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BEYOND AI ADOPTION: THE MEDIATING ROLE OF CUSTOMER EXPERIENCE IN THE RELATIONSHIP BETWEEN AI RECOMMENDATION SYSTEMS, AI CHATBOT QUALITY, AND ONLINE PURCHASE INTENTION

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ABSTRACT

The rapid expansion of e-commerce in Indonesia has accelerated the adoption of artificial intelligence (AI)-based digital marketing tools, such as product recommendation systems and chatbots. However, their ability to directly influence consumer purchase intentions remains questionable. Grounded in the Theory of Planned Behavior (TPB), this study examines the effect of AI product recommendation systems and chatbot quality on online purchase intention, with customer experience as a mediating variable. Data were collected from a minimum target of 385 respondents via online questionnaires. Structural Equation Modeling (SEM) with SmartPLS 4 was employed to conduct descriptive analysis, outer model validation (using AVE, Cronbach's Alpha, and Composite Reliability), and inner model evaluation (R^2 , Q^2 , and path coefficients), followed by hypothesis testing using p-values and t-statistics. The findings reveal that AI product recommendation systems and chatbot quality had no significant direct effect on online purchase intention. In contrast, customer experience exerted a significant direct influence and fully mediated the relationship between AI recommendation systems, chatbot quality, and purchase intention. Theoretically, these results highlight that mismatched recommendations and low-quality chatbot interactions generate negative consumer attitudes, reduce perceived control, and increase the dominance of social norms in shaping purchase decisions. This suggests the need to expand TPB by integrating a technological trust dimension in the digital commerce context. Practically, e-commerce companies should focus on developing more personalized, relevant recommendation systems and improving chatbot responsiveness, clarity, and interaction quality to build trust. Enhancing customer education about AI functionality and benefits is also essential for strengthening positive user experiences and encouraging online purchase intentions.

Keyword: Artificial intelligence, customer experience, online purchase intention, product recommendation system, Theory of Planned Behavior.

INTRODUCTION

E-commerce has become the backbone of Indonesia's digital economy with its rapid and significant growth. Data from the Ministry of Trade shows that the value of e-commerce transactions in Indonesia will reach Rp534 trillion by 2023, with expected growth on a yearly basis of 20% until 2025 (Kementerian Perdagangan RI, 2024). Indonesia ranks as the fourth largest country in terms of internet population, with over 170 million active users and an internet penetration rate of 63% in terms of its total population (APJII, 2023). The high growth rate of e-commerce indicates a fundamental shift in people's consumption patterns from conventional shopping to digital platforms. Digital commerce platforms, including Tokopedia, Shopee, Lazada, and Bukalapak in Indonesia, have become dominant players in this landscape, bringing millions of products and services to Indonesian consumers (Rahman & Saputra, 2023). This growth is also being driven by the COVID-19 pandemic, which has forced many businesses to shift to digital models, as well as the increasing digital literacy of the public. It is important to understand Indonesia's e-commerce dynamics as the sector plays a pivotal role in driving economic engagement, opening up new jobs, facilitating MSMEs to enter a wider market, and catalyzing broader digitization in society (Rimaldi et al., 2024).

The implementation of artificial intelligence (AI)-based product recommendation systems in e-commerce platforms has revolutionized the way products are offered to consumers. These platforms rely on advanced algorithms to analyze how users behave, their purchase history, and user preferences to provide appropriate product suggestions. This increases the relevance of the products offered, which can increase consumer buying interest, and the strategy to present personalized product recommendations with more precise recommendations, so as to make customers feel more valued and cared for. This better shopping experience contributes to a rise in online purchase intention (Evina et al., 2024). Although this technology has been shown to increase sales by up to 35% and conversion rates by 15% on several leading platforms (Erwin et al., 2023), several negative impacts should be investigated as well. These include the following issues: the "filter bubble" effect, which repeatedly displays similar products (Orimus, 2023), thereby reducing the relevance and quality of recommendations for consumers (Abdollahpouri et al., 2019); disappointing experiences when recommendations do not match consumers' needs or preferences (Muslik et al., 2025); and concerns regarding consumer data privacy (Fazlioglu, 2024). These challenges have encouraged e-commerce platforms to seek more effective alternatives, such as AI chatbots, to enhance customer interaction and provide a better shopping experience.

Quality AI chatbots in e-commerce customer service have become a fundamental component in digital marketing strategies. Modern AI chatbots are capable of simulating human conversations and provide a fast and accurate response that can improve the overall user experience. When customers feel supported and get the information they need easily, they tend to be more confident in making the decision to make a purchase. Additionally, positive interactions with chatbots can increase customer satisfaction, thus driving their intention to shop online. However, the incorporation of AI chatbots into e-commerce platforms also presents several notable negative effects, namely limitations in contextual understanding, over-reliance on chatbots, having rigid and limited conversation flows, and collecting sensitive data but not being equipped with adequate security protocols (Moriuchi et al., 2021). These drawbacks can seriously affect the overall consumer experience.

Customer experience is a determining and crucial component in establishing loyalty and encouraging online purchase intent. A comprehensive customer experience encompasses all consumer interactions with e-commerce platforms, from product searches, site navigation, payment processing, to post-

purchase services (Nurhayati et al., 2022). Some of the negative impacts to watch out for are excessive personalization that can create an annoying and alarming impression, excessively high expectations due to excessive marketing promises, unnecessary complexity in the design of the interface or transaction process, and the lack of relevant personalization, which can reduce the chances of conversions and repeat purchases (Threstia et al., 2022).

