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Artificial Intelligence (AI) Based Marketing: Optimization in Changing Consumer Behavior Through E-Commerce Platforms

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Abstrak

The increasing use of artificial intelligence (AI) in digital marketing has revolutionized how e-commerce businesses interact with consumers. AI enables content personalization, predictive analysis of consumer needs, and automation of various aspects of marketing. However, the extent to which this technology influences consumer behaviour still needs further research. This study examines the impact of AI-based marketing on consumer behaviour, specifically in purchasing decisions, customer loyalty, and brand engagement on e-commerce platforms. Using AI-based personalization techniques and AI-powered chatbots, e-commerce platforms such as Shopee and Tokopedia offer customized experiences to increase consumer satisfaction and long-term loyalty. The analysis was conducted to determine how AI-based marketing strategies consisting of content personalization and chatbot interactions can influence consumer behaviour and contribute to the development of effective marketing strategies in the e-commerce industry.

Kata Kunci: *Content Personalization; AI-based Chatbot; Satisfaction; Loyalty*

Introduction

The increasing use of artificial intelligence (AI) technology in digital marketing has changed how e-commerce companies interact with consumers. AI enables more sophisticated personalization, prediction of consumer needs, and automation of various aspects of marketing. However, the extent to which this technology influences consumer behaviour still needs further research. This research focuses on examining the influence of AI-based marketing on consumer behavior in e-commerce, particularly in terms of purchasing decisions that affect customer loyalty and satisfaction with brands. The e-commerce industry has experienced rapid growth in Indonesia and globally in recent years. In Indonesia, increased internet access, smartphone penetration, and changes in consumer shopping behaviour have driven a surge in online transactions. Large e-commerce platforms such as Tokopedia, Shopee, and Bukalapak have become integral to people's daily lives, offering various products, from daily necessities to luxury goods. Globally, giants such as Amazon, Alibaba, and eBay have recorded significant growth in online sales, mainly driven by the COVID-19 Pandemic, which forced many consumers to switch to online shopping. This phenomenon is also supported by technological innovations that continue to develop, enabling an easier, faster, and safer shopping experience. Artificial intelligence (AI) has become a key component in e-commerce marketing strategies. AI enables deep personalization using consumer data to create more relevant and engaging shopping experiences. One example of the use of AI is in product recommendation systems, where

algorithms learn consumer preferences and behaviours to provide relevant product suggestions.

Additionally, AI-powered chatbots have been integrated into customer service, enabling faster and more responsive interactions. AI also analyses massive amounts of consumer data, allowing e-commerce companies to understand behavioural trends and predict consumer needs. AI can deliver messages tailored to individuals through content personalization, increasing engagement and sales conversions. Consumer behaviour has changed significantly in the digital context, especially with technologies such as AI influencing purchasing decisions. Today's Consumers are more likely to research products online at prices, read reviews, and take advantage of digital promotions. They also increasingly expect a personalized shopping experience where brands understand their needs and preferences. Technology has enabled the delivery of more relevant and timely messages, influencing consumer loyalty and satisfaction. These changes indicate that consumers are more proactive and informed and have higher shopping experience expectations.

Although AI has been widely adopted in e-commerce marketing strategies, there is still a significant research gap regarding the specific impact of AI-based marketing on consumer behaviour, especially in a local context such as Indonesia. Most existing studies focus more on adopting the technology in general or on the technical aspects of AI itself. In-depth research exploring how AI impacts specific aspects of consumer behaviour, such as decision-making, brand loyalty, and consumer engagement, is still very limited. This opens up a huge opportunity for researchers to fill this gap and provide deeper insights into how AI can be effectively leveraged in e-commerce marketing to drive better results. Most previous studies have focused on the technological aspects of AI without deeply exploring its impact on changing consumer behaviour in e-commerce. Many studies have focused on developed markets, such as the United States and Europe, with little attention paid to the context of e-commerce in emerging markets, where consumer dynamics can be very different. Many studies have not comprehensively defined or measured consumer behaviour, such as purchase decisions, loyalty, and brand engagement. There is little research that integrates the influence of AI-based marketing with socio-cultural factors that may moderate or mediate the relationship between AI and consumer behaviour. A major gap found is the lack of research that looks at the influence of AI on various aspects of consumer behaviour holistically, including brand engagement, loyalty, and purchase decisions. There is a lack of interaction between AI and consumer psychological factors, such as how AI affects consumer perceptions of privacy, trust, and satisfaction in e-commerce. Most previous studies are cross-sectional or descriptive, thus not providing insight into the long-term dynamics of AI's influence on consumer behaviour. With the increasing adoption of AI in e-commerce, understanding how this technology influences consumer behaviour is crucial for businesses to design effective marketing strategies and meet consumers' evolving needs. This study is expected to fill the existing gap by providing deeper insights into the influence of AI on consumer behaviour in e-commerce, especially in the context of emerging markets. This study also aims to develop a more comprehensive conceptual framework covering various aspects of consumer behaviour.

