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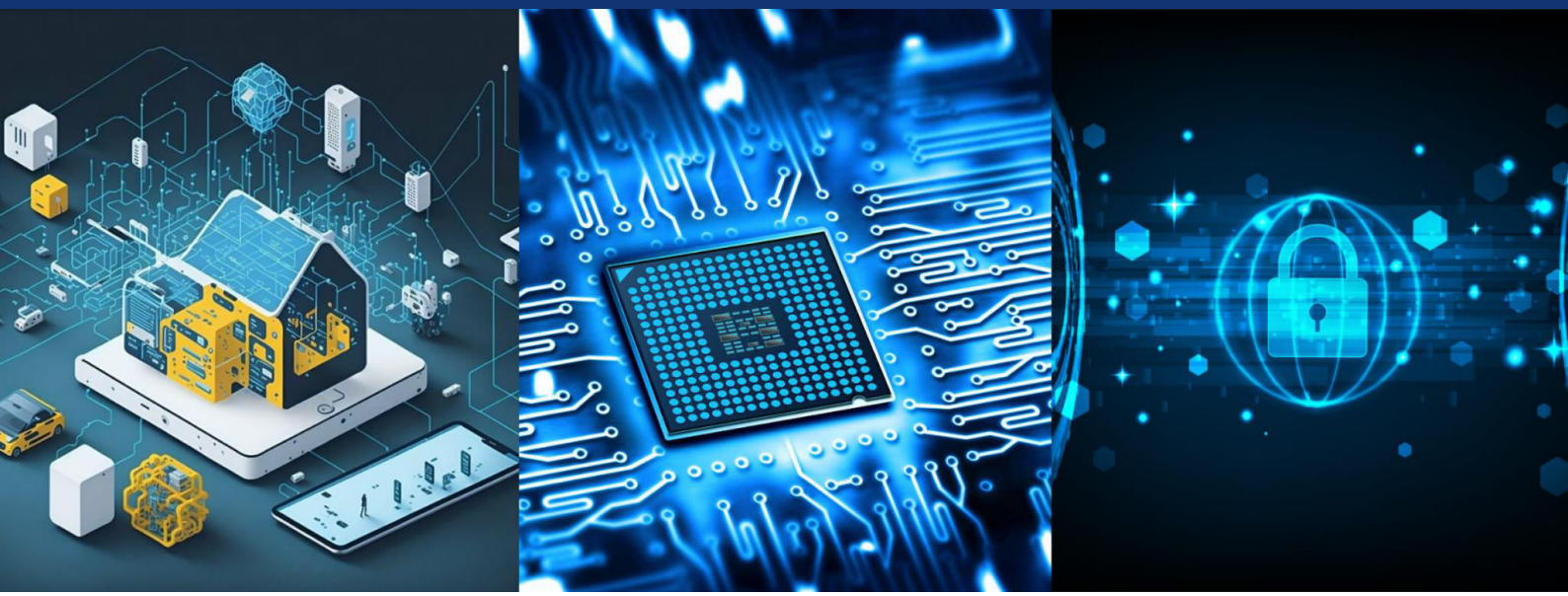

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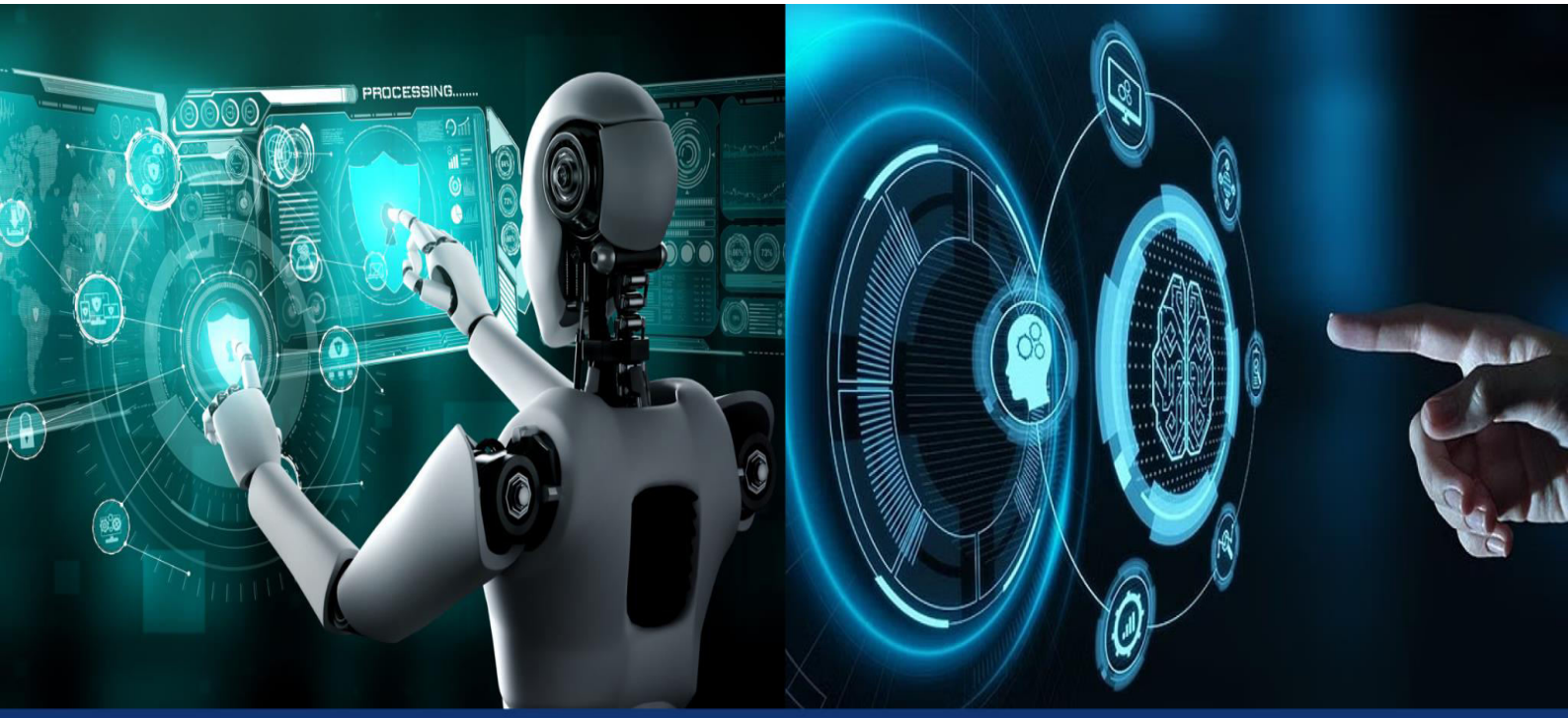

