)
9	Gupta & Rathore (2024)	Barriers to Generative AI Adoption	Mixed methods	Major barriers to AI adoption include <i>privacy</i> , <i>cost</i> , <i>over-reliance</i> , and limited human resources. Emotions such as <i>trust</i> and <i>anticipation</i> significantly influence the acceptance of AI by service users (Gupta & Rathore, 2024).
10	Singh et al. (2023)	Service Quality & Loyalty	Literature Review	Service quality and satisfaction are key determinants of loyalty. In the context of AI, digital service quality must maintain emotional value and consumer trust (Singh et al., 2023).

Based on the results of a review of relevant scientific articles, the application of AI in the context of *e-commerce* and digital marketing shows a significant influence on consumer behavior and purchasing decisions.

Application of Artificial Intelligence in E-Commerce and Digital Marketing

The literature review shows that *Artificial Intelligence* has been widely adopted in *e-commerce* and digital marketing practices, particularly through product recommendation systems, customer service chatbots, content personalization, and the use of non-human agents such as virtual *agents* and AI *influencers*. The application of AI aims to improve operational efficiency while providing a more personalized and relevant shopping experience for consumers.

confirm that AI-based personalization can improve the quality of interactions between consumers and digital platforms. *Personalization* enables companies to present offers tailored to individual consumer preferences, thereby increasing information relevance and product search efficiency. Furthermore, AI-based chatbots are widely used to handle consumer inquiries in *real time* and continuously, particularly for structured service tasks.

However, the study also showed that the effectiveness of AI implementation depends heavily on the context in which it is used. AI is considered more effective when it acts as an augmentation tool *rather than* a complete replacement for human interaction, particularly in complex service situations or situations requiring emotional empathy.

Consumer Behavioral Responses to the Implementation of Artificial Intelligence

From a consumer behavior perspective, most studies show that consumers respond positively to AI implementation, particularly in terms of convenience, speed of service, and personalized shopping experiences. AI implementation contributes to increased perceptions of efficiency and convenience, which in turn strengthens consumers' positive attitudes toward *e-commerce platforms*.

The study also revealed that AI plays a role in shaping consumer trust, both cognitively and emotionally. Factors such as artificial empathy, recommendation accuracy, and service consistency are important determinants in building this trust. However, several studies have highlighted consumer resistance to AI, particularly when the technology is perceived as threatening human identity or diminishing the authenticity of interactions.

Furthermore, concerns about data privacy and transparency in AI use remain key issues influencing consumer attitudes. Consumers tend to be more critical of AI use when they perceive their personal data is not being managed securely or when digital interactions lack a human touch.

The Impact of Artificial Intelligence on Consumer Purchasing Decisions

Literature review findings indicate that *Artificial Intelligence* generally has a positive impact on consumer purchasing decisions. AI plays a role in accelerating the decision-making process by providing relevant and personalized information, thereby reducing consumer uncertainty when shopping online. AI-based recommendation systems also encourage consumers to evaluate product alternatives more efficiently, ultimately increasing purchase intention.

However, the impact of AI on purchasing decisions is contextual. For products or services with a high level of emotional engagement, consumers tend to be more sensitive to issues of authenticity and credibility. In such contexts, content or services generated entirely by AI can decrease purchase intention if they lack sufficient human elements.

Overall, the study's findings suggest that the success of AI in influencing purchasing decisions is determined not only by technological sophistication, but also by a company's ability to balance digital efficiency with consumers' emotional and psychological needs. A hybrid approach combining AI and human interaction is considered the most effective strategy for driving purchasing decisions and building long-term relationships with consumers.

5. CONCLUSION AND SUGGESTIONS

Artificial Intelligence plays a strategic role in the *e-commerce ecosystem* by significantly influencing consumer behavior and the purchasing decision-making process. Utilizing AI enables companies to improve operational efficiency and deliver more accurate digital marketing personalization through real-time consumer data analysis, recommendation systems, and chatbot-based customer service. The application of this technology has been proven to accelerate information searches, increase the relevance of offers, and strengthen consumer trust and satisfaction in digital interactions.

However, the study's findings suggest that the success of AI implementation is determined not only by technological sophistication but also by how consumers perceive the ethical and emotional aspects of AI-based interactions. Challenges related to data privacy, transparency in algorithm use, perceived authenticity, and limited empathy in non-human interactions are important factors that can moderate the positive impact of AI on consumer behavior. When AI technology is perceived as diminishing the human value in marketing interactions, consumers tend to show resistance, which can negatively impact long-term loyalty.

Therefore, a hybrid approach that combines the sophistication of *Artificial Intelligence* with human involvement is recommended as a more sustainable strategy in *e-commerce management*. This approach allows companies to leverage the efficiency and scalability of AI, while maintaining the emotional touch and human empathy needed to build long-term relationships with consumers. With this balance, AI functions not only as a marketing automation tool but also as a strategic enabler in creating valuable, authentic, and sustainable consumer experiences.

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