GMBR: Greenation Management and Business Review
E-ISSN: 3089-1116
GREENATION PUBLISHER
+62 812-1046-7572 https://greenpub.org/GMBR greenation.info@gmail.com
DOI: https://doi.org/10.38035/gmbr.v2i1

The Influence of Artificial Intelligence Utilization and Digital Personalization on Purchase Decisions through Consumer Trust as a Mediating Variable

Andri Catur Trissetianto[1], Eidelweijs AP[2], Hapzi Ali[3], Dedy Tri Cahyono[4], Jaja Miharja[5]
[1]Institut Teknologi dan Bisnis Dewantara, Bogor, Indonesia, andricatur1991@gmail.com
[2]Institut Teknologi dan Bisnis Dewantara, Bogor, Indonesia, eidel.adri@gmail.com
[3]Universitas Bhayangkara Jakarta Raya, Jakarta, Indonesia, hapzi@dsn.ubharajaya.ac.id
[4]Institut Teknologi dan Bisnis Dewantara, Bogor, Indonesia, dedy.tricahyono@yahoo.com
[5]Institut Teknologi dan Bisnis Dewantara, Bogor, Indonesia, jaja.miharjaa@gmail.com

Corresponding Author: andricatur1991@gmail.com[1]

Abstract: This study aims to analyze the influence of artificial intelligence utilization and digital personalization on purchase decisions through consumer trust as a mediating variable. Rapid digital transformation has encouraged e-commerce platforms to implement artificial intelligence-based systems to improve customer experience through product recommendations, personalized services, and predictive interactions. However, the effectiveness of these digital strategies in encouraging purchase decisions depends largely on consumer trust in digital systems. This research uses a quantitative approach with a survey method involving marketplace users who actively conduct online transactions. Data were collected through structured questionnaires distributed to respondents who have experience using digital marketplace platforms. The data analysis technique applies Partial Least Squares Structural Equation Modeling using SmartPLS. The results indicate that artificial intelligence utilization positively influences consumer trust, digital personalization positively affects consumer trust, and consumer trust significantly affects purchase decisions. Furthermore, consumer trust mediates the relationship between artificial intelligence utilization and digital personalization toward purchase decisions. These findings indicate that trust remains a strategic factor in strengthening digital business competitiveness in the current marketplace ecosystem.

Keyword: Artificial Intelligence, Digital Personalization, Consumer Trust, Purchase Decision, Digital Marketplace.

INTRODUCTION

The rapid growth of digital business has significantly transformed consumer purchasing behavior in recent years. The development of marketplace platforms has encouraged companies to integrate advanced digital technologies to improve service quality and

strengthen customer engagement. Artificial intelligence has become one of the most widely adopted technologies in digital commerce because it enables platforms to analyze user behavior, predict consumer preferences, and generate automated recommendations that improve transaction efficiency (Dwivedi et al., 2023).

The rapid development of digital commerce has accelerated the adoption of artificial intelligence in online marketplace systems. Artificial intelligence is increasingly integrated into recommendation engines, chatbot interactions, predictive search systems, and automated customer services to improve consumer experience and transaction efficiency (Dwivedi et al., 2023). Recent market reports indicate that AI adoption in e-commerce continues to grow rapidly because digital businesses seek more adaptive and personalized interactions with consumers. The global AI-enabled e-commerce market is projected to expand significantly as digital platforms prioritize intelligent recommendation systems and customer data analytics

A recent consumer trend report shows that the main online shopping experiences improved by artificial intelligence include price comparison, product recommendations, personalized assistance, and review interpretation. These developments demonstrate that AI-based systems increasingly influence how consumers search, evaluate, and decide to purchase products in digital environments

Figure 1. Main Areas of Online Shopping Improved by Artificial Intelligence
Source: Adapted from Statista and AI in E-commerce Market Reports, 2025

Digital personalization has become an important strategic instrument because consumers increasingly expect platforms to provide content aligned with their preferences. Personalized recommendations, dynamic promotions, and adaptive interfaces help strengthen engagement and improve perceived convenience (Verma et al., 2023). However, although personalization increases relevance, consumers still evaluate whether digital recommendations are trustworthy before making final purchase decisions.

