The Role Of Artificial Intelligence (AI) In Digital Marketing : How Personalization Of Content Has Implications For Purchase Intention In Ecommerce

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ABSTRACT

In the last few decades, technology has grown exponentially, especially in the field of marketing. Artificial Intelligence (AI) is a technology that has a role in improving digital marketing performance. AI is able to personalize the content displayed to customers as a result of the process of receiving data and processing it to be able to provide recommendations. This study aims to identify the role of Artificial Intelligence in digital marketing through personalized content so that it has an impact on purchase intentions in social commerce. Based on data from social media users, this study was evaluated using Structural Equation Modeling (SEM) equations. Our findings from both methods confirm that perceived value shows a significant and positive influence on customer purchase intentions. This research has academic implications regarding the importance of Artificial Intelligence becoming a key domain in the field of digital marketing. And practical implications that will benefit social commerce marketers in Indonesia.

Keywords: Artificial Intelligence, Digital Marketing, Perceived Value, Purchase Intention

1. Introduction

Over the past few years, the online market has experienced significant growth and has transformed the landscape of business activities. This growth can be attributed to advancements in technology, specifically the rise of e-commerce platforms. These platforms have allowed businesses to expand their reach and tap into a global customer base.

As a result, digital marketing strategies have become essential for businesses to thrive in the online marketplace (García et al., 2020). One key aspect of digital marketing is the personalization of content, which aims to tailor marketing messages and offerings to individual consumers. Personalization of content has become increasingly important in digital marketing due to its potential implications for consumer purchase intention (Tran,2022). Based on previous research, there is evident that artificial intelligence plays a crucial role in enhancing digital marketing strategies.

AI technologies can effectively monitor consumer behaviour in the digital realm, providing marketers with valuable insights and enabling the development of personalized customer databases (Bag et al., 2021). These databases can contain information such as browsing history, purchase behaviour, and preferences, which can be used to create targeted marketing campaigns. AI technology has been widely applied in various online shopping platforms to provide consumers with more accurate and personalized services Journal of Business and Management Studies, 2020).

This research aims to examine the role of artificial intelligence in digital marketing and its implications for purchase intention in the e-commerce industry, with a specific focus on the personalization of content. By understanding how AI technology impacts the way businesses engage with consumers and drive purchase intention, this research seeks to contribute to the existing literature on digital marketing and its relationship with AI. Previous studies have shown that there is a positive relationship between the use of AI technology in online shopping platforms and consumers' purchase intention (Yin,2021).

This study builds upon these findings by investigating how the personalization of content through AI technologies influences purchase intention in the e-commerce industry, specifically in the Shopee marketplace. The Shopee marketplace was chosen as the focus of this study due to its prominence in the Indonesian e-commerce market, which has seen rapid growth in recent years. The study utilizes a quantitative research method, employing a questionnaire to collect data from a sample size of 100 individuals. The data collected will be analyze using SmartPLS 3.0, a statistical analysis software, to examine the relationships between artificial intelligence, digital marketing, purchase intention, and perceived value.

2. Literature Review

2.1. Purchase Intention

Purchase intention refers to the consumers desire and plan to purchase goods or services based on factors such as their previous experience, desires, and the perceived value of the product or service (Journal of Business and Management Studies, 2020. It is an important construct in consumer behaviour research as it provides insights into consumers likelihood of making a purchase and can be used to predict actual purchasing behaviour.

Several studies have explored the factors influencing purchase intention in the context of e-commerce. For instance, (Chen, H 2012) found that trust, perceived value, and website quality significantly influence purchase intention in the e-commerce industry. Similarly, (Lena,2022)

found that factors such as perceived usefulness, perceived ease of use, and trust have a positive impact on purchase intention in online shopping platforms.

2.2. Artificial Intelligence

Artificial intelligence is an area of computer science that focuses on developing intelligent machines capable of performing tasks that would typically require human intelligence. These tasks can include learning, problem-solving, language comprehension, and logical reasoning. In the context of digital marketing, artificial intelligence has been increasingly utilized to enhance customer experience and personalize content.

AI algorithms analyze customer data, such as browsing history, purchase behaviour, and demographics, to understand individual preferences and deliver personalized recommendations and advertisements.(Jay, 2023)

2.3.Digital Marketing

Digital marketing utilizes the internet and other interactive technologies to create and connect information between companies and identified consumers. Digital marketing encompasses a range of tactics and strategies, such as search engine optimization, social media marketing, email marketing, content marketing, and online advertising(Rodrigues & Martinez, 2020).

It aims to reach and engage with consumers in a more targeted and personalized way compared to traditional marketing methods. Digital marketing has become crucial in the modern business landscape due to its ability to reach a wider audience, generate leads, and drive conversions.