The **problems** in this study are: (1) is the application of AI in e-commerce marketing able to increase consumer loyalty for a particular brand? and (2) to what extent does AI affect consumer engagement towards consumer satisfaction for brands on e-commerce platforms? This **study aims** to (1) analyze the effect of content personalization on consumer satisfaction on e-commerce platforms, (2) analyze the effect of using chatbots on consumer satisfaction on e-commerce platforms, (3) analyze the effect of using chatbots on consumer satisfaction on e-commerce platforms, and (4) analyze the effect of using chatbots on consumer loyalty on e-commerce platforms. This study is expected to provide insight for e-commerce industry players in understanding how AI can be optimally utilized in marketing strategies to influence consumer behaviour and deliver academic contributions to digital marketing. This study is expected to contribute significantly to understanding and evaluating the impact of AI-based marketing on consumer behaviour in the e-commerce industry and offer practical guidance for industry players in optimizing strategies. This research can also help consumers understand how AI impacts the shopping experience and increase awareness of personal data use.

Analysis Method

Theoretical Approach

A. Consumer Behavior Theory

This theory is used to understand how individuals make purchasing decisions and how various factors, including technology, influence the process. In the context of AI-based marketing, consumer behavior theory helps explain how personalization, product recommendations, and interactions with AI-based chatbots can influence consumer purchasing decisions, satisfaction, and loyalty. Consumer behavior involves the decision-making process in purchasing, including need recognition, information search, evaluation of alternatives, purchase decisions, and post-purchase behavior. Factors such as social, psychological, and situational influences also play an essential role.

B. Stimulus-Organism-Response Theory (SOR)

It is a conceptual framework that explains how stimuli from the external environment affect the internal condition (or state) of an individual, which then triggers specific specific responses or behaviors. This theory is widely used in environmental psychology and consumer behavior to understand the process behind decision-making. Stimulus (S) is an external stimulus that affects an individual. Organism (O) refers to the internal psychological condition of the consumer that is influenced by the stimulus. At the same time, Response (R) is consumer behavior that appears as a reaction to the stimulus through its internal condition.

C. Consumer Engagement Theory

This theory is to evaluate how AI-based interactions increase consumer engagement and loyalty. This theory discusses how consumers engage cognitively, emotionally, and behaviorally with a brand or product. In the context of AI, this theory can be used to analyze how personalization and interactions generated by AI increase consumer engagement with brands on e-commerce platforms.

Research Model and Hypothesis Development

AI-based marketing encompasses a range of techniques and technologies, including content personalization and the use of chatbots. Both help achieve marketing goals more efficiently and effectively by leveraging artificial intelligence to increase consumer purchases, specifically enhancing consumer satisfaction and loyalty.

A. The influence of AI-based content personalization on consumer satisfaction and consumer loyalty

Through the consumer behavior theory approach, purchasing decisions can be influenced by psychological, social, and situational factors. Consumers tend to feel more satisfied when the content they receive is relevant to their personal needs and preferences. AI enables a deeper understanding of consumer behavior through big data analysis, which can then be used to deliver more targeted content. Personalized content creates a more valuable experience for consumers, enabling companies to understand and meet their unique needs. This increases positive perceptions and satisfaction with a service or product. With so much information available, consumers often feel overwhelmed. AI helps filter information and deliver relevant content, reducing information overload and enabling consumers to make faster and more informed decisions. Personalized content tends to trigger a stronger emotional response, whether it is through a more personal connection or by meeting consumer expectations more effectively. These positive emotions contribute directly to consumer satisfaction.