Consumer trust therefore plays an important mediating role in digital transactions. Trust emerges when consumers perceive that digital systems are secure, reliable, and transparent in handling personal information. Without trust, even highly sophisticated artificial intelligence systems may fail to convert browsing behavior into actual purchases (Chatterjee et al., 2022).

Artificial intelligence in digital marketplaces is commonly applied through recommendation systems, chatbot services, predictive analytics, and intelligent search engines. These technologies help consumers identify products more efficiently and receive relevant offers based on previous browsing and purchasing patterns. According to Huang and

Rust (2022), artificial intelligence improves service productivity and creates more adaptive customer experiences through automated digital interaction.

Along with artificial intelligence, digital personalization has emerged as an important strategy for enhancing customer engagement. Personalization refers to the ability of digital platforms to present content, promotions, and product recommendations tailored to individual preferences. Consumers increasingly expect digital services that are relevant to their personal needs, and this expectation influences their perception of platform quality (Bleier et al., 2021).

Digital personalization also contributes to stronger emotional relationships between consumers and digital platforms. Personalized communication increases user attention and encourages repeated interactions, which ultimately influence purchase intention (Verma et al., 2023). However, the effectiveness of personalization depends on how consumers perceive the credibility and transparency of digital systems.

Digital personalization has become an important strategic instrument because consumers increasingly expect digital platforms to provide recommendations, promotions, and content aligned with their personal preferences. Personalized digital interaction allows marketplace systems to display products based on browsing history, previous transactions, and behavioral prediction models. This strategy improves relevance and convenience, which may strengthen consumer engagement and encourage purchase decisions (Verma et al., 2023). However, the effectiveness of personalization does not only depend on technological sophistication, but also on whether consumers perceive the digital system as trustworthy and reliable.

Figure 2. Consumer Trust in Digital Companies and Technology-Based Services
Source: Adapted from Statista, based on Edelman Trust Barometer 2024

Figure 2 indicates that consumer trust remains a decisive factor in digital interaction and online transactions. Trust determines whether consumers are willing to rely on digital systems when receiving automated recommendations, sharing personal data, or completing payment processes. In digital commerce, trust becomes increasingly important because artificial intelligence operates by collecting and processing user information continuously. Recent reports show that digital trust is strongly influenced by perceived security, transparency, and consistency of service quality, especially when consumers interact with intelligent systems in online marketplaces

Consumer trust remains a critical factor in digital transactions because online purchasing always involves uncertainty related to data privacy, payment security, and service reliability. According to Chatterjee et al. (2022), trust is an essential determinant that influences whether consumers accept artificial intelligence recommendations and proceed to purchase decisions.

In digital business environments, trust develops when consumers believe that platform systems are reliable, secure, and able to protect their personal information. If trust is low, even advanced artificial intelligence and personalized services may fail to generate actual purchases (Ameen et al., 2023).

In the Indonesian digital market, the role of artificial intelligence has become increasingly strategic as marketplace competition intensifies. Digital platforms are no longer relying solely on transactional efficiency, but also on intelligent systems capable of analyzing customer behavior, delivering relevant product recommendations, and strengthening personalized digital interaction. This trend indicates that artificial intelligence is becoming a central driver of digital economic growth in Indonesia.