By comprehensively analyzing consumer perceptions of AI-based digital marketing, this study aims to address the problem of filter bubbles and examine the effects of implementing other recommendation systems powered by artificial intelligence (AI). It also seeks to solve the limitations of contextual understanding of chatbots, balance reliance on automation, improve rigid conversation flows, and improve security and privacy protocols in chatbot interactions. In addition, the study identifies solutions vis-à-vis the impact of consumer involvement with digital commerce platforms and ensures that there is appropriate and relevant personalization.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This research is based on the theory introduced by Ajzen (1991), which is the Theory of Planned Behavior. TPB serves as a conceptual model for analyzing and forecasting human actions. According to this theory, the intention to act plays a determining role in shaping an individual's behavior, which is determined by the following three primary components: their attitude toward the behavior; subjective norms (the perceived social pressure); and perceived behavioral control. This control refers to an individual's assessment of the simplicity or complexity involved in carrying out the behavior, based on prior experiences and potential challenges. This theory is a development of the Theory of Reasoned Action (TRA), which was previously developed by Fishbein & Ajzen (1975).

In TPB theory, especially the premise of perceived behavioral control (PBC), TPB can be used as a tool to interpret how consumers form their perceptions of ease and control when using recommendation systems and Chatbots. Factors such as ease of access, trust in AI, and prior experiences, can improve their perception of control (Venkatesh et al., 2012). If customers feel capable and confident in using the technology, they tend to have higher intentions to make purchases through platforms with AI systems. AI systems capable of improving customer experience through personalization, quick response, and smooth interaction will improve consumers' perception of the shopping experience, which reinforces positive attitudes (Huang & Rust, 2021). With the increase in positive attitudes, supportive social norms, and a perception of high control over the use of AI, customer intent to buy products through AI recommendation systems and conversation quality will increase and vice versa. If consumers feel uncomfortable with the answers provided by Chatbots, it can affect consumers' purchase intention (Luo et al., 2019).

The Influence of an AI Product Recommendation System on Online Purchase Intention

Algorithmic product recommendation systems are systems that use algorithms to provide suggestions or recommendations to users based on the data and preferences that have been collected (Benlian et al., 2022). Research has found that there is a direct relationship between AI recommendation systems and purchase intention based on experience and information obtained through the marketplace (Juliyando & Saputra, 2023). Appropriate recommendations can make decision-making easier and improve the convenience of online shopping (Permana et al., 2024). This technology shortens the process of consumers having to search for the products they need (Tang et al., 2024). The application of AI in

consumer behavior analysis will improve the personalization of the shopping experience. The AI recommendation system has a positive effect on purchase intent. Marketplaces can understand consumer behavior patterns and customize their shopping experience, potentially increasing consumer loyalty and purchase frequency (Dang et al., 2021).

The characteristics of proximity, relevance, and accuracy of information by e-commerce platforms have a substantial positive impact on customer satisfaction, indirectly and positively influence consumer purchase decisions by improving the flow experience, satisfaction, and customer trust (Addison & Fitri, 2022). The quality of product recommendations on e-commerce platforms significantly strengthens consumers' trust in the AI technology on the platform, which includes content quality, utility quality, and expression quality, which ultimately influences consumers' desire to buy products recommended by the platform (Shen, 2024). Thus, the first hypothesis H1 proposed for the study is:

H1: The AI product recommendation system has a positive and significant effect on online purchase intention for e-commerce users in Indonesia.

The Influence of the Quality of AI Chatbots on Online Purchase Intention

A chatbot represents a system designed to act as a conversational agent or virtual assistant that can communicate with humans through the internet. This system serves as a communication channel between companies and customers, especially in the field of marketing and service (Chung & Han, 2022). AI conversations are relevant because they affect consumers' purchase intent for recommended products. Researchers concluded that to improve the user experience, developers should prioritize the improvement of the quality and relevance of AI chatbot responses rather than it just looking or behaving like a human (Chung & Han, 2022). Good communication quality increases customer satisfaction, which will then have a greater effect on the intention to reuse the chatbot, while strengthening online purchase intent (Akdemir & Bulut, 2024). The use of AI can improve purchase intention through various aspects, such as the type of message used, including a warm communication style that makes customers trust AI as a source of information and a competent communication style that makes customers perceive the recommended content as high quality (Schwede et al., 2023). The use of chatbot features in the marketplace affects consumers' buying interest and intention to use the marketplace. The greater the degree of interaction, communication convenience, responsiveness, and user impression, the higher the level of consumer satisfaction. Consumer buying interest is often an early trigger in the online shopping experience, which can in turn affect the chatbot features used in e-commerce (Saputra & Sutarso, 2024). Thus, the second hypothesis H2 proposed is:

H2: A quality AI chatbot has a positive and significant effect on the online purchase intention of e-commerce users in Indonesia

The Influence of Customer Experience on Online Purchase Intention

Customer experience is defined as the overall interaction and experience experienced by consumers when engaged in transactions with a brand or company, especially within the scope of e-commerce activities or marketplaces (Threstia et al., 2022). Positive consumer interactions can increase satisfaction and build loyalty, which ultimately drives purchase intent online (Grace & Pardede, 2023). Elements of consumer experience, such as the quality of online services, ease of website navigation, transaction security, and the responsiveness of customer support, are recognized as significant indicators of online purchase intention. Additionally, there is a linear relationship between the quality of

information and the level of trust in reviews, marketplace platforms, and rating systems (Peña-García et al., 2024). Consumer experience improves relationship quality, which in turn influences consumer purchase intent (Hakim & Dhafi Iskandar, 2025). Increased consumer value perception drives purchase intent, while consumer trust and attitudes act as positive regulators in the correlation between how value is perceived and the intent to buy (Wang et al., 2023). A good experience has a positive impact on purchase intention, with customer satisfaction as a mediator (Grace & Pardede, 2023). The factors impacting customer satisfaction include the customer experience, which then impacts other online purchase intents (Risma et al., 2024). A good experience is one of the contributing factors in encouraging online purchase intent. Thus, the third hypothesis H3 proposed is:

H3: Customer experience has a positive effect on online purchase intention among e-commerce users in Indonesia.