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AI-Based Personalization and Its Influence on Consumer Buying Behavior in E-Commerce Platforms

Mathad Smita Shankar, Dr. Kavyashree K

Research Scholar, Srinivas University, Mangalore, Karnataka, India

Research Professor, Srinivas University, Mangalore, Karnataka, India

ABSTRACT: Global e-commerce sales are expected to reach about $8 trillion by 2030 due to a fundamental paradigm shift brought about by artificial intelligence (International Journal of Multidisciplinary Research and Growth Evaluation 2021). By bridging the gap between digital and physical retail environments AI-driven technologies—such as sophisticated chatbots sophisticated recommendation systems predictive analytics and personalized shopping experiences—have radically changed how businesses engage with their customers. This study examines the multifaceted effects of AI on e-commerce customer satisfaction. Approximately 97. 4% of consumers are aware of AI-driven personalization and 56. 4% think these tailored experiences are very helpful. However nearly 51% of users voice serious concerns about the security of their personal information. This study attempts to determine whether contemporary consumers are truly content with AI-driven shopping experiences or whether a latent preference for conventional human-centric approaches still exists through a thorough examination of AI applications. The results offer important insights into how AI is changing the consumer landscape how well it improves user experience and how well it is meeting or surpassing changing consumer expectations in a digital economy following the pandemic.

KEYWORDS: Artificial Intelligence (AI), E-Commerce, Consumer Behavior, Recommendation Systems, Predictive Analytics

I. INTRODUCTION

Artificial intelligence is being integrated into every part of the customer journey which is causing modern e-commerce to change quickly and irreversibly. As the retail AI market is expected to be valued at more than $40 billion (International Journal of Multidisciplinary Research and Growth Evaluation 2021) businesses are relying more and more on automated technologies to handle the difficulties of international trade and customer demand. This study examines how AI significantly affects consumer buying intentions and behaviors highlighting how improved personalization automation and the greatest possible shopping experiences have revolutionized e-commerce. In todays market AI is a crucial strategic tool that influences how products are located evaluated and purchased (Hu and Lee 2026 Li et al. (2025).

By leveraging massive datasets AI allows platforms to anticipate customer needs with unprecedented accuracy moving from reactive service to proactive engagement. This shift depends on AI-powered recommendation engines that analyze enormous volumes of user data including specific aesthetic preferences historical browsing histories and purchase patterns using machine learning and deep learning algorithms (Li et al. in 2025. This substantial level of personalization helps to boost conversion rates and create long-lasting brand loyalty by ensuring that every consumer interaction is relevant and tailored to meet particular needs (Li et al. 2025. In line with research 97. These customized recommendations are known to 4% of customers and the majority of them (56). 4 percent) believe they are useful for navigating the plethora of online options (Nishamali et al. (2024). By streamlining the search process and reducing cognitive load these systems assist customers in finding products that precisely match their needs and interests increasing platform satisfaction overall (Nishamali et al. in 2024).