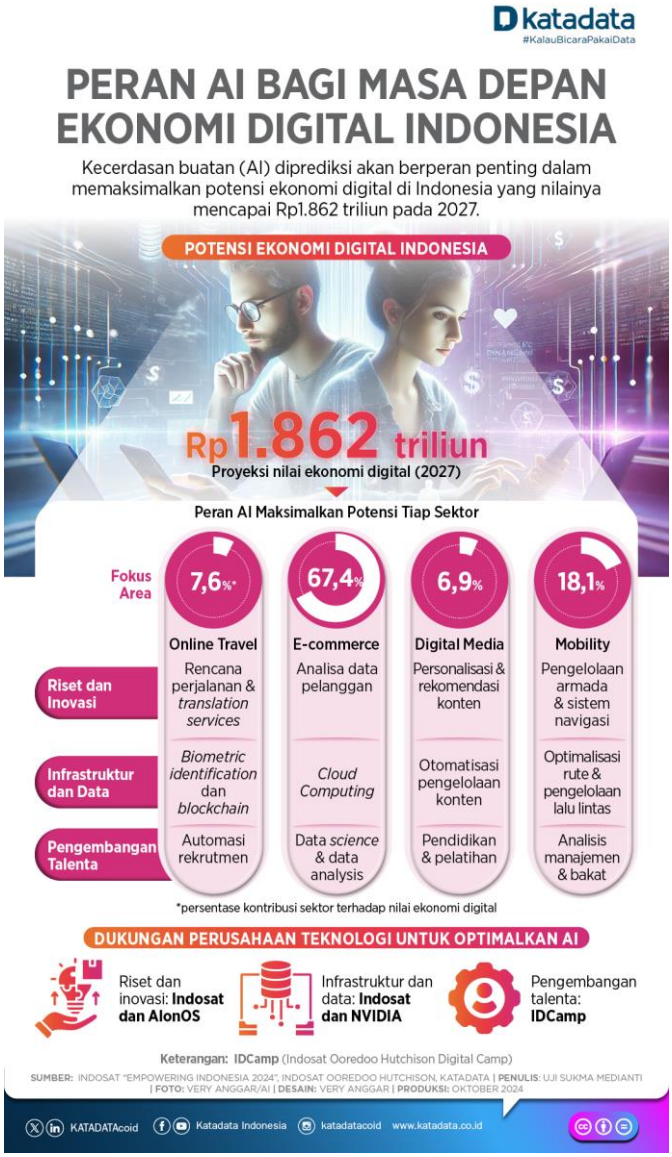


Figure 3. The Role of Artificial Intelligence in Indonesia's Digital Economy
Source: Katadata, 2024

Figure 3 demonstrates that artificial intelligence is projected to contribute significantly to Indonesia's digital economy, particularly in the e-commerce sector, which accounts for the largest potential impact at 67.4 percent. This indicates that AI-based technologies such as customer analytics, personalized recommendation systems, and digital interaction automation

are increasingly becoming essential tools for marketplace platforms. The dominance of AI in e-commerce also suggests that consumer purchasing decisions are increasingly shaped by intelligent digital systems, making consumer trust an important mediating factor in digital transactions.

Several recent studies have shown that technological innovation positively affects consumer decision-making, but the mechanism often operates indirectly through psychological factors such as trust and satisfaction. This indicates that trust can function as an important mediating variable between digital technological capabilities and consumer purchase decisions.

Therefore, this study aims to analyze the influence of artificial intelligence utilization and digital personalization on purchase decisions through consumer trust as a mediating variable.

METHOD

This study employed a quantitative research design with an explanatory approach to examine the causal relationships among artificial intelligence utilization, digital personalization, consumer trust, and purchase decisions. Quantitative explanatory research is appropriate when the objective is to test hypotheses and explain causal influence among latent variables through statistical modeling, particularly in digital consumer behavior studies where predictive relationships are central to theory development (Cheah, 2025).

The population of this study consisted of marketplace users in Indonesia who actively conduct online shopping transactions through digital platforms such as Shopee, Tokopedia, and TikTok Shop. The research subjects were consumers who had interacted with artificial intelligence-based marketplace features, including automated product recommendations, intelligent search systems, chatbot services, and personalized promotional displays during online purchasing activities. Marketplace-based studies commonly use active users as the unit of analysis because they directly experience platform features influencing purchase decisions (Persada et al., 2024).

The sample was determined using purposive sampling because respondents were selected based on criteria relevant to the research objective. The criteria included respondents aged at least 17 years, actively using marketplace applications, and having completed online transactions within the last three months. Purposive sampling is suitable in digital marketplace research because it ensures respondents possess sufficient purchasing experience and familiarity with digital features under study (Persada et al., 2024). A total of 200 respondents was considered adequate because Structural Equation Modeling requires sufficient observations to estimate latent constructs and mediation paths reliably, especially when several variables are simultaneously analyzed (Hair et al., 2021).