Customer Experience as a Mediator: The Effect of AI Recommendation Systems on Online Purchase Intention

Customer experience serves as a mediating factor between the application of Artificial Intelligence and gamification, and the intention to make online purchases among marketplace users in Indonesia. This highlights the crucial role of customer experience in enhancing the impact of technological innovations on consumer buying behavior (Santy & Iffan, 2023). Customer experience is a key factor that can mediate the relationship between AI technology and consumer purchase intent. It can strengthen the influence of service quality and AI recommendation systems on consumer purchase intent. A good customer experience increases satisfaction and loyalty, which leads to increased online purchase intention (Lang et al., 2024). Influential use of AI on online purchase intention, with customer experience as an intermediary, strengthens the recommendation technology system and consumer purchasing behavior (Chhikara & Tanner, 2026). The function of management information systems (MIS) in facilitating AI-driven recommendation systems and their influence on consumer behavior and purchase intent shows that AI recommendation systems supported by quality data and good personalization can improve purchase intent and customer satisfaction (Ajit Kumar Singh, 2025). AI-based personalized product recommendations influence consumer emotions, which in turn impact purchase intent, emphasizing the importance of customer experience in the online purchasing decision-making process (Nguyen et al., 2025). The AI recommendation system does not merely affect online purchase intent directly, but also plays a role in improving customer experience as a mediator that strengthens the relationship. Thus, the fourth hypothesis H4 proposed is:

H4: Customer experience mediates the impact of an AI recommendation system on online purchase intention among e-commerce users in Indonesia.

Customer Experience as a Mediator: The Effect of AI Chatbot Quality on Online Purchase Intention

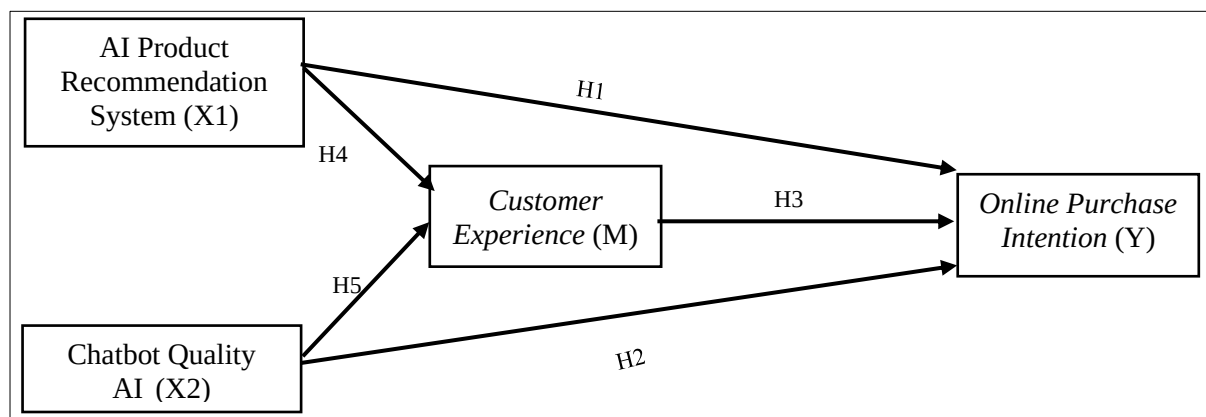
A good experience with the use of chatbots can enhance the probability of customers making an online purchase. In addition, a positive customer experience is influenced by dimensions such as entertainment and media appeal, which indirectly support increased purchase intent through an increase in the overall customer experience (Martínez Puertas et al., 2024). Online customer experience functions as a mediator in the link between digital marketing communication and sustainable purchase intention. This underscores the significance of online customer experience as a key intermediary, emphasizing its pivotal role within the landscape of contemporary digital marketing (Thakur et al., 2025).

The positive experience that consumers gain through interaction with chatbots increases satisfaction and trust, which subsequently boosts consumers' buying intention (Lang et al., 2024). The perceived simplicity of using AI acts as a key mediator that reinforces the influence of psychosocial factors on purchase intentions indirectly (Lopes et al., 2024). Thus, customer experience also holds an essential position as a bridge in the influence of AI chatbots on consumer purchasing behavior. Thus, the fifth hypothesis H5 proposed is:

H5: Customer experience mediates AI chatbot quality with online purchase intention among e-commerce users in Indonesia.

Figure 1

Research Framework



METHODOLOGY

Population

The population in this study was the e-commerce users in Indonesia, especially from the Yogyakarta area, who were at least 18 years old, with an unknown (infinite) population size.

Methods, Techniques, Measurement, and Sample Data Collection

The sampling approach employed is non-probability sampling using a purposive sampling technique. This method was selected as it permits researchers to identify participants based on particular criteria aligned with the goals of the study. These criteria were as follows: Indonesian citizens aged 18-50 years who had made online purchases in e-commerce at least three times in the last six months. Data collection was carried out using an online questionnaire (Google Form), which was distributed to e-commerce users in the Yogyakarta area. Sample size calculation was carried out based on the Cochran formula. The Cochran formula was used to determine the minimum required sample size, whereas a non-probability sampling technique was used to identify individuals who met the eligibility criteria for participation as research respondents. The Cochran formula is as stated below:

$$n = \frac{Z^2 pq}{e^2}$$

$$n = \frac{(1,96)^2 (0,5)(0,5)}{(0,05)^2}$$

$$n = \frac{(3,8416)(0,25)}{0,25}$$

$$n = 384,16 \approx 385$$

Information:

n = Number of samples required

Z = Confidence level 5% = 1,96

p = True chance 50% = 0.5

q = Chance of error 50% = 0.5

e = sampling error = 5%

So, based on this formula, the number of respondents in this study was at least 385.