The use of AI-powered chatbots and virtual assistants has transformed customer service and engagement beyond the realm of product discovery. These sophisticated technologies which are driven by sentiment analysis and natural language processing offer prompt support by answering complicated questions and speeding up the purchasing process by being available around-the-clock (Rahevar and Darji 2024). AI-powered chatbots can handle thousands of concurrent

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interactions ensuring that no customer is left waiting in contrast to traditional customer service models that are constrained by human working hours and capacity (Rahevar & Darji 2024). Purchase decisions are directly impacted by this efficiency because modern digital shoppers place a high value on speed and dependability (Chau et al. in 2025. However the effectiveness of these tools frequently hinges on how well the AI communicates with the user since favorable human-AI interactions can greatly improve decision-making and increase consumer trust in the brand (Chau et al. 2025). Additionally through the use of augmented reality and complex remarketing strategies AI has transformed digital marketing and visual commerce.

Before committing to a purchase users can virtually preview products or try them on in their own physical surroundings thanks to augmented reality capabilities. This feature creates reality congruence and closes the sensory gap associated with online shopping (Hu & Lee 2026 Mittameedi et al. 2025). These visual technologies are a major force behind the expansion of the e-commerce industry with AR-integrated platforms gaining traction over more conventional approaches because they give customers more confidence (Pandey & Singh 2023 Zhuk & Yatskyi 2024). Due to customers improved comprehension of the products size fit and appearance this technological synergy not only increases conversion rates but also dramatically lowers return rates (Hu & Lee 2026). By providing the appropriate message at the ideal point in the purchasing cycle automated email campaigns and customized advertising further preserve consumer engagement (Zhuk & Yatskyi 2024).

The e-commerce sector still faces significant challenges with regard to data privacy and maintaining human interaction despite these amazing technological developments. The Personalization-Privacy Paradox continues to be a major obstacle although consumers appreciate AIs convenience more than 51% are concerned about how their personal data is collected and used (Soni 2024). This discomfort frequently results from a lack of transparency in the way AI algorithms handle data which if not handled ethically could erode trust (Sipos 2025 Soni 2024). Finding a careful balance between sophisticated automation and the warmth of human interaction is crucial for long-term customer satisfaction and loyalty (Sipos 2025). Businesses must prioritize consumer trust and data protection alongside technological innovation to ensure a sustainable and fulfilling shopping environment because AIs influence on e-commerce customer behavior will only grow as it develops (Raji et al. (2024) and Soni (2024).

Artificial Intelligence (AI) has completely changed how customers engage with online platforms drastically altering the e-commerce landscape. Online shopping is now more convenient and efficient thanks to technologies like chatbots automated systems and tailored recommendation engines. These AI-powered solutions allow companies to offer seamless shopping experiences personalized product recommendations and immediate customer support which influences customer behavior and raises satisfaction levels. The degree of consumer trust in AI systems is still unknown though despite these developments. Some users still prefer human interaction even though many value the speed and personalization provided by AI particularly when complex decision-making problem-solving or emotional understanding are involved. The question of whether AI can completely replace conventional human-centric e-commerce strategies is raised by this. Concerns about trust privacy and dependability may also cause some consumers to stick with traditional methods of making purchases. Thus in addition to investigating consumer trust and preference between AI-driven systems and human interaction this study attempts to investigate how AI affects online purchasing behavior. Businesses looking to successfully integrate AI technologies while preserving customer trust and satisfaction in the dynamic digital marketplace must comprehend this balance.

II. RELATED WORK

The research done by A. Dhondale T. Avinash Rdot. Dhiman Yu. H as well as Sdot. The impact of digitalization and artificial intelligence (AI) on e-commerce consumer purchasing behavior is examined by Harneet (2025). The study uses a conceptual framework based on the Stimulus–Organism–Response (S-O-R) model to explain how various stages of the consumer decision-making process are impacted by AI-driven technologies. Key AI tools like chatbots recommendation systems dynamic pricing algorithms and personalization strategies are identified as stimuli that cause consumers emotional and cognitive reactions. These reactions include elements like perceived value trust ease of use and digital fatigue which in turn influence behavioral outcomes like brand loyalty purchase intention and cart abandonment. The results show that personalization driven by AI greatly improves customer satisfaction engagement and overall user experience. Behavioral targeting and predictive analytics are highlighted as key factors in enhancing decision-making and expediting the buying process. The study does however also highlight some issues such as algorithmic bias privacy issues and consumer mistrust of AI-based judgments. Furthermore taking into account moderating variables like

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demographic traits digital literacy and cultural factors the study offers a conceptual framework that explains the relationship between technological factors and consumer responses. All things considered the study offers marketers and companies useful information for implementing moral and customer-focused AI strategies in e-commerce.

D. J. s study. H. and S. Harchekar. Thakkar (2025) investigates how artificial intelligence (AI) is changing user interaction and consumer behavior in e-commerce platforms. The study demonstrates how artificial intelligence (AI) tools like chatbots recommendation engines and machine learning help companies better understand consumer preferences and provide highly accurate responses. The study highlights how crucial predictive analytics is to providing individualized shopping experiences that boost customer satisfaction and have an impact on purchase decisions. Additionally the paper explores how AI-driven tools enhance customer engagement through the development of more dynamic and flexible digital environments. The relationship between customers and e-commerce platforms is strengthened by recommendation systems and chatbots which support personalized content delivery and real-time communication. But the report also highlights important issues such as worries about data privacy and the moral application of AI in consumer interactions. All things considered the study offers an outlook on how AI can transform conventional engagement models and build intelligent customer-focused e-commerce ecosystems.