The research instrument used a structured questionnaire distributed online through digital forms. The questionnaire applied a five-point Likert scale ranging from strongly disagree to strongly agree. Likert scaling is widely applied in digital consumer studies because it enables measurement of attitudes, perceptions, and behavioral tendencies toward digital services and technology adoption (Ngo et al., 2024). To ensure construct clarity, the operational definition of each variable is presented in Table 1.

Table 1. Operational Definition of Variables

Variable	Indicators	Measurement Scale
Artificial Intelligence Utilization	intelligent recommendation system, chatbot interaction, predictive search, automated service	Likert 1–5
Digital Personalization	personalized product display, customized promotion, relevance of digital recommendation	Likert 1–5

Variable	Indicators	Measurement Scale
Consumer Trust	perceived security, reliability, confidence in platform	Likert 1–5
Purchase Decision	willingness to purchase, actual transaction, repurchase intention	Likert 1–5

Source: Adapted from previous studies

The indicators presented in Table 1 were adapted from recent empirical studies in digital commerce and marketplace behavior to strengthen construct validity and ensure consistency with current digital business research (Sudaryanto et al., 2025).

The research was conducted in Jabodetabek from January to March 2026. This region was selected because it represents one of the largest digital consumption areas in Indonesia, characterized by high internet penetration, intensive online transaction activity, and strong marketplace adoption.

The research instrument used a structured questionnaire distributed online through digital forms. The questionnaire applied a five-point Likert scale ranging from strongly disagree to strongly agree. Likert scaling is widely applied in digital consumer studies because it enables measurement of attitudes, perceptions, and behavioral tendencies toward digital services and technology adoption (Ngo et al., 2024).

Artificial intelligence utilization was measured through indicators including intelligent recommendation systems, chatbot interaction, predictive product search, and automated service features. Digital personalization was measured through personalized product display, customized promotion, and relevance of digital recommendations. Consumer trust was measured through perceived security, reliability of digital systems, and confidence in platform credibility. Purchase decision was measured through willingness to purchase, transaction realization, and repurchase intention. Variable adaptation from previous marketplace studies strengthens construct validity because the indicators have been empirically tested in similar digital commerce contexts (Sudaryanto et al., 2025).

Before full-scale distribution, the questionnaire was tested through a pilot survey involving 30 respondents to ensure clarity, consistency, and reliability of each indicator. Pilot testing is important to identify ambiguous wording and improve internal consistency before the main survey is conducted.

The data collection procedure began with online dissemination of questionnaires through social media and digital communication channels. Incomplete responses were excluded during screening. The final dataset was analyzed using SmartPLS because Partial Least Squares Structural Equation Modeling is appropriate for predictive models involving mediation, latent variables, and non-normal data distribution in digital consumer research (Hair et al., 2021; Cheah, 2025).

The analysis procedure included outer model evaluation through convergent validity, discriminant validity, composite reliability, and Cronbach’s alpha. The inner model evaluation examined path coefficients, coefficient of determination, predictive relevance, and mediation effects. PLS-SEM remains widely recommended in marketplace behavior research because it can simultaneously estimate direct and indirect relationships among multiple constructs with medium sample sizes (Arthur, 2025)..

RESULT AND DISCUSSION

A total of 200 valid responses were analyzed in this study. Respondents consisted of active marketplace users who had experience interacting with artificial intelligence-based features such as automated recommendations, chatbot services, and personalized product displays during online purchasing activities. The majority of respondents were aged between

21 and 35 years, reflecting the dominance of digitally active consumers in marketplace transactions.

Before hypothesis testing, the measurement model was evaluated through outer model analysis to ensure construct validity and reliability. The validity test was conducted using outer loading values, while reliability was assessed through composite reliability and Cronbach's alpha.