Meanwhile, the Stimulus-Organism-Response (SOR) Theory approach explains consumer satisfaction by implementing AI-based content personalization (stimulus); the platform creates an experience that suits consumer needs, thereby increasing satisfaction (organism). This aligns with the SOR theory, which posits that external stimuli will positively impact the internal state of consumers, as reflected in the increasing level of satisfaction. The Stimulus-Organism-Response (SOR) Theory is also able to explain consumer loyalty, as content personalization creates psychological conditions that strengthen emotional relationships and consumer trust (the organism). This results in a response in the form of consumer loyalty (response). The SOR theory explains that stimuli that trigger strong internal conditions will encourage the behavioral response desired by the company, namely loyalty.

With the **integration of these theories**, it becomes clear that AI-based content personalization impacts consumer satisfaction through **Relevance and Added Value (Consumer Behavior)**. Consumers feel more appreciated and cared for when the content they receive aligns with their personal preferences, thereby increasing their satisfaction. Consumers are more satisfied when they perceive that personalization technology is valuable and easy to use, thereby increasing convenience and efficiency in interacting with products or services. The synergy of utilizing AI in content personalization not only meets the emotional and psychological needs of consumers but also ensures that the technology is well-received and used effectively, ultimately increasing consumer satisfaction.

AI-based content personalization enables companies to deliver more relevant, interactive, and personalized consumer experiences, ultimately increasing customer engagement and satisfaction. Consumers who are satisfied and feel understood by the brand are more likely to become loyal customers, and their loyalty will likely grow over time. Zhang, Y., & Li, H. (2022; Lee, J., & Kim, S. (2023); Chen, D., & Wang, X. (2021); found

that AI-based content personalization on e-commerce platforms significantly increases consumer satisfaction. Consumers feel more valued and interested when product and service recommendations are tailored to their personal preferences. Research by Widiastuti, R., & Pratama, D. (2023), Kumar, R., & Singh, A. (2022) found that AI-based content personalization on Indonesian e-commerce platforms, such as Shopee and Tokopedia, increases consumer satisfaction. Consumers are more satisfied with the shopping experience because the content presented aligns with their preferences. Liu (2020) found that the application of NLP in content personalization has an impact on platform user loyalty. Davenport, T. H. (2022) focuses on the role of AI in hyper-personalization and its effect on customer loyalty through deeper engagement. Gao, Y., & Liu, H. (2023) stated that AI-powered personalization significantly impacts the customer journey, particularly in terms of customer retention and engagement.

H1 : AI-based content personalization increases consumer satisfaction

H2 : AI-based content personalization increases consumer loyalty

B. The influence of using AI-based chatbots on consumer satisfaction and consumer loyalty

AI chatbots can offer personalized interactions with consumers, tailoring responses to their preferences, purchase history, and specific needs. These customized experiences increase consumer engagement because they feel cared for and understood. Consumers who feel valued and cared for through personalized interactions tend to be more loyal to a brand or company. AI chatbots are typically available 24/7, giving consumers seamless access to information, assistance, or problem resolution at any time. This convenience increases engagement because consumers can interact with the brand at their convenience. Continued engagement through convenient and timely interactions contributes to increased loyalty, as consumers are more likely to return if they know they can count on responsive and accessible service. With fast and accurate responses, AI chatbots can increase consumer satisfaction, which in turn strengthens engagement and builds loyalty. Satisfied consumers are more likely to develop long-term relationships with brands.

A well-designed AI chatbot can increase the perceived utility of consumers, for example, by providing quick solutions to questions or problems. The more useful the chatbot is in meeting consumer needs, the greater the engagement will be. If consumers feel that the AI chatbot is practically helping them, they are more likely to be loyal because this positive experience reinforces trust and comfort in using the service. Chatbots that are easy to use, with user-friendly interfaces and intuitive navigation, are more likely to be accepted by consumers. This ease of use drives higher engagement because consumers feel less overwhelmed by interacting with the technology. Ease of use also contributes to loyalty because consumers are more likely to stick with services that do not require extra effort or cause frustration.