The research conducted by J. Hwang (2025) investigates consumer behavior in the context of e-commerce emphasizing the critical elements that impact customer engagement and online purchase decisions. In order to provide a thorough understanding of digital consumer dynamics the study uses a mixed-method approach that combines surveys interviews and data analysis from e-commerce platforms. The results show that improving customer engagement and loyalty is largely dependent on elements like personalization high-quality content effective customer service and open company policies. The study also emphasizes the increasing significance of customer-generated content and AI-driven recommendations in fostering trust and enhancing user experience. Additionally it highlights how social media and influencers shape consumer perception and buying habits. According to the research companies should use an omni-channel strategy to meet changing customer expectations by ensuring consistency across online and offline platforms. All things considered the study offers insightful information about contemporary consumer behavior and emphasizes how crucial it is to use AI and digital tactics to build enduring client relationships in the cutthroat world of online shopping.

The research conducted by F. A. Iqbal. Afiat M. Shoily S. Turzo and M. Arafat (2025) examine how AI-driven personalization affects e-commerce consumer behavior. The study demonstrates how platforms can provide customized product recommendations thanks to sophisticated AI algorithms which greatly improve customer engagement satisfaction and loyalty. AI systems generate individualized shopping experiences that impact consumer decision-making and boost purchase intention by evaluating user preferences and behavioral data. Additionally the study highlights the importance of personalization as a tactic for preserving a competitive edge in the online market. However the study also discusses significant difficulties and moral dilemmas surrounding the application of AI especially those pertaining to algorithmic transparency and data privacy. Consumer acceptance and trust in AI technologies may be impacted by these worries. All things considered the study offers insightful information about how AI-driven personalization is transforming consumer preferences and emphasizes the necessity of ethical and open AI practices in e-commerce.

The research conducted by K. I am Allahverdiyev. Albăstroiu Năstase (2025) investigates how artificial intelligence (AI) affects e-commerce consumer behavior with an emphasis on decision-making and customer satisfaction. A structured survey of 355 Romanian online shoppers was used in the studys quantitative methodology. The results show that by offering customized interactions and real-time support AI technologies like chatbots dynamic pricing and personalized recommendations greatly improve the online shopping experience. The study also emphasizes how AI-driven tools enhance customer satisfaction and engagement which eventually affects purchase decisions. Two important elements that influence consumer preferences and purchasing behavior are personalized marketing and product recommendations. Additionally the study highlights that younger customers are more open to AI-based features and believe they are crucial to their online buying experience. All things considered the study offers insightful information about how AI integration improves the connection between technology and consumer behavior highlighting its increasing significance in the current e-commerce environment.

The study by D. Silva (2025) explores how consumer behavior has changed in the context of e-commerce emphasizing how digital transformation has changed how customers and businesses interact. The study focuses on important elements that have a big impact on online shopping habits like accessibility personalization and convenience. The study uses case

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studies and quantitative data to show how digital marketing tactics such as tailored recommendations and targeted ads are essential for increasing consumer engagement and building brand loyalty. Additionally the study investigates how new technologies like big data and artificial intelligence (AI) can enhance customer experiences by better understanding consumer preferences. It also covers significant issues that affect international online trade such as cross-border e-commerce cultural adjustment and regulatory obstacles. Furthermore the study highlights the increasing significance of sustainability in influencing consumer decisions. The study's overall conclusion is that in order to succeed in the cutthroat digital market business strategies must be in line with changing customer demands and make use of cutting-edge technology.

The research by Y. J. Wang. Shi T. The T. Whoa J. Yun and Y. Yang (2025) offers a thorough analysis of how technological advancements have affected e-commerce consumer behavior. Websites social media live streaming augmented and virtual reality (AR/VR) and artificial intelligence (AI) are just a few of the technologies for which the study uses the TCCM framework and the SPAR-4-SLR methodology to methodically analyze existing literature. The results show that after 2017 research interest in this field increased significantly with a focus on websites and social media platforms. In order to better comprehend consumer behavior in digital environments the study also identifies important theoretical frameworks and emphasizes the necessity of integrating them. Additionally it maps key elements that affect consumer decision-making including antecedents mediators moderators and outcomes. The study highlights a significant gap in research on cutting-edge AI applications and emerging technologies like AR/VR indicating the need for more investigation. The study also highlights the value of long-term research and sophisticated analytical methods to obtain more profound understanding. All things considered this study advances theoretical and practical knowledge by suggesting future lines of inquiry and encouraging the growth of a more dynamic and customer-focused e-commerce ecosystem.