Operational Definition

Table 1

Operational Definitions, Variables, Indicators, and Measurement Scales

Variable	Operational definition	Indicator	Adoption
Product Recommendation System AI (X1)	AI Recommendation Systems (Algorithmic Recommendation Systems) are systems that use algorithms to provide suggestions or recommendations to users based on the data and preferences that have been collected.	1. The AI-based e-commerce product recommendations displayed are relevant to my needs. 2. AI-based product recommendations in e-commerce feel personalized, especially for me 3. AI-based e-commerce product recommendations change according to my shopping behavior 4. I found new products in e-commerce that are interesting through the AI-based Product Recommendation System 5. AI-based product recommendations in e-commerce are not monotonous (not just displaying similar products) 6. AI-based e-commerce product recommendations are always updated regularly 7. AI-based e-commerce product recommendations that fit my current needs 8. AI-based e-commerce product recommendations are always updated regularly	Rahevar and Darji (2024)

(continued)

Variable	Operational definition	Indicator	Adoption
AI Chatbot Quality (X2)	Quality AI chatbots refer to the level of effectiveness, reliability, and similarity of interactions that a chatbot can provide in meeting the needs of users naturally and satisfactorily.	1. AI chatbots in e-commerce are easy to use 2. The e-commerce AI chatbot responded quickly to my questions 3. I can quickly understand how to interact with AI chatbots in e-commerce 4. The process of interacting with AI chatbots in e-commerce is efficient 5. The information that AI chatbots provide in e-commerce is accurate 6. I don't have to wait long to get answers from AI chatbots in e-commerce 7. I can rely on the information provided by AI chatbots in e-commerce 8. The language that AI chatbots use in e-commerce is polite and fun.	Alsadoun and Alnasser (2025)
Online Purchase Intention (Y)	Online Purchase intention refers to consumers' tendency or readiness to purchase a specific product or brand online under certain conditions.	1. I intend to buy products on e-commerce sites shortly 2. I tend to buy AI-recommended products in e-commerce 3. I plan to make transactions in e-commerce regularly 4. I would like to share my positive experience using AI features in e-commerce 5. I prefer to shop on e-commerce sites 6. I want to try new features in AI-based e-commerce 7. I am interested in exploring new products that e-commerce recommends 8. I will continue to prioritize e-commerce for my online shopping needs	Aziz & Wahid (2018)
Customer Experience (M)	Customer experience includes the experience felt when interacting with e-commerce platforms, which includes aspects such as convenience, simplicity, and trustworthiness of online shopping.	1. The information displayed in e-commerce makes me think 2. I feel like I'm gaining new knowledge when shopping in e-commerce 3. I feel good when shopping in e-commerce 4. I feel satisfied with the shopping experience in e-commerce 5. Visually pleasing e-commerce browsing experience 6. I feel compelled to take action when I see a product recommendation 7. AI features in e-commerce make it easier for me to shop 8. E-commerce makes me feel valued as a customer.	Sulastri (2023)

Notes. The secondary data were obtained from various journal sources, 2025.

Data Analysis Techniques

This study uses two main approaches in data analysis, namely descriptive analysis and inferential analysis applying Partial Least Squares - Structural Equation Modeling (PLS-SEM) with support from SmartPLS software. Descriptive analysis aims to describe the characteristics of respondent data, such as mean, standard deviation, and distributions of frequencies. Descriptive statistics are used to understand the demographic profile and level of perception of each research variable before further analysis (Asrulla et al., 2023). PLS-SEM analysis is employed due to its capability to examine the relationships among latent variables within complex models, and can still be used even though the sample size is relatively small and not normally distributed. This analysis comprises two stages, specifically the outer model (measurement model) and the inner model (structural model).

In the outer model, there are several tests, namely the validity convergence, which is evaluated based on the loading factor values of each indicator and the average variance extracted (AVE). The AVE value is declared good or valid if the AVE value of each variable is ≥ 0.50 (Henseler et al., 2015). Discriminatory validity was tested with cross-loading values between indicators and the test reliability rated using Composite Reliability and Cronbach's Alpha (value ≥ 0.7 declared reliable). In the Inner Model, there are several tests, namely the Coefficient of Determination (R^2), which measures the strength of the influence of an independent variable on the dependent variable (Henseler et al., 2015). Predictive Relevance (Q^2) to see the model's predictive capabilities ($Q^2 > 0$ indicates predictive relevance), and Path Coefficient indicates the correlation's orientation and degree between positive or negative variables (Ghozali, 2011). With this approach, the model is thoroughly tested from the measurement aspect to the causal relationship between the constructs.

RESULT

Descriptive Analysis of Respondents

Table 1

Respondent Characteristics

Description	Frequency	Percentage (%)
Gender		
Man	166	40.2
Woman	247	59.8
Age		
18-25 Years	248	60
26-35 Years	132	32
36-50 Years	33	8
Work		
State Civil Apparatus (ASN)	33	8
SOE Employees	26	6.3
Other	43	10.4
Student/Student	162	39.2
Private Employees/Employees	117	28.3
Businessman	32	7.7

(continued)

Description	Frequency	Percentage (%)
Domicile		
Bantul	47	11.4
Gunungkidul	40	9.7
Yogyakarta City	128	31
São Paulo	34	8.2
Sleman	164	39.7
Average revenue per month		
≤ IDR 2,000,000	184	44.6
≥ IDR 4,000,000	80	19.4
IDR2,000,001-IDR4,000,000	149	36.1
Transactions in E-Commerce in the last 6 months		
Yes	413	100

Notes. Primary data as processed via SmartPLS 4, 2025.

As shown in Table 1, this study was conducted with 247 respondents (59.8%), who were women, while 248 respondents (60.0%) were aged 18–25 years. A total of 162 respondents (39.2%) were concentrated in Sleman (39.7%), and as many as 184 respondents (44.6%) were earning an average income per month below IDR 2,000,000. All the respondents had made online transactions in the last six months.