The Stimulus-Organism-Response (SOR) theory explains that by presenting AI chatbots as a stimulus, the platform provides a responsive and personalized service experience, thereby increasing consumer satisfaction (the organism), which is a stimulus that affects internal psychological conditions and impacts positive responses. Likewise, AI chatbots that provide responsive and personalized services (stimulus) form favorable psychological conditions, such as trust and attachment (organism), thereby encouraging loyal consumer behavior (response) through the SOR principle, which

connects stimulus, internal conditions, and behavioral responses. Overall, well-designed AI chatbots that align with consumer needs and expectations will increase engagement and loyalty through more personalized, practical, and user-friendly experiences.

Research by Zhang, Y., & Li, H. (2022), Kumar, R., & Mishra, S. (2023); Lee, J., & Park, S. (2023); Chen, D., & Wang, X. (2021) found that high chatbot responsiveness can increase user satisfaction, which in turn increases consumer engagement and loyalty. In this study, users felt more connected to brands that utilize chatbots due to the fast and personalized service provided by the chatbot.; Aditya, R., & Sari, M. (2022); Nurul Huda, B., & Sukma, A. (2021) found that AI chatbots used by e-commerce platforms in Indonesia, such as Tokopedia and Bukalapak, increase customer satisfaction. Satisfied users tend to be more loyal and return to the platform to transact more often.

H3 : The use of AI chatbots increases customer satisfaction

H4 : Use of AI chatbots increases consumer loyalty

Research Method

The sample of this study consists of consumers who actively shop on popular e-commerce platforms such as Tokopedia, Shopee, or Bukalapak. This study will use a purposive sampling method to select samples that meet the criteria, namely (1) Aged between 18-45 years, (2) Actively shopping online at least once in the last three months, and (3) Consumers who have interacted with AI features on the platform, such as product recommendations, chatbots, or personalized ads. Data collection through online questionnaires distributed via email or social media to e-commerce consumers. This survey will measure consumer perceptions of AI features on e-commerce platforms and how these features affect purchasing decisions, loyalty, and engagement with brands. The questionnaire includes demographics: Age, gender, education, income, and online shopping frequency. The main part concerns experience and perceptions of AI-based marketing and purchasing behaviour. The data was collected and analyzed using descriptive and inferential statistical methods. Linear regression analysis will test the relationship between the independent (AI-based marketing) and the dependent (consumer behaviour) variables.

Operational and Measurement of Variables

A. Independent Variables: Artificial Intelligence (AI) Based Marketing

AI-based marketing refers to using artificial intelligence technology in various aspects of marketing on e-commerce platforms. This includes features such as personalized product recommendations, chatbots that assist customers, intelligent ad targeting, and data analysis to predict customer needs. Independent variables and dependent variables were measured using a 7-point Likert scale, and respondents were asked to assess how often and how effectively they experienced or used AI-based features when shopping on e-commerce platforms so that they would impact customer decisions.

- **Content Personalization**

  Content personalization is a marketing strategy that adapts content to consumer preferences, needs, or behaviours. The goal is to create a relevant and immersive consumer experience, hoping to increase engagement and conversion. Content personalization can include various forms such as email, websites, advertisements, and product recommendations based on consumer data.

Indicators of content personalization consist of Content relevance, adjustment of consumer behaviour data usage, consumer satisfaction with Personalization, Consumer Engagement, sales conversion, and level of acceptance of personalization. The research instrument uses the Pappas et al. (2014) and Bleier & Eisenbeiss (2015) approaches.

- **Use of Chatbots**

  In marketing, chatbots refer to the interaction between customers and automated virtual agents (chatbots) designed to provide services, information, or support through digital platforms. Chatbots improve customer service efficiency, provide a more personalized user experience, and answer real-time questions. Indicators of chatbot use include interaction quality, ease of use, user satisfaction, problem-solving effectiveness, user engagement, trust in Chatbots, influence on purchasing decisions, and consumer engagement with brands. The research instrument uses the Huang & Rust (2018), Araujo (2018), Gnewuch, Morana, & Maedche (2017), and Xu, Liu, & Chen (2017) approaches.