Table 2. Outer Loading, Reliability, and Validity Test

Variable	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
Artificial Intelligence Utilization	AI1	0.842	0.861	0.901	0.694
	AI2	0.857			
	AI3	0.821			
	AI4	0.806			
Digital Personalization	DP1	0.853	0.847	0.897	0.686
	DP2	0.835			
	DP3	0.817			
Consumer Trust	CT1	0.874	0.832	0.889	0.728
	CT2	0.856			
	CT3	0.831			
Purchase Decision	PD1	0.886	0.851	0.903	0.757
	PD2	0.871			
	PD3	0.842			

Source: Processed using SmartPLS, 2026

The results in Table 2 indicate that all outer loading values exceed 0.70, meaning each indicator has satisfactory convergent validity. Composite reliability values above 0.70 and Average Variance Extracted above 0.50 confirm that all constructs meet reliability and validity requirements, consistent with PLS-SEM recommendations (Hair et al., 2021).

Structural Model Evaluation

After confirming the measurement model, the structural model was evaluated to determine the strength of relationships among variables.

Table 3. Path Coefficient and Hypothesis Testing

Relationship	Coefficient	t-statistic	p-value	Result
Artificial Intelligence Utilization → Consumer Trust	0.428	5.216	0.000	Accepted
Digital Personalization → Consumer Trust	0.391	4.874	0.000	Accepted
Consumer Trust → Purchase Decision	0.517	6.042	0.000	Accepted
Artificial Intelligence Utilization → Purchase Decision	0.214	2.981	0.003	Accepted
Digital Personalization → Purchase Decision	0.187	2.645	0.008	Accepted

Source: Processed using SmartPLS, 2026

The results demonstrate that artificial intelligence utilization significantly influences consumer trust. This finding indicates that consumers tend to trust marketplace systems when AI features provide relevant product recommendations, efficient chatbot interaction, and intelligent search assistance. Similar findings were reported by Bilal et al. (2024), who found that AI improves digital consumer experience and strengthens purchase intention through trust mechanisms.

Digital personalization also shows a significant positive influence on consumer trust. Personalized recommendations, relevant promotional content, and adaptive digital displays improve consumers' perceptions of platform responsiveness. This confirms that consumers interpret personalization as a signal that digital platforms understand their needs, thereby increasing confidence in platform reliability (Sudaryanto et al., 2025).

Consumer trust has the strongest direct influence on purchase decision. This result indicates that trust remains the central psychological factor in digital transactions, particularly when consumers are exposed to AI-generated recommendations. Consumers are more likely to finalize purchases when they believe the platform is secure, reliable, and credible. Similar conclusions were found in recent marketplace studies where trust significantly predicted purchase decisions in digital shopping environments.

Table 4. Mediation Effect Test

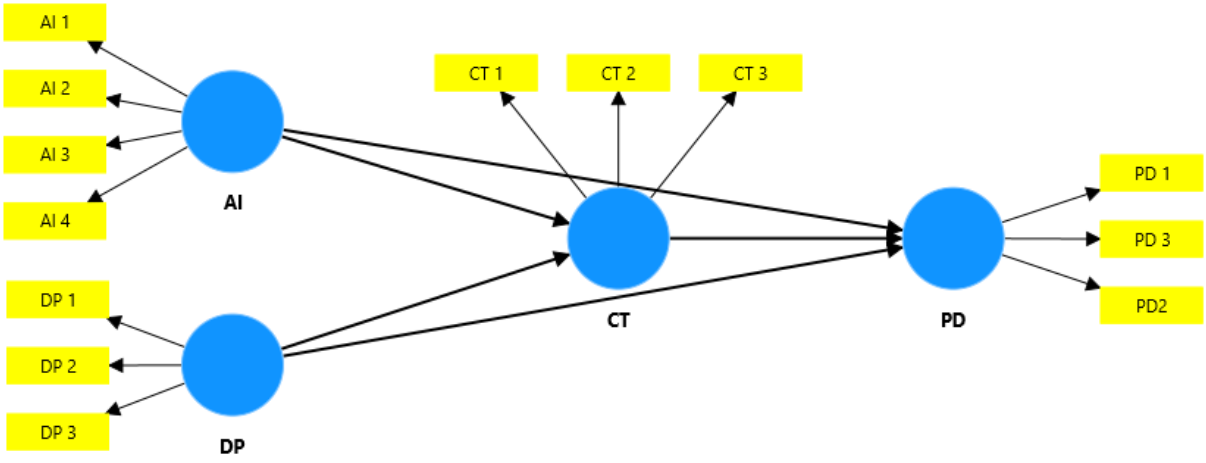
Indirect Relationship	Coefficient	t-statistic	p-value	Result
Artificial Intelligence Utilization → Consumer Trust → Purchase Decision	0.221	4.112	0.000	Significant Mediation
Digital Personalization → Consumer Trust → Purchase Decision	0.202	3.874	0.000	Significant Mediation