2.4.Perceived Value

Perceived value refers to the customer's perception of the overall worth or benefit they expect to receive from a product or service. It is a subjective evaluation that consumers make based on their expectations and the perceived benefits they believe they will gain. Perceived value is influenced by various factors, including the product's quality, price, social value, and emotional value. Consumers weigh the perceived benefits, such as quality, functionality, aesthetics, and social status associated with a product or service, against the perceived costs such as monetary price, time investment, and effort required to obtain it.

In the context of AI-driven digital marketing, perceived value plays a crucial role in shaping consumers' purchase intention in e-commerce (Febriani et al., 2022). Previous research has shown that perceived value has a positive and significant impact on purchase intention in e-commerce (Journal of Business and Management Studies, 2020).

Figure 1. Research Model
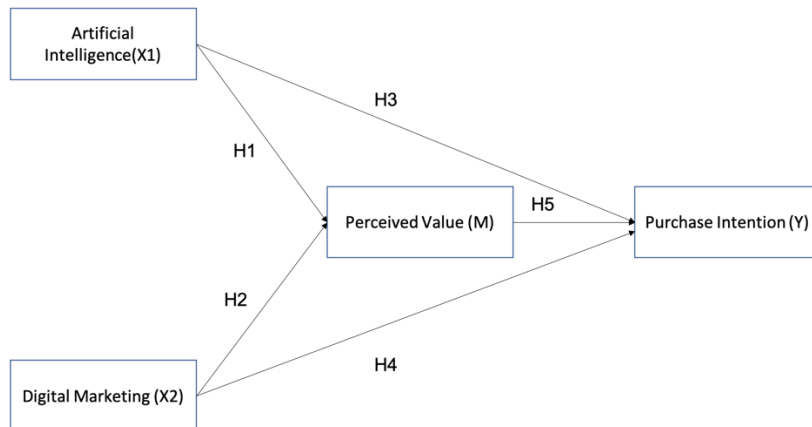
3. Research Methodology

The research method employed in this study is quantitative, using a questionnaire as the data collection method. The questionnaire consisted of questions that were designed to measure variables such as artificial intelligence, digital marketing, purchase intention, and perceived value. The study used purposive sampling to select the sample population, specifically university students who had made an online purchase on the Shopee marketplace. The sample size for this study was determined to be 100 individuals, with the aim of obtaining a representative sample of the target population.

The data collected from the questionnaire will be analyzed using SmartPLS 4.0, a statistical analysis software commonly used in structural equation modelling. This software will allow for the examination of the relationships between artificial intelligence, digital marketing, purchase intention, and perceived value. Structural equation modelling will be used to test the proposed research model and hypotheses. The findings of this study will provide insights into the role of artificial intelligence in digital marketing and its implications for purchase intention in the e-commerce industry.
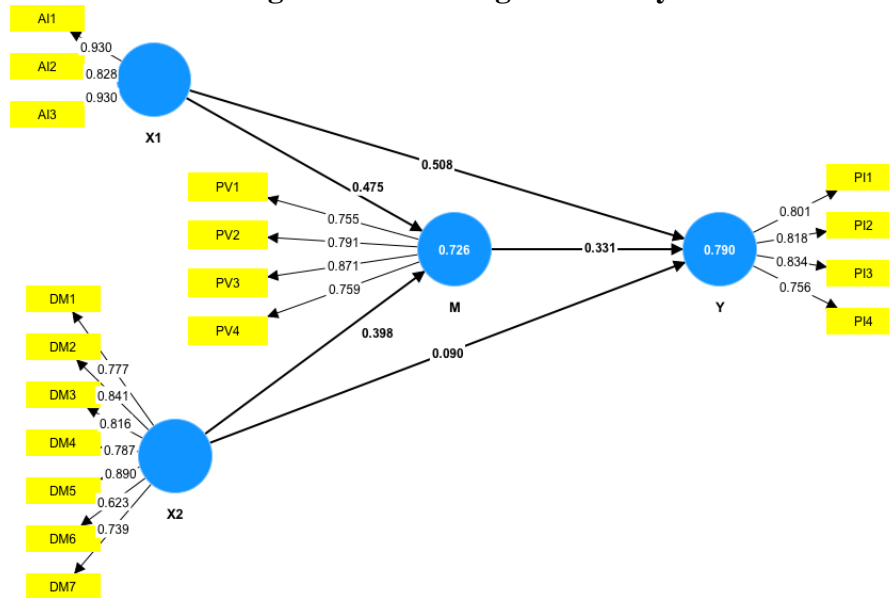
4. Result
4.1. Data Analysis Technique
    a. PLS Outer Model Test Result
In this study, the test results are assisted with the help of software Smart PLS version 3.0; the complete model can be presented in the following Figure :
    i. Convergent Validity