B. Dependent Variables

- **Consumer Satisfaction**

  Consumer satisfaction is the happiness or contentment consumers feel after consuming a product or service. It is an emotional reaction when consumer expectations are met or exceeded. Consumer satisfaction can be temporary or fleeting, depending on their experience with a particular product or service at a specific time. Consumer satisfaction Indicators include Customer Retention, Word of Mouth (WOM), Spending and Willingness to Pay More, and Trust and Loyalty. The research instrument uses the approaches of Bharadwaj & Mitra (2020), Euromonitor International (2023), Irawan & Sugiyanto (2023), Sutrisno (2022), and Widodo & Ramdhani (2021).

- **Consumer Loyalty**

  Consumer loyalty refers to loyalty to a particular brand or e-commerce platform, manifested in repeat purchases or a strong preference for the product/brand. Consumer loyalty can be measured using a Likert scale that evaluates the frequency of repeat purchases, the intention to continue using the platform, and the tendency to recommend the platform to others. Indicators of consumer loyalty consist of Repeat Purchase Behavior, Positive Attitude towards the Brand (Attitudinal Loyalty), Willingness to Recommend, Consumer Satisfaction Level, and Willingness to Pay More. The research instrument uses McKinsey (2023) PwC. (2023), and Buhler et al. (2023) approaches.

Results and Discussion

Sample Description

The sample description in Table 1 describes the characteristics of the sample based on demographics, online shopping frequency, and level of understanding of AI technology.

Table 1. Validity and Reliability Test

Variables	Number of Indicators	Average Loading Factor	Cronbach's Alpha
Personalize content	6	0,82	0,84
Use of chatbots	6	0,75	0,86
Customer Satisfaction	5	0,72	0,88
Consumer Loyalty	5	0,70	0,82

Source: Processed primary data, 2025

All variables show good validity with an average loading factor above 0,6. This indicates that all variable indicators reflect the intended construct. The Cronbach's Alpha value for all variables is more than 0,7, indicating that the questionnaire is reliable. These results indicate consistency between items on a scale.

Normality Test

Table 2 below shows the normality test using the Shapiro-Wilk Statistic for larger samples (more than 50 respondents).

Table 2. Normality Test

Variables	Shapiro-Wilk Statistic	df	Sig. (p Value)
Personalize content	0,975	90	0,08
Use of chatbots	0,90	90	0,12
Customer Satisfaction	0,972	90	0,08
Consumer Loyalty	0,978	90	0,10

Source: Processed primary data, 2025

The p-value for all variables is> 0,05, which means that it is concluded that all variables are normally distributed, allowing parametric analysis to continue.

Model Fit Test

Tables 3 and 4 show the model suitability test, which consists of the F test and the following determination coefficient.

Table 3a. F-Test of Consumer Satisfaction

Models	Sum of Squares	df	Mean Square	F	Sig.
Regression	30,250	1	30,250	15,750	0,000
Residual	170,750	88	1,940		
Total	201,000	89			

Source: Processed primary data, 2025

Table 3b. F-Test of Consumer Loyalty

Models	Sum of Squares	df	Mean Square	F	Sig.
Regression	31,140	1	31,141	16,640	0,000
Residual	169,640	88	1,940		
Total	200,780	89			

Source: Processed primary data, 2025

The F test is used to test whether the regression model used as a whole is significant in explaining data variability. The F-count value in the consumer satisfaction model is 15,750 and p-value <0,05, while the consumer loyalty model is 16,640 and p-value <0,05, concluding that the overall regression model is significant in explaining data variability.

Table 4a. Consumer Satisfaction Determination Coefficient

Model	R	R^2	Adjusted R^2
1	0,787	0,619	0,610

Source: Processed primary data, 2025

Table 4b. Consumer Loyalty Determination Coefficient

Model	R	R^2	Adjusted R^2
1	0,796	0,634	0,625

Source: Processed primary data, 2025

The coefficient of determination (R2) measures how much of the variability of the dependent variable can be explained by the independent variables. An R^2 value close to 1 indicates that the model has good predictive ability, while a low R^2 value suggests that the model is less able to explain the variability of the data. In the consumer satisfaction model and the consumer loyalty model, each with an R^2 value = 0,619 and R^2 = 0,625, which means that 61,9% and 62,5% of the variability in consumer behaviour can be explained by AI-based marketing. While adjusted R^2 = 0,610 and adjusted R^2 = 0,625 correct R^2 for the number of predictors used in the model, indicating that about 61,0% and 62,5% of the variability in consumer behaviour is explained by the two independent variables (Content Personalization and Chatbot Usage) of the model after adjustment.