Results of Research Instruments

Table 2

Outer Loading and Average Validity Test

Variable	Statement items	Loading factor	Average
AI Product Recommendation System (X1)	X1.1: The AI-based e-commerce product recommendations shown are relevant to my needs	0.809	4.03
	X1.2: AI-based product recommendations in e-commerce feel personalized, especially for me	0.700	3.95
	X1.3: AI-based e-commerce product recommendations change according to my shopping behavior	0.755	4.02
	X1.4: I discovered interesting new products in e-commerce through the AI-based Product Recommendation System	0.788	4.07*
	X1.5: AI-based product recommendations in e-commerce are not monotonous (not just displaying similar products)	0.710	3.97
	X1.6: AI-based e-commerce product recommendations are always updated regularly	0.725	3.98
	X1.7: AI-based e-commerce product recommendations that fit my current needs	0.763	3.91**
	X1.8: AI-based e-commerce product recommendations follow ongoing trends and seasons	0.720	4.04
Average			4.00

(continued)

Variable	Statement items	Loading factor	Average
AI Chatbot Quality (X2)	X2.1: AI chatbots in e-commerce are easy to use	0.711	4.06*
	X2.2: E-commerce AI chatbot responded quickly to my questions	0.708	4.06*
	X2.3 I can quickly understand how to interact with AI chatbots in e-commerce	0.735	3.94
	X2.4: Efficient interaction with AI chatbots in e-commerce	0.747	3.94
	X2.5: The information provided by the e-commerce AI chatbot is accurate	0.712	3.93
	X2.6: I don't have to wait long to get an answer from an AI chatbot in e-commerce	0.716	3.99
	X2.7: I can rely on the information provided by AI chatbots in e-commerce	0.715	3.87**
	X2.8: The language that AI chatbots use in e-commerce is polite and fun	0.709	4.00
	Average		3.97
Online Purchase Intention (Y)	Y.1: I intend to buy products on e-commerce shortly	0.738	4.01
	Y.2: I tend to buy AI-recommended products in e-commerce	0.700	3.79**
	Y.3: I plan to make transactions in e-commerce regularly	0.723	3.80
	Y.4: I would like to share my positive experience using AI features in e-commerce	0.713	3.88
	Y.5: I prefer to shop in e-commerce	0.716	4.04*
	Y.6: I want to try new features in AI-based e-commerce	0.707	3.87
	Y.7: I'm interested in exploring new e-commerce recommended products	0.766	3.93
	Y.8: I will continue to prioritize e-commerce for my online shopping needs	0.735	4.03
	Average		3.92
Customer Experience (M)	M.1: The information displayed in e-commerce makes me think	0.700	4.01
	M.2: I feel like I am gaining new knowledge while shopping in e-commerce	0.793	4.06
	M.3: I feel good when shopping in e-commerce	0.798	4.10
	M.4: I feel satisfied with my shopping experience in e-commerce	0.821	4.10
	M.5: Browsing experience in e-commerce is visually pleasing	0.738	4.11*
	M.6: I feel compelled to take action when I see AI-based e-commerce product recommendations	0.751	3.94**
	M.7: AI features in e-commerce make it easier for me in the shopping process	0.779	4.07
	M.8: E-commerce makes me feel valued as a customer	0.788	4.05
	Average		4.06

Notes. Primary data as processed via SmartPLS 4, 2025. *Higher Mean, **Lowest Mean.

Table 2 reveals that the indicators for all variables involved in this research met the criteria for good convergent validity, with a value of outer loading above 0.70 or > 0.70 , according to the validity criteria accepted in the study (Henseler et al., 2015).

Table 3

Validity and Reliability Test Results

Variable	Average Variance Extracted (AVE)	Cronbach's alpha	Composite reliability	Results
Customer Experience (M)	0.596	0.903	0.922	Valid & Reliable
AI Chatbot Quality (X2)	0.517	0.867	0.896	Valid & Reliable
Online Purchase Intention (Y)	0.526	0.871	0.899	Valid & Reliable
AI Product Recommendation System (X1)	0.558	0.887	0.910	Valid & Reliable

Notes. Primary data as processed via SmartPLS 4, 2025.

Based on the results displayed in Table 3, all factors in this study showed good convergent validity because the value of Average Variance Extracted (AVE) was more than 0.50. Moreover, the reliability of the data was also very high, indicated by the value of Cronbach's Alpha and Composite Reliability. They were above 0.70 for all variables, with most of them above 0.80. This indicates that this research instrument was reliable and trustworthy to measure the variables studied (Hair et al., 2021).

Table 4

R Square Test Results

Variable	R Square	R Square adjusted
Customer Experience (M)	0.670	0.668
Online Purchase Intention (Y)	0.670	0.668

Notes. Primary data as processed via SmartPLS 4, 2025.

Table 4 shows that the online purchase intention (Y) variable had an adjusted R-square value of 0.668, indicating that 66.80% of the variance in online purchase intention (Y) can be explained by the independent variables included in the model, while the remaining 33.20% is explained by other factors not included in the model.

Table 5

Q Square Test Results

Variable	SSO	SSE	Q ² (=1-SSE/SSO)
Product Recommendation System AI (X1)	3304.000	3304.000	-
Chatbot Quality AI (X2)	3304.000	3304.000	-
Online Purchase Intention (Y)	3304.000	2162.738	0.345
Customer Experience (M)	3304.000	2011.883	0.391

Notes. Primary data as processed via SmartPLS 4, 2025.

Based on the results shown in Table 5, the Q-square to online purchase intention and customer experience were 0.345 and 0.391, respectively. This value (Q^2) was greater than zero, so it can be said that the structural model has relevant predictions (Hair et al., 2021). Further testing of the goodness-of-fit (GoF) is presented in Table 6. In PLS-SEM, model fit indices are used as supplementary information rather than as the primary basis for model evaluation. Model adequacy should instead be confirmed through convergent validity, discriminant validity, construct reliability, the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and the significance of the path coefficients (Hair et al., 2021).