The investigation by Gupta C. Kumar Kumar. and A. Khurana. (2024) looks at how artificial intelligence (AI) is changing the e-commerce industry with a special emphasis on marketing customer service and personalization. In order to comprehend how AI technologies are changing the industry the research takes a qualitative approach and examines prior research case studies and academic publications. The results demonstrate how AI tools like chatbots virtual assistants and Natural Language Processing (NLP) greatly improve customer interactions by offering quick effective round-the-clock assistance. Customer satisfaction rises as a result of these technologies improved query resolution and personalized user experiences. The study also highlights how AI integration which makes data-driven decision-making and targeted advertising possible is radically altering conventional marketing strategies. One of the most important elements in increasing customer engagement and boosting sales is personalization. The study does however also recognize some difficulties and possible negative effects of implementing AI pointing out the existence of a dark side such as privacy issues and an excessive dependence on automation. All things considered the study advances knowledge of technological developments in e-commerce and emphasizes how crucial it is for companies to invest in AI technologies in order to fully utilize their potential. Additionally it offers a model to help stakeholders apply AI solutions successfully while resolving related issues.

The research of Raji M. A. H. Olodo. A B. Oke T. T. Addy and W. (A). O. Ofodile. A C. Oyewole A. and. . . T. (2024) offers a thorough analysis of how artificial intelligence (AI) influences consumer behavior in the context of online shopping. The study highlights how crucial AI-powered personalization is to comprehending and adjusting to shifting customer preferences. AI improves customer engagement satisfaction and loyalty by enabling e-commerce platforms to provide highly customized product recommendations content and user experiences through the use of sophisticated algorithms and sizable datasets. The review also identifies important AI-driven market trends such as the use of chatbots and virtual assistants for smooth customer interaction and predictive analytics for effective inventory management and demand forecasting. In order to forecast customer preferences and expedite the purchasing process machine learning techniques are found to be essential. However the study also discusses significant obstacles and moral dilemmas related to the application of AI including algorithmic bias data privacy concerns and the possibility of excessive personalization causing discomfort for users. Overall the study highlights the close connection between consumer behavior and AI-driven personalization and emphasizes the necessity for companies to responsibly implement AI strategies in order to stay competitive and satisfy changing consumer expectations.

The impact of artificial intelligence (AI) marketing on e-commerce sales is examined in a study by M. Madanchian (2024) with an emphasis on how AI-driven tactics affect important performance metrics like customer acquisition and conversion rates. By examining fifty academic papers from the Scopus database the study uses a critical review methodology to

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provide a thorough grasp of AI applications in online retail. The results show that AI tools such as chatbots personalization engines and predictive analytics significantly improve e-commerce performance by boosting sales efficiency optimizing marketing strategies and improving customer engagement. The study also emphasizes how AI-driven personalization and automated customer interactions help companies draw in new clients and turn prospective buyers into actual buyers. These technologies improve business outcomes by enabling data-driven decision-making and targeted marketing. By making suggestions for how businesses can successfully incorporate AI into their marketing plans the paper also makes theoretical and practical contributions. It also makes recommendations for future lines of inquiry to delve deeper into the changing role of AI in e-commerce. Overall the study highlights how crucial AI marketing is becoming to the success of e-commerce.

III. HYPOTHESIS DEVELOPMENT

Impact of AI on E-commerce Growth as AI adoption of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), and also Effectiveness of AI-Driven Solutions:
H1: Virtual Assistance positively influences consumer Buying Intention.
H2: Personalization and recommendation have a significant positive impact on consumer buying intention.
H3: AI-powered search and navigation significantly affect consumer buying intention.
H4: AI-driven price efficiency positively influences consumer buying intention.
Ethical Concern:
H5: AI-based brand awareness significantly influences consumer buying intention.
AI Influence on Consumer Behaviour:
H6: Attitude positively influences consumer buying intention.
Future Opportunities and Trends
H7: Actual System Use positively influences consumer buying intention

The current study develops a series of hypotheses to investigate how Artificial Intelligence (AI) affects consumers intentions to make purchases in an e-commerce setting. The theories are based on important AI-driven variables like perceived usefulness (PU) perceived ease of use (PEOU) and the efficacy of AI-enabled solutions. Consumer decisions are thought to be significantly influenced by AI features such as virtual assistance personalization recommendation systems search efficiency and price optimization. In particular personalized recommendations and effective search and navigation systems are likely to improve the shopping experience and raise the likelihood of a purchase while virtual assistants are expected to improve user interaction and positively affect buying intention. AI-driven pricing strategies are also thought to increase the consumer appeal of products. AI-based brand awareness is also thought to affect consumer trust and decision-making from an ethical standpoint. Additionally it is anticipated that consumer attitudes regarding AI technologies will positively influence their purchasing decisions. Lastly it is believed that the real application of AI systems will increase consumer engagement and purchase intention. Together these theories seek to assess how AI affects consumer behavior in e-commerce overall.