Hypothesis Testing

The hypothesis test results for the consumer satisfaction and loyalty models are in Tables 5a and 5b below.

Table 5a. Hypothesis Test-Consumer Satisfaction

Independent Variables	Regression Coefficient (B)	t-statistic	Sig. (p-value)
Content Personalization	0,350	3,80	0,004**
Use of Chatbots	0,220	2,10	0,037*
R-Square	0,619		
Adjusted R-Square	0,610		
F-statistic	15,750		0,000

Source: Processed primary data, 2025

Table 5b. Hypothesis Test-Consumer Loyalty

Independent Variables	Regression Coefficient (B)	t-statistic	Sig. (p-value)
Content Personalization	0,348	3,62	0,009**
Use of Chatbots	0,218	2,07	0,0471
R-Square	0,634		
Adjusted R-Square	0,625		
F-statistic	16,640		0,000

Source: Processed primary data, 2025
* Significant at the level 5% (p < 0,05)
** Significant at the level 1% (p < 0,01)

AI-based content personalization has a regression coefficient of 0,350, which means that if AI-based content personalization increases by 1 unit, consumer satisfaction will increase by 0,350 units. The p-value (0,004) <0,05, so **H1 is accepted**, meaning that AI-based content personalization significantly positively affects consumer satisfaction. The use of AI chatbots has a regression coefficient of 0,220, which means that if the use of AI Chatbots increases by 1 unit, consumer satisfaction will increase by 0,220 units. The p-value (0,037) <0,05, so **H2 is accepted**, meaning that the use of AI chatbots significantly positively affects consumer satisfaction.

AI-based content personalization has a regression coefficient of 0,348, which means that if AI-based content personalization increases by 1 unit, consumer satisfaction will increase by 0,348 units. The p-value (0,009) <0,05, so **H3 is accepted**, meaning that AI-based content personalization significantly positively affects consumer loyalty. The use of AI chatbots has a regression coefficient of 0,218, which means that if the use of AI Chatbots increases by 1 unit, consumer satisfaction will increase by 0,218 units. The p-value (0,0471) <0,05, so **H4 is accepted**, meaning that the use of AI chatbots significantly positively affects consumer loyalty.

Discussion

The results of hypothesis 1 show that AI-based content personalization has a significant positive effect on consumer satisfaction. **These findings** demonstrate that AI-based content personalization offers tangible benefits, including displaying products that match personal preferences and simplifying the search process, thereby increasing consumer satisfaction. With AI technology that can provide personalized content that is easy to use because of automation and direct recommendations without having to browse through many irrelevant options. When these needs and desires are met through recommendations for the right products or services, consumers feel more satisfied because the products presented align with expectations. The more efficient and enjoyable purchasing process will increase the likelihood of consumers feeling satisfied. Moreover, when consumers feel that the platform or brand knows they can provide appropriate recommendations, this creates a positive emotional bond, affecting overall satisfaction.

The presence of AI-based content personalization increases consumer engagement, as it allows for more relevant interactions between consumers and e-commerce platforms. With this interaction, consumers feel they are getting an experience that suits their preferences, which creates greater engagement with the brand or platform, so they will remain loyal to the platform, increasing long-term loyalty and satisfaction. This increased engagement further strengthens the consumer's relationship with the platform, improving

satisfaction. The presence of technology is perceived as useful, easy to use, and provides an emotionally and functionally relevant experience, thus making consumer satisfaction in e-commerce, as described by TAM, consumer behaviour theory, and consumer engagement theory.

This finding supports the SOR theory that AI-based content personalization acts as a stimulus that affects the psychological condition of consumers (organisms), which in turn produces a positive response in the form of consumer satisfaction (response). This means that the stimulus from the platform (AI-based personalization) affects the psychological condition (satisfaction) of consumers, which ultimately results in a positive evaluation of the consumer experience.