Table 6

Test Results of Goodness of Fit Measures

Indicator	Saturated model	Estimated model
SRMR	0.054	0.054
d_ULS	1.556	1.556
d_G	0.501	0.501
Chi-Square	1162.043	1162.043
NFI	0.845	0.845

Notes. Primary data as processed via SmartPLS 4, 2025.

Table 6 shows that the SRMR value of 0.054 was acceptable and the NFI value of 0.845 was close to 1, indicating a good fit.

Table 7

Test Results of Path Coefficients

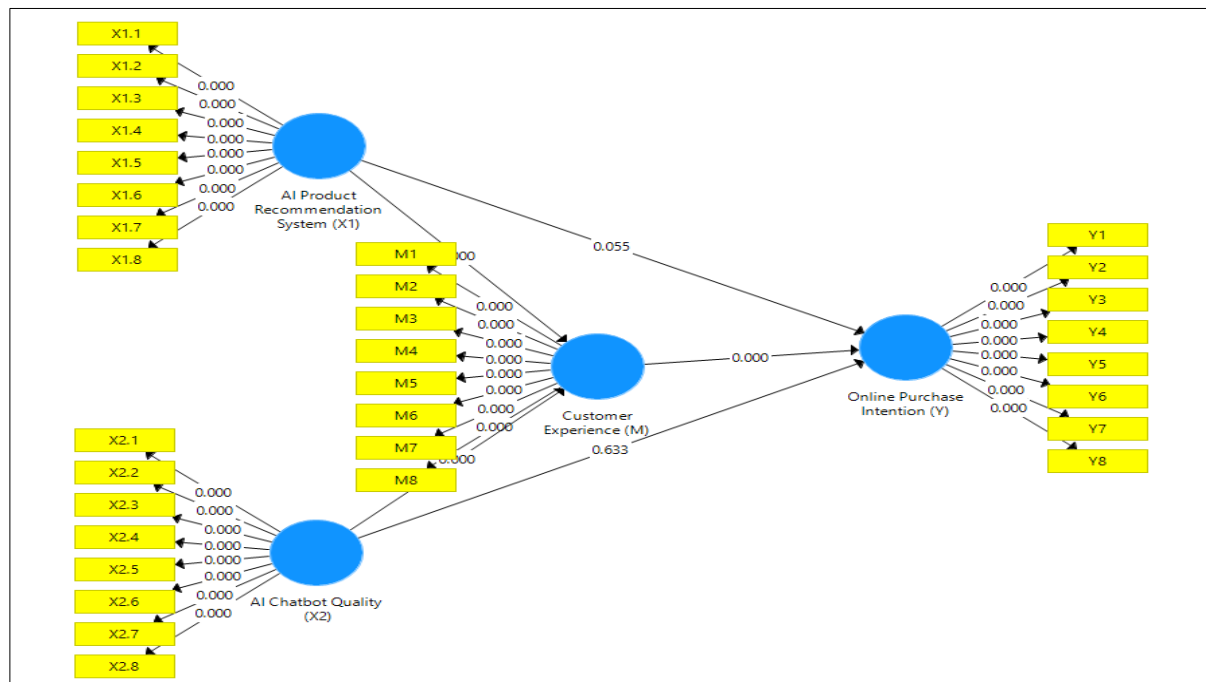
Hypothesis	Original sample (O)	T Statistics (O/STDEV)	P Values	Results
Product Recommendation System AI (X1) -> Online Purchase Intention (Y)	0.141	1.936	0.055	Rejected
AI Chatbot Quality (X2) -> Online Purchase Intention (Y)	0.025	0.477	0.633	Rejected
Customer Experience (M) -> Online Purchase Intention (Y)	0.684	8.968	0.000	Accepted
Product Recommendation System AI (X1) -> Customer Experience (M) -> Online Purchase Intention (Y)	0.377	6.979	0.000	Accepted
AI Chatbot Quality (X2) -> Customer Experience (M) -> Online Purchase Intention (Y)	0.223	5.087	0.000	Accepted

Notes. Primary data as processed via SmartPLS 4, 2025.

Based on the analysis of path coefficients in Table 7, it was found that AI product recommendation system (H1) and AI chatbot quality (H2) did not have a positive and significant effect on online purchase intention, so these two hypotheses were rejected. However, customer experience (H3) had a positive and significant effect on online purchase intention, with a large influence (0.684), so this hypothesis was accepted. Interestingly, customer experience also mediated the impact of AI product recommendation system (H4) and AI chatbot quality (H5) on online purchase intent, both of which showed P-Values below 0.05 and T-Values above 1.96, so these two mediation hypotheses were accepted.

Figure 2

Statistical T Test



Notes. Primary data as processed via SmartPLS 4, 2025.

DISCUSSION

AI Product Recommendation System and Online Purchase Intention

The first findings of this study were that the AI-based recommended e-commerce products had not yet met the needs of respondents in online purchasing decisions. This follows the variable indicator X1.7 as the lowest mean, namely "Recommendations for AI-based e-commerce products that suit my current needs," indicates that the recommendation system had not met user expectations in the context of personalization. When the recommendation system is irrelevant, users will feel that the platform does not understand their preferences accurately (Ao Ting, 2025), so they tend to ignore the recommendations. This situation undermines the effectiveness of AI features in accelerating purchasing decision-making and increasing engagement (Chau et al., 2025). Psychologically, inappropriate recommendations create perceived misfit between the product and the customer's needs, which has a direct impact on the purchase intention (Vo et al., 2022). Mismatches can also result in negative digital experiences and reduce trust in AI technology in e-commerce (Choung et al., 2023).

Recommendation systems are a central part of AI-driven marketing strategies, and low performance can hinder the achievement of digital business goals. To address this, the recommendation system must be improved through more adaptive approaches, such as utilizing context-aware recommendations (Venkatachalam & Ray, 2022) and deep learning personalization (Anggoro & Saputra, 2023) which considers the time, location, and emotional behavior of the user. The integration of user explicit feedback also needs to be strengthened to increase the relevance of recommendations. Thus, the system can provide truly contextual recommendations and support purchase decisions.