Source: Processed using SmartPLS, 2026

The mediation analysis confirms that consumer trust significantly mediates the relationship between artificial intelligence utilization and purchase decision, as well as between digital personalization and purchase decision. This suggests that technological sophistication alone is insufficient to directly encourage purchase decisions unless consumers first develop trust toward digital systems.

This finding is highly relevant in digital marketplace competition because intelligent systems increasingly shape consumer choices, but trust remains the mechanism that converts digital interaction into actual transactions. In AI-enabled commerce environments, transparency and perceived fairness are essential to maintaining trust (Bach et al., 2023).

To provide a clearer representation of the structural relationships among latent variables, the final structural model generated through SmartPLS is presented in Figure 5. The structural model integrates both measurement indicators and path relationships simultaneously, allowing interpretation of outer loading values, endogenous construct determination, and direct effects between variables. According to Hair et al. (2021), visual presentation of the structural model is important because it supports interpretation of predictive relationships and clarifies mediation patterns within PLS-SEM analysis.



Source: Processed using SmartPLS, 2026

Figure 5. Structural Model Result

Figure 5 illustrates the structural relationships among Artificial Intelligence (AI), Digital Personalization (DP), Consumer Trust (CT), and Purchase Decision (PD). The outer

loading values attached to each indicator demonstrate the contribution of each observed variable to its latent construct. Based on the final measurement model, all retained indicators meet the acceptable loading threshold, indicating satisfactory convergent validity. The arrows connecting latent variables represent the direct structural paths examined in the study, where consumer trust functions as the mediating construct between technological variables and purchase decision. In PLS-SEM interpretation, path coefficients and R-square values are used to evaluate explanatory power, with stronger coefficients indicating greater predictive influence on endogenous variables (Hair et al., 2021).

To provide a clearer visualization of the structural relationships among latent variables, the SmartPLS structural model is presented in Figure 5. The model illustrates both the outer model, which reflects indicator loadings, and the inner model, which shows the path relationships among constructs. In PLS-SEM, graphical presentation of the structural model helps explain the predictive mechanism of direct and indirect effects among variables, especially when mediation relationships are involved (Hair et al., 2021; Wong, 2013).

CONCLUSION

This study concludes that artificial intelligence utilization and digital personalization play important roles in influencing purchase decisions in digital marketplace environments, both directly and indirectly through consumer trust. The findings indicate that artificial intelligence contributes positively to consumer trust because intelligent recommendation systems, automated interactions, and predictive digital services improve consumer confidence in online platforms. Digital personalization also strengthens trust by presenting content and product recommendations that are perceived as relevant to individual preferences.

Consumer trust was found to be the strongest explanatory variable affecting purchase decisions, confirming that trust remains a critical psychological mechanism in digital transactions. In highly competitive digital marketplaces, consumers tend to make purchase decisions when they perceive platform systems as secure, reliable, and consistent in delivering personalized digital experiences. The mediating role of consumer trust further demonstrates that technological sophistication alone is insufficient unless accompanied by credibility and transparency in digital service delivery.

The structural model also confirms that the proposed model has substantial explanatory power, indicating that artificial intelligence and digital personalization jointly explain consumer trust and purchase decision behavior effectively. These findings support recent studies showing that AI-based personalization increases purchasing intention when consumers perceive value, transparency, and trust in digital systems.