Figure 4.2. Convergent Validity

Tabel 4.1 Outer Model

Variable	Indicator	Outer Loading	Notes
Artificial Intelligence	P1	0,930	Valid
	P2	0,828	Valid
	P3	0,930	Valid
Digital Marketing	P4	0,777	Valid
	P5	0,841	Valid
	P6	0,816	Valid
	P7	0,787	Valid
	P8	0,890	Valid
	P9	0,623	Not Valid
Perceived Value	P10	0,739	Valid
	P11	0,801	Valid
	P12	0,818	Valid
	P13	0,834	Valid
Purchase Intention	P14	0,756	Valid
	P15	0,755	Valid
	P16	0,791	Valid
	P17	0,871	Valid

To test convergent validity, use Outer value loading or loading factor. The reflective measure or criteria in this test with an outer. Value loading >0,70. Based on Table 1, not all statement items proved valid.

ii.   Discriminant Validity

Tabel 4.2 Cross Loading

Indicator	Average Variant Extracted (AVE)	Notes
Artificial Intelligence (X1)	0.633	Reliable
Digital Marketing (X2)	0.805	Reliable
Perceived Value (Y)	0.617	Reliable
Perceived Value (M)	0.644	Reliable

Discriminant validity is to compare the value of the square root of average variance extracted (AVE) for each construct with a correlation between other constructs in the model; if the square root of average variance extracted (AVE) construct is greater than the correlation with all other constructs, then it is said has good discriminant validity. According to Ghozali (2015), discriminant validity is declared valid if the AVE value is > 0.05; based on the table above, the Average value Variance Extracted (AVE) shows the value > 0.5. Therefore each variable is declared valid

iii.   Composite Reliability and Cronbach's Alpha

Tabel 4.3 Reliability

Indicator	Cronbach's Alpha	Composite Reliability	Notes
Artificial Intelligence (X1)	0.805	0.818	Reliable
Digital Marketing (X2)	0.879	0.899	Reliable
Perceived Value (Y)	0.895	0.910	Reliable
Perceived Value (M)	0.816	0.817	Reliable

Based on table 4.9. on shows that each variable's composite reliability shows the construct's value> 0.60. These results indicate that each variable has met the composite reliability, so it can be concluded that all variables have a high level of reality. Furthermore, in the table above, Cronbach's alpha for each variable shows a constructed value > 0.70; thus, these results indicate that each research variable has met the requirements of Cronbach's value alpha, so it can be concluded that all variables have a high level of reliability.

iv.   Multicollinearity Test

Tabel 4.4 VIF

Indicator	M	Y	Notes
Artficial Intelligence	5.450	6.275	Multicollinearity Free
Digital Marketing	5.450	6.027	Multicollinearity Free
Perceived Value		3.647	Multicollinearity Free

The multicollinearity test determines the multicollinearity between variables by looking at the correlation value between independent variables. The criteria that apply in the multicollinearity test is if the VIF (Variance Inflation Factor) value <10, which means the regression model is free from multicollinearity (Ghozali, 2015).

b.   Structural Model or Inner Model

The inner model measures how the causal relationship between latent variables that make up the model. Also known as the inner relation, describes the relationship between latent variables based

on the substantive theory of research. The coefficient of Determination (R2) and Goodness Test (Goodness of Fit) were used to evaluate this model.

    i.   R- Square

The value of R - squared (R2) is used to calculate the degree of independent variation of the dependent variable. The higher the R2 value, the better the prediction model of the research model (Abdillah et al., 2015). If R2 is greater than 0.7, the model is significant (strong)

Tabel 4.5 R Square

Indicator	Q Square
Purchase Intention	0.790
Perceived Value	0,726

Table 4.5 above shows that the value of R Square for the Perceived variable Value (M) is 0.726. These gains explain that the Perceived Value (M) percentage is 72.6%. This means that artificial intelligence intelligence and digital marketing impact Perceived Value (M) is 72.6 percent, and other variables influence the remaining 30.9%. Meanwhile, the value of R Square for variable purchase intention (Y) is 0.790. The acquisition explains that the percentage of the purchase intention was 79 percent. This means that the variable artificial intelligence, digital marketing, and perceived value against purchase intention is 79 %, and other variables influence the remaining 23.1%.

    ii.   Q Square

The goodness-of-fit test was carried out to evaluate the measurement model and the structural model and to provide simple measurements for the prediction of the overall model (Ghozali, 2015). The following are the results of the Q-square analysis:

Table 4.6 Q Square

| Indicator	Q Square
Purchase Intention	0.725
Perceived Value	0,691

Table 4.6 Q square value greater than 0 indicates that the model is predictively relevant.

    c.   Hypothesis Testing

Hypothesis testing in this study was carried out by looking at t statistics and P-Value. The t-test aims to partially determine how much influence the independent variable has on the dependent variable

i. Direct Effect

Figure 4.3. Inner Model