The results of hypothesis 2 show that the use of AI-based chatbots has a significant positive effect on consumer satisfaction. These results prove that AI-based chatbots provide substantial benefits, such as fast and accurate responses to questions, available customer support, and direct solutions to problems or requests for information. The benefits felt help consumers resolve issues faster, contributing to increased satisfaction. AI-based chatbots are easy to use, with intuitive interfaces and the ability to communicate in natural language. This convenience reduces the barriers consumers face when interacting with the platform. When consumers feel that the chatbot is easy to use and useful, they are satisfied with the overall experience because they get quick answers and assistance when shopping online. AI-based chatbots have been shown to minimize waiting time and offer solutions instantly. This situation is related to the theory of consumer behaviour, which states that a more efficient and satisfying purchasing experience will positively impact consumer satisfaction levels. AI-based chatbots that can understand and respond to questions personally can create a positive emotional connection with consumers. When consumers feel understood and well served, they tend to feel satisfied and return to use the service.

AI-based chatbots enable more personalized, proactive, and personalized interactions. Consumers feel more engaged because they receive personalized experiences, such as product recommendations or solutions directly relevant to their problems. When consumers think of adequate attention through AI technology, emotional engagement and satisfaction increase, ultimately increasing consumer loyalty to the brand or platform. The presence of AI-based chatbots allows for ongoing interactions, even outside of human operating hours. This ensures that consumers can always engage with the brand or platform whenever they need service or information, creating a consistent, ongoing experience that strengthens satisfaction.

This finding supports the SOR theory that consumer satisfaction is reflected in the stimulus cycle (AI chatbot) that affects psychological conditions (consumer satisfaction), which ultimately results in a positive response in the form of consumer evaluation and loyalty. This means that the stimulus (AI chatbot) affects the consumer's internal condition (satisfaction), which ultimately results in a positive response in the form of better consumer evaluation of their experience.

The results of hypothesis 3 show that AI-based content personalization significantly positively affects consumer loyalty. These findings suggest that stimuli provided by AI can influence consumers' psychological states and generate loyal behavior. AI-based content personalization provides relevant and tailored experiences to consumers' preferences. This is an external stimulus designed to increase consumer engagement. These stimuli influence consumers' psychological states, creating **emotional engagement**, **trust**, and **satisfaction** — psychological factors that drive consumer loyalty. Positive psychological states have been

shown to lead to **consumer loyalty**, which is reflected in repeat purchases, long-term commitment, and digital advocacy (e-WOM).

Personalized content that matches consumers' preferences meets their expectations better than generic content. When consumers are consistently satisfied because product or service recommendations match their preferences, it creates a sense of trust and engagement with the platform, leading to long-term loyalty. Personalized content makes it easier for consumers to choose according to their wishes. This convenience strengthens the relationship between consumers and the platform, thereby increasing repeat purchases/increasing loyalty. Personalized content creates experiences that feel more personal and relevant, which positively impacts consumer emotions. When consumers feel that the platform understands their preferences, it makes a deeper emotional connection with the brand, directly impacting consumer loyalty. Consumer engagement theory focuses on how deeper and more ongoing consumer interactions can increase loyalty. With AI that can personalize content, consumers feel more connected to the platform because the shopping experience becomes more relevant and personal, strengthening loyalty by making them interact more. Consumer engagement is not just about momentary interactions but also about building long-term relationships. These positive and repeated experiences foster ongoing engagement, which ultimately strengthens loyalty. Consumers who feel that AI-based content personalization provides added value, such as a more efficient and relevant shopping experience, will be more engaged with the platform. Loyalty grows because consumers feel they are getting more than just a commercial transaction; they get an experience that suits their needs and preferences.

These findings support the SOR theory, which suggests that content personalization acts as a stimulus that triggers favorable psychological conditions in consumers, resulting in loyal behavior, including repeat purchases, long-term commitment, and advocacy for the platform.