IV. STUDY OF THE VARIABLES

In this study, three main types of variables are considered, namely independent variable, dependent variable, and mediating variable, to understand the relationship between AI and consumer behavior in e-commerce.

A. Dependent Variable: Consumer Behavior

Consumer behavior which reflects the result impacted by other study variables is the dependent variable in this study. Purchase intention decision-making process customer satisfaction and online shopping habits are some of its components. The degree of AI integration and the online shopping experience are anticipated to influence consumer behavior. For example a customers decision to buy a product can be positively impacted by features like accurate search results quick customer service and personalized recommendations. Thus the main metric used to assess AIs efficacy in e-commerce is consumer behavior.

B. Independent Variable: Online Shopping

The primary influencing factor in this study is online shopping which is the independent variable. It stands for the online space where customers engage with online retailers. This covers elements like product availability pricing policies website usability and the general shopping experience. Consumer behavior can be directly impacted by modifications to

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online shopping features such as better product display easier navigation and increased accessibility. The study looks at how changes in the online shopping environment affect user satisfaction and purchase decisions.

C. Mediating Variable: Artificial Intelligence (AI)

Artificial Intelligence (AI) is the mediating variable in this study and is essential to understanding the connection between consumer behavior and online shopping. Through the use of technologies like chatbots recommendation systems predictive analytics and personalized marketing artificial intelligence (AI) serves as a middleman to improve the online shopping experience. By changing how customers engage with e-commerce platforms it closes the gap between the independent and dependent variables. For instance AI-powered chatbots enhance customer support and engagement while AI-driven personalization can impact customer preferences and boost the likelihood of a purchase. AI therefore contributes to the explanation of how and why consumer behavior is impacted by online shopping.

V. ROLE OF AI IN E-COMMERCE

The e-commerce industry is undergoing a significant transformation thanks to artificial intelligence (AI) which improves customer engagement efficiency and personalization. It makes it possible for online platforms to evaluate massive amounts of consumer data and provide customized shopping experiences. AI aids companies in automating a number of tasks including pricing strategies inventory management product recommendations and customer service. AI is a major force behind the expansion of contemporary e-commerce since it increases customer satisfaction and loyalty while also improving operational performance by lowering manual labor and increasing accuracy.

A. Recommendation Systems

One of the most popular AI technologies in e-commerce is recommendation systems. In order to recommend pertinent products to clients these systems examine user information such as browsing history past purchases and preferences. These systems reduce search time and enhance decision-making by offering users tailored product recommendations that help them find products that align with their interests. In addition to improving user satisfaction this boosts sales and client retention for companies.

B. Chatbots and Virtual Assistants

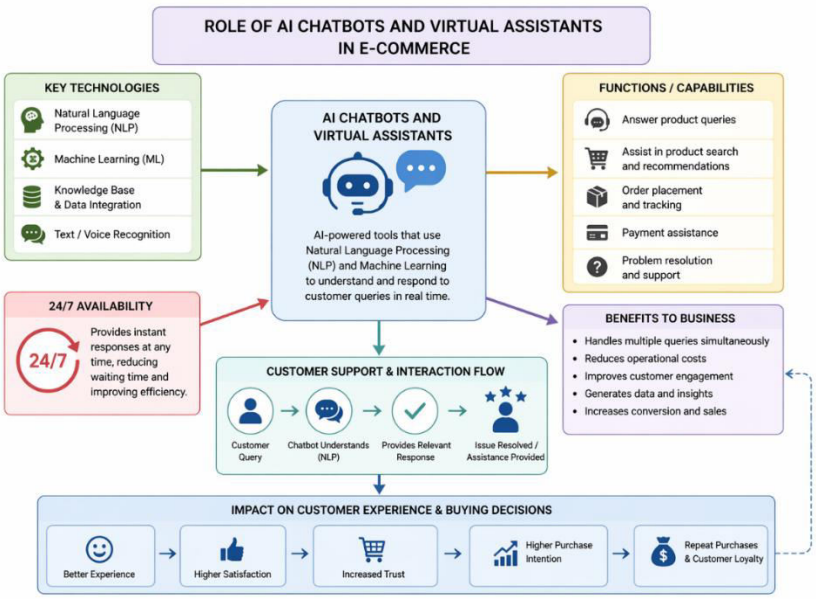

Figure1: simple architecture on AI Chatbots and Virtual Assistants

As shown in figure 1 above chatbots and virtual assistants are sophisticated AI-powered tools that significantly improve customer service on e-commerce platforms. These systems use technologies like machine learning and natural language

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processing (NLP) to mimic human-like interactions. Chatbots can successfully help customers with a variety of tasks such as product inquiries order placement payment assistance and delivery tracking by comprehending user queries and providing real-time responses. In contrast to traditional customer service which is constrained by human availability and working hours chatbots are available around-the-clock guaranteeing that clients will always receive prompt assistance. This constant availability significantly lowers wait times and boosts the services overall effectiveness.