Practically, marketplace providers should improve artificial intelligence transparency, strengthen personalized recommendation relevance, and maintain consumer data security to enhance trust and encourage sustainable purchase decisions. Future studies are recommended to include additional variables such as privacy concerns, perceived usefulness, or digital satisfaction to improve model comprehensiveness in explaining digital consumer behavior.

REFERENCES

Ameen, N., Tarhini, A., Shah, M., & Madichie, N. O. (2023). Employees' behavioural intention to smart technologies: The role of artificial intelligence in digital business environments. *Journal of Business Research, 157*, 113561.

Bach, T., Ribeiro, A., & Silva, P. (2023). Artificial intelligence and consumer trust in digital commerce: Emerging perspectives on predictive systems. *Electronic Commerce Research and Applications, 58*, 101210.

Bleier, A., Goldfarb, A., & Tucker, C. (2021). Consumer privacy and the future of data-based personalization. *Journal of Marketing, 85*(6), 1–18.

Chatterjee, S., Rana, N. P., Tamilmani, K., & Sharma, A. (2022). The effect of AI adoption on consumer decision-making in online marketplaces. *Technological Forecasting and Social Change, 174*, 121284.

Cheah, J. H., Ting, H., Ramayah, T., & Memon, M. A. (2025). Advanced partial least squares structural equation modeling in digital consumer research. *Journal of Retailing and Consumer Services, 79*, 103812.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., & Williams, M. D. (2023). Artificial intelligence adoption in digital commerce: A systematic review and future agenda. *International Journal of Information Management, 71*, 102642.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Huang, M. H., & Rust, R. T. (2022). Artificial intelligence in service and digital marketing strategy. *Journal of Service Research, 25*(1), 3–18.

Khuong, A. N. G., & Nguyen, T. T. (2025). AI-powered personalized advertising and purchase intention: The mediating role of trust and relevance. *Journal of Open Innovation: Technology, Market, and Complexity, 11*(2), 100452.

Markou, V. (2025). Personalization, trust, and identity in AI-based marketing: An empirical study of consumer acceptance. *Administrative Sciences, 15*(11), 440.

Ngo, L. V., Le, T. D., & Nguyen, H. T. (2024). Consumer attitudes toward AI-enabled digital service interactions in e-commerce. *Heliyon, 10*(3), e24111.

Persada, S. F., Miraja, B. A., & Nadlifatin, R. (2024). Consumer preference in Indonesian online marketplace platforms: Digital interaction and trust formation. *Cogent Business & Management, 11*(1), 2361868.

Riandhi, A. N., & Wang, P. (2025). AI and consumer behavior: Trends, technologies, and predictive purchasing patterns. *Cogent Business & Management, 12*(1), 2544984.

Singhal, R. K., & Kumar, S. (2025). AI-powered personalization in e-commerce: Consumer perceptions, trust, and purchase decision-making. *Asian Consumer Research Journal, 14*(3), 55–70.

Sudaryanto, S., Hanim, A., & Puspitasari, N. (2025). Digital personalization and online trust in marketplace purchase decisions. *Cogent Business & Management, 12*(1), 2503093.

Teepapal, T., Charoensukmongkol, P., & Koomsap, P. (2025). AI-driven personalization: Unraveling consumer engagement, trust, and purchase behavior in social media marketing. *Computers in Human Behavior, 158*, 108329.

Verma, S., Sharma, R., Deb, S., & Maitra, D. (2023). Artificial intelligence in digital marketing: Emerging roles in customer engagement and personalization. *Journal of Retailing and Consumer Services, 72*, 103268.

Wong, K. K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin, 24*(1), 1–32.

Yamuna, G., & Charumathi, M. (2025). The impact of AI in marketing on consumer purchase intention. *IPE Journal of Management, 14*(20), 29–41.

Zhang, Y., Li, X., & Chen, H. (2024). Trust formation in AI-enabled digital commerce systems: Consumer perspectives on intelligent recommendations. *Electronic Markets, 34*(2), 233–249.