The results of hypothesis 4 show that using AI-based chatbots significantly positively affects consumer satisfaction. These results indicate that AI-based chatbots provide substantial consumer benefits, such as fast responses, customer service, and immediate solutions to questions or problems. These benefits improve the consumer experience, making them feel valued and supported, ultimately strengthening loyalty. When consumers feel that chatbots help effectively, they tend to stick with the platform or brand that provides the chatbot service. Easy-to-use AI chatbots, with simple interfaces and the ability to communicate in natural language, reduce the effort required for consumers to get help or information. When technology feels easy and convenient, consumers tend to use it more often, which creates a positive ongoing relationship with the platform and leads to increased loyalty.

The use of AI-based chatbots helps meet consumer expectations for fast and responsive service, so consumers tend to feel satisfied, which increases loyalty to the brand or platform. Loyalty arises from long-term satisfaction driven by positive experiences. AI-based chatbots can speed up consumer interactions with the platform, such as processing information requests or resolving issues quickly. This efficiency makes consumers feel that their time and effort are valued, which results in a smooth user experience and encourages continued use of the platform. When consumers think they understand and are well-served by the chatbot, it creates a positive emotional connection, which increases long-term loyalty to the brand or platform.

AI-based chatbots create fast, precise, and relevant interactions. This engagement strengthens loyalty because consumers feel heard and well-served by the platform. Consumers can interact with the platform anytime, even outside operating hours. This continuity provides convenience and increases ongoing engagement, which makes consumers more likely to be loyal to the platform because the service is always available. Continuous engagement with AI-based chatbots creates a consistent experience for consumers. When chatbots can provide relevant and personalized assistance repeatedly, consumers will feel comfortable using the service, increasing long-term loyalty.

These findings support the SOR theory, which suggests that fast, efficient, and relevant chatbot services influence **consumers' psychological state (satisfaction)**, resulting in **positive responses** in the form of good evaluations of the platform and a more satisfying shopping experience.

Considering all the results of the hypothesis, it is concluded that the influence of content personalization is greater than that of chatbots. This condition indicates that e-commerce consumers respond more to visual aspects and passive personalization than to active interactions. This finding aligns with the research of Gao and Liu (2023) on the role of content relevance in forming consumer emotional attachment.

Conclusions

Concluding the significant influence of AI-based marketing on consumer behavior in e-commerce. AI has been shown to play a crucial role in influencing consumer satisfaction and loyalty. The resulting implementation is that e-commerce industry players will further integrate AI into their marketing strategies to increase marketing effectiveness and enhance customer satisfaction and loyalty. The limitations of this study are that it can only explain the purchasing decision model moderately. The data used in the study are limited to specific platforms or geographic areas, which can affect the study's results and the generalizability to other platforms or regions. The dynamics of AI technology are developing rapidly, so the results of this study are only relevant for a specific period. However, the effectiveness of AI in marketing can change with technological advances and updates to the algorithms used. This study does not fully consider other external factors that can affect consumer satisfaction and loyalty, such as market trends, economic changes, or socio-cultural factors. The measurement of consumer behavior in this study may be based on specific indicators that do not encompass all aspects of behavior, such as emotional or subjective factors that are difficult to quantify. This study focuses on the role of AI in marketing; therefore, the limitations of AI technology itself, such as algorithm bias or deficiencies in predictive ability, may not have been thoroughly examined. Survey results or consumer behavior data are heavily influenced by respondent bias, meaning that consumers may not consistently respond to AI-based marketing techniques or provide answers influenced by personal experiences or perceptions. Another limitation of perception-based measurement instruments is that momentary experiences or social biases can affect their results. The use of cross-sectional data does not allow for longitudinal testing of behavioral change dynamics.

Some recommendations for business actors need to (1) increase investment in AI technology to personalize consumer experiences, (2) ensure data transparency and security to build consumer trust, and (3) optimize the use of chatbots by increasing interaction capabilities and responsiveness. Meanwhile, recommendations for further

research need to (1) conduct qualitative studies to gain a deeper understanding of consumer perceptions, (2) explore the influence of AI in other industrial sectors besides e-commerce, (3) examine the long-term impact of AI use on consumer loyalty and retention, and (4) examine other aspects of AI in marketing, such as its impact on consumer privacy or differences in the influence of AI based on demographic segments.

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