Furthermore virtual assistants provide individualized support based on user preferences and previous interactions going beyond simple query processing. They can streamline decision-making by making product recommendations offering customized advice and assisting customers with the buying process. Because these systems can manage several customer interactions at once they are very scalable and economical for companies. Additionally by ensuring regular communication and offering prompt problem-solving chatbots help to increase customer engagement. Increased customer satisfaction and platform trust result from this. However the accuracy and design of chatbots determine their efficacy. The user experience may be adversely affected by poorly programmed systems that result in misconceptions or irrelevant responses. Despite these difficulties sophisticated chatbots and virtual assistants have a big impact on customer behavior by improving the efficiency convenience and interactivity of the shopping process which eventually raises the possibility of purchases.

C. AI-Based Search Systems

Customers can find products on e-commerce platforms more easily thanks to AI-based search systems. These systems employ sophisticated features that enable users to find desired products quickly including voice search image search and smart filtering. AI-based search systems improve user experience lessen frustration and raise the likelihood of a purchase by delivering precise and pertinent search results.

VI. AI AND CONSUMER SHOPPING BEHAVIOR

A. Product Discovery

The process of finding products on e-commerce platforms has been greatly enhanced by artificial intelligence (AI). AI evaluates user data including browsing history past purchases and preferences using sophisticated algorithms and recommendation systems to make product recommendations. Customers dont have to spend a lot of time looking thanks to this tailored approach which makes it simple to find products that suit their interests. Features like customers also bought and recommended for you improve product visibility and present users with new choices. AI thus makes it easier to find products which improves the effectiveness and appeal of the shopping process.

B. Decision-Making Process

By offering precise and pertinent information artificial intelligence (AI) significantly influences how consumers make decisions. It helps consumers by providing tailored suggestions product comparisons reviews and ratings that enable users to weigh their options before making a purchase. By making product recommendations based on user behavior patterns predictive analytics helps with decision-making even more. AI boosts consumer confidence by lowering uncertainty and offering lucid insights resulting in quicker and better-informed purchasing decisions.

C. Customer Engagement

AI makes it possible for companies and customers to communicate in an interactive and customized way which increases customer engagement. Chatbots virtual assistants and targeted ads are examples of tools that support ongoing user interaction. Customers are kept actively involved with the platform by these technologies which offer prompt notifications tailored offers and immediate responses. AI also aids companies in comprehending consumer behavior and preferences enabling them to provide personalized experiences. Customer relationships are strengthened and brand loyalty rises as a result of this increased engagement.

D. Reduction in Search Time and Effort

The reduction of consumer search time and effort is one of the main advantages of AI in e-commerce. Even with little input AI-powered search systems such as voice search and image recognition enable users to locate desired products quickly. By presenting the most pertinent results intelligent filtering and sorting options further optimize the search process. AI improves user convenience and the overall shopping experience by reducing the time and effort required to find products which eventually raises the possibility of a purchase.

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VII. CONCLUSION

This study highlights the significant role of Artificial Intelligence (AI) in driving the growth and transformation of the e-commerce industry. The findings indicate that AI has become a core component in modern digital commerce by enabling automation, improving operational efficiency, and delivering highly personalized shopping experiences. Technologies such as recommendation systems, chatbots, predictive analytics, and AI-based search have reshaped how businesses interact with customers, making the online shopping process more convenient, efficient, and user-centric. Furthermore, the study confirms that AI has a strong influence on consumer shopping behavior and purchasing decisions. Personalized recommendations, quick customer support, and intelligent search capabilities reduce the time and effort required for decision-making, thereby increasing customer satisfaction and purchase intention. AI-driven features also enhance customer engagement and build stronger relationships between consumers and e-commerce platforms. However, the study also identifies the presence of the personalization–privacy paradox, where consumers appreciate customized experiences but remain concerned about data privacy and security. In conclusion, while AI significantly improves the efficiency and effectiveness of e-commerce platforms, achieving a balance between personalization and privacy is essential for long-term customer trust and satisfaction. Businesses must focus on transparent data practices and ethical AI implementation to fully leverage its potential. Overall, AI continues to shape the future of e-commerce by influencing both industry growth and consumer behavior in a dynamic and impactful manner.

REFERENCES

[1]. Hu, J., & Lee, E. T. (2026). The impact of integrated AI and AR in E-Commerce: The roles of personalization, immersion, and trust in influencing continued use. Journal of Theoretical and Applied Electronic Commerce Research, 21(1), 33. https://doi.org/10.3390/jtaer21010033.

[2]. Avinash, A., Dhondale, R., Dhiman, T., S, Y., & Harneet, H. (2025). The Influence of Digitalisation and Artificial Intelligence on Consumer Buying Behavior in E-Commerce. Open Access Journal of Multidisciplinary Research. https://doi.org/10.47760/oajmr.2025.v01i04.005.

[3]. D. J. S. Harchekar and H. Thakkar, "AI-Driven Insights in E-Commerce: Rethinking Consumer Behavior and User Engagement," INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT, vol. 09, no. 07, pp. 1–9, Jul. 2025, doi: 10.55041/ijsrem51419.