AI Chatbot Quality and Online Purchase Intention

The findings of this study indicated that using the information from an AI chatbot only in e-commerce was not reliable or felt less convincing for respondents in purchasing products, which was indicated by the variable indicator X2.7 as the lowest mean, namely "I can rely on the information provided by the AI chatbot in e-commerce." This indicates that, in the context of this study, how good or bad Quality AI chatbots were used did not seem to directly affect consumers' interest in making online purchases. This was mainly caused by skepticism over the reliability of the chatbot's information. Distrust of chatbots can cause consumers to switch to competitors who provide human interaction or seek information from other sources, thus lowering customer retention rates (Kumar & Metta, 2025). Good communication quality increases customer satisfaction, which has a greater effect on the intention to reuse the chatbot, while strengthening online purchase intent (Akdemir & Bulut, 2024). The use of AI can improve purchase intention through various aspects of assessment, such as the type of message used. A warm communication style can make customers trust AI as a source of information, while a competent communication style can make customers perceive the recommended content as high quality (Schwede et al., 2023).

The use of chatbot features in the marketplace affects consumers' buying interest and their intent to use the marketplace; the higher the level of engagement, clarity of communication, promptness in responses, and user perception during usage, the higher the level of consumer satisfaction (Misischia et al., 2022). Consumer buying interest is often an early trigger in the online shopping experience, which can affect chatbot features in e-commerce (Saputra & Sutarso, 2024). Even though Chatbot AI is a valuable tool for customer service and operational efficiency, its current quality does not directly correlate with increased interest in buying online. Marketers may need to reevaluate the roles of their chatbots. In their strategy, they should focus on improving the overall customer experience which can then indirectly affect purchase intent.

Customer Experience and Online Purchase Intention

The findings of this study were that a visually pleasing e-commerce browser experience for respondents ultimately attracted their online shopping interest, which was in accordance with the M5 variable indicator as the highest mean, namely "Browsing experience in e-commerce is visually pleasing." This indicates that pleasing visual aspects, responsive browsing experience, and overall satisfaction from the shopping experience online are very dominant in driving buying interest (Chen & Yang, 2021). In the context of e-commerce, a positive customer experience encompasses various aspects, stemming from how easily users can navigate the website, to speed in loading, quality product information, a smooth checkout process, and responsive after-sales service. When consumers experience a fun, efficient, and personalized experience, they tend to feel more confident and motivated to complete transactions.

Consumer experience improves relationship quality, which in turn affects purchase intention or consumer purchase intent (Hakim & Dhafi Iskandar, 2025). Increased consumer value perception drives purchase intent, while consumer trust and attitudes act as regulators in the connection between perceived value and the intention to make a purchase (Wang et al., 2023). A positive experience influences purchase intention, with customer satisfaction serving as a mediating factor. (Grace & Pardede, 2023). Customer experience has an impact on customer satisfaction, which then impacts other online purchase intentions (Risma et al., 2024). A good experience is one of the factors in encouraging online purchase intent. Positive consumer interactions can increase satisfaction and build loyalty, which ultimately drives purchase intent online (Grace & Pardede, 2023).

These findings are in stark contrast to prior results related to an AI product recommendation system and AI chatbot quality. This indicates that while AI technologies (such as recommendations or chatbots) may not directly drive buying interest, their positive impact is most likely manifested through improved customer experience. Put differently, AI has the potential to be an effective instrument in creating an exceptional customer experience, and it is this superior experience that ultimately fuels buying interest. Overall, this study has emphasized that in AI-based digital marketing, the strategy must be centred on creating a positive customer experience as the main key to increasing interest in buying online. This means focusing not only on the implementation of the AI technology itself, but on how it is integrated to offer an uninterrupted, personalized, and satisfying experience for consumers.

Mediation Effect of Customer Experience between Product Recommendation System and Online Purchase Intention

The fourth finding of this study was that through an AI-based product recommendation system, respondents found interesting new products in e-commerce and pleasant visual experiences, so that they felt satisfied. The X1.4 indicator was "I find interesting new products in e-commerce through an AI-based Product Recommendation System." Meanwhile, for the customer experience (M) variable, the indicators with the highest scores were M5 "Browsing experience in e-commerce is visually pleasing" and M4 "I feel satisfied with the shopping experience in e-commerce." This reveals that aspects of new product discovery through AI recommendations, as well as visual experience and overall satisfaction, serve a crucial function in mediating the relationship between AI recommendation systems and online buying interest.

The AI product recommendation system does not directly affect buying interest online, but rather through an escalation intermediary, the customer experience has become positive. These mediation findings are crucial because they explain why the AI product recommendation system initially did not show a direct influence on buying interest online, as discussed in the first finding. The main function of the AI product recommendation system is to improve the quality of customer experience, which in turn will drive buying interest. A good recommendation system can make the shopping process more personalized, efficient, and enjoyable, and it is this positive experience that motivates consumers to make a purchase. The effect of AI use on online purchase intention with customer experience as an intermediary, strengthens the recommendation technology system and consumer purchase behavior (Chhikara & Tanner, 2026). Customer experience is a key factor that can mediate the relationship between AI technology and consumer purchase intent, it can strengthen the influence of service quality and AI recommendation systems on consumer purchase intention. A good customer experience increases satisfaction and loyalty, which leads to increased online purchase intention (Lang et al., 2024).

The function of management information systems (MIS) in facilitating AI-driven recommendation systems and their influence on consumer behavior and purchase intent shows that AI recommendation systems supported by quality data and good personalization can improve purchase intent and customer satisfaction (Ajit Kumar Singh, 2025). AI-based personalized product recommendations influence consumer emotions, which in turn impact purchase intent, emphasizing the importance of customer experience in the online purchasing decision formulation process (Patnaik et al., 2025). Thus, even though the AI product recommendation system does not exert a significant direct influence on online purchase intention, its role as a critical driver of customer experience, must be acknowledged as such. This suggests that investments in AI for digital marketing should be focused on how AI can improve consumer interaction, make the shopping process more intuitive and enjoyable, and ultimately build experiences that motivate purchases. An effective strategy is to use AI as a tool to create a superior customer journey, which will indirectly increase sales conversions.

Mediation Effect of AI Chatbot Quality on Customer Experience and Online Purchase Intention

The study's fifth finding concerns the user-friendliness and response speed of AI chatbots in e-commerce. The issue is whether these features will increase the convenience of browsing visually, and ultimately contributes to satisfaction. The highest scoring indicators for the AI chatbot quality (X2) variable were X2.1 "AI chatbot in e-commerce is easy to use" and X2.2 "Chatbot AI e-commerce responded quickly to my questions." Meanwhile, for the customer experience (M) variable, the highest scoring indicators were M5 "Browsing experience in e-commerce is visually pleasing" and M4 "I feel satisfied with the shopping experience in e-commerce" (both 4.11). This underscores the fact that the efficiency and rapid replies provided by AI chatbots, when combined with a pleasing visual experience, indirectly increase online buying interest. Based on the combination of these results, it is clear that the quality of AI chatbot did not directly affect online buying interest, but rather improved the customer experience. These findings provide clarity on the role of AI chatbots in driving purchases. Why does quality AI chatbot not directly affect online buying interest (as discussed in the previous analysis), but has a mediating effect through customer experience? This shows that AI chatbots, when designed and implemented well, serve as a customer experience enhancer, and it is this positive experience that ultimately fuels buying interest.

Online customer experience mediating the relationship between digital marketing communication and sustainable purchase intention reveals that online customer experience is an important mediating element in the context of digital marketing communication and continuous purchase intent, demonstrating the central role of customer experience as part of modern digital marketing (Thakur et al., 2025). The good experience that consumers get through interaction with chatbots increases satisfaction and trust, which in turn strengthens consumer purchase intent (Lang et al., 2024). The user's perception of usability of AI acts as a key mediator that reinforces the influence of psychosocial factors on purchase intentions indirectly (Lopes et al., 2024). Thus, customer experience also plays an important role as a bridge in the influence of AI chatbots on consumer purchasing behavior. These results emphasize that the quality of the AI Chatbot is not just an additional feature, but rather an important feature of strategic investments that affect buying interest indirectly, namely by increasing customer experience. Marketers should focus on developing a Chatbot that is not only functional, but also provides a seamless, informative, and helpful experience, because customer experience is the bridge to buying interest online.

CONCLUSION

From the analysis and discussion of the data, it may be inferred that the AI product recommendation system and the quality of AI chatbots did not have a direct effect on online purchase intention in e-commerce users in Indonesia. However, customer experience had a significant direct influence and acted as a mediator in the relationship between the variables of the AI product recommendation system and the quality of AI chatbots, with online purchase intentions.

Theoretical Implications

The implications of TPB (Theory of Planned Behavior) are reflected in respondents' perceptions that AI-based e-commerce product recommendations do not adequately meet their needs in online purchase decisions, and that information provided solely by AI chatbots in e-commerce is not perceived as sufficiently reliable or convincing when purchasing products.

Attitude: The mismatch of product recommendations and low trust in AI chatbots can result in a negative attitude towards online purchases. This negative attitude arises because AI systems do not provide tangible benefits felt by consumers, which should be the basis for the formation of positive attitudes in the SDGs.

Subjective Norms: When AI technology in e-commerce is not convincing, consumers may be more influenced by opinions or recommendations from friends, family, or communities rather than by AI. This shows that trust in social systems is more dominant than technology in influencing purchase intentions.

Perceived Behavioral Control: If AI is considered unhelpful or even hindering in the purchase process, then consumers' perception of control over online shopping decisions becomes low. This reduces the likelihood that they have the intention to make a purchase online because they feel they do not have complete control.

Practical Implications

The practical implications are based on respondents' perceptions that AI-based e-commerce product recommendations have not yet matched their needs in online purchasing decisions and that AI chatbots are perceived as less convincing when making product purchases.

Development of a More Personal and Relevant Recommendation System: E-commerce companies must optimize AI recommendation algorithms to be more accurate in understanding user preferences and needs, for example, by analyzing shopping behavior or search history.

Increasing Trust in AI Chatbots: The design of the chatbot needs to be improved in terms of speed, relevance of answers, and the language used to make it feel more professional, informative, and convincing. It can also be done by adding hybrid features, chatbots + human support (human agent fallback).

Consumer Education on AI Features. E-commerce needs to educate and socialize to increase consumers' understanding of the benefits and how to use AI features so that their perception is more positive and their behavior control increases.

Focus on User Experience (UX): The integration of AI into e-commerce is supposed to strengthen the user experience, not confuse or undermine user trust. Therefore, it is important to conduct tests.

Recommendations for Future Research

Future research is encouraged to examine additional factors that may better explain consumers' online purchase intentions, such as trust in AI, perceived usefulness, perceived ease of use, perceived risk, AI transparency, and privacy concerns, as mediating or moderating variables. Researchers are also encouraged to extend the theoretical perspective beyond the Theory of Planned Behavior (TPB) by incorporating theories such as the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT2), Expectation Confirmation Theory (ECT), or Trust Theory. Furthermore, future studies should investigate different e-commerce platforms, product categories, and demographic or cross-country contexts to improve the generalizability of the findings. Methodologically, longitudinal, experimental, or mixed-method approaches are recommended to

provide stronger causal evidence and deeper insights into consumer perceptions. Finally, future research should explore the impact of emerging AI technologies, including generative AI, large language model (LLM)-based chatbots, and conversational AI, on customer experience, trust, and online purchase intention.

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