[4]. J. Hwang, "E-commerce and Consumer Behavior," World Journal of Advanced Research and Reviews, vol. 25, no. 1, pp. 1132–1143, Jan. 2025, doi: 10.30574/wjarr.2025.25.1.0194.

[5]. F. Iqbal, A. Afiat, M. Shoily, S. Turzo, and M. Arafat, "AI-driven personalization in e-commerce: evaluating the transformative effects on consumer behavior," International Journal of Science and Research Archive, vol. 16, no. 1, pp. 264–273, Jul. 2025, doi: 10.30574/ijsra.2025.16.1.2035.

[6].D. Silva, "E-Commerce and the Evolution of Consumer Behavior," igi global, 2025, pp. 133–154. doi: 10.4018/979-8-3373-0149-5.ch008.

[7]. Y. Wang, J. Shi, T. T. Ow, J. Yun, and Y. Yang, "The Impact of Technological Innovations on Consumer Behavior in E-Commerce," Journal of Organizational and End User Computing, vol. 37, no. 1, pp. 1–27, Apr. 2025, doi: 10.4018/joeuc.372896.

[8].Li, Y., Zheng, R., Hao, Y., He, J., & Zhang, X. (2025). The Impact of Artificial intelligence on ecommerce Consumer Behavior: A Comparative analysis. In Advances in economics, business and management research/Advances in Economics, Business and Management Research (pp. 60–71). https://doi.org/10.2991/978-94-6463-835-6_8.

[9]. Chau, H. K. L., Ngo, T. T. A., Bui, C. T., & Tran, N. P. N. (2025). Human-AI interaction in E-Commerce: The impact of AI-powered customer service on user experience and decision-making. Computers in Human Behavior Reports, 19, 100725. https://doi.org/10.1016/j.chbr.2025.100725.

[10].Mittameedi, S. K., Dogra, V., & Sayal, A. (2025). Customer Experience in E-Commerce: A Systematic review of metrics, models, and the role of AI. IEEE Access, 13, 154422–154437. https://doi.org/10.1109/access.2025.3600729.

[11]. Sipos, D. (2025). The effects of AI-Powered personalization on consumer trust, satisfaction, and purchase intent. European Journal of Applied Science Engineering and Technology, 3(2), 14–24. https://doi.org/10.59324/ejaset.2025.3(2).02.

[12]. Vishvesh Soni, "AI and the Personalization-Privacy Paradox: Balancing Customized Marketing with Consumer Data Protection," International Journal of Computer Trends and Technology (IJCTT), vol. 72, no. 9, pp. 24-31, 2024. Crossref, https://doi.org/10.14445/22312803/ IJCTT-V72I9P105

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[13]. Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). E-commerce and consumer behavior: A review of AI-powered personalization and market trends. GSC Advanced Research and Reviews, 18(3), 066–077. https://doi.org/10.30574/gscarr.2024.18.3.0090.

[14]. Gupta, C., Kumar, V., & Khurana, A. (2024). Artificial Intelligence Application in E-Commerce: Transforming Customer Service, Personalization and Marketing. 2024 11th International Conference on Computing for Sustainable Global Development (INDIACom), 10-16. https://doi.org/10.23919/indiacom61295.2024.10498474.

[15]. Madanchian, M. (2024). The Impact of Artificial Intelligence Marketing on E-Commerce Sales. Syst., 12, 429. https://doi.org/10.3390/systems12100429.

[16].M. K. C. P. Nishamali, G. S. Pathirage, S. Herath, P. Herath and J. Wickramarathne, "A Systematic Study of Machine Learning Applications in E-Commerce UX Personalization," 2024 4th International Conference on Mobile Networks and Wireless Communications (ICMNWC), Tumkuru, India, 2024, pp. 1-6, doi: 10.1109/ICMNWC63764.2024.10872138.

[17]. Rahevar, M., & Darji, S. (2024). THE ADOPTION OF AI-DRIVEN CHATBOTS INTO a RECOMMENDATION FOR E-COMMERCE SYSTEMS TO TARGETED CUSTOMER IN THE SELECTION OF PRODUCT. International Journal of Management, Economics and Commerce., 1(2), 128–137. https://doi.org/10.62737/m1vpdq75.

[18]. Zhuk, A., & Yatskyi, O. (2024). The use of artificial intelligence and machine learning in e-commerce marketing. Technology Audit and Production Reserves, 3(4(77)), 33–38. https://doi.org/10.15587/2706-5448.2024.305280.

[19]. Pandey, K. S., & Singh, N. (2023). Trends in E-Commerce: Post COVID-19 pandemic. International Journal for Research in Applied Science and Engineering Technology, 11(3), 1414–1418. https://doi.org/10.22214/ijraset.2023.49686.

[20]. International Journal of Multidisciplinary Research and Growth Evaluation. (2021). International Journal of Multidisciplinary Research and Growth Evaluation. https://doi.org/10.54660/anfo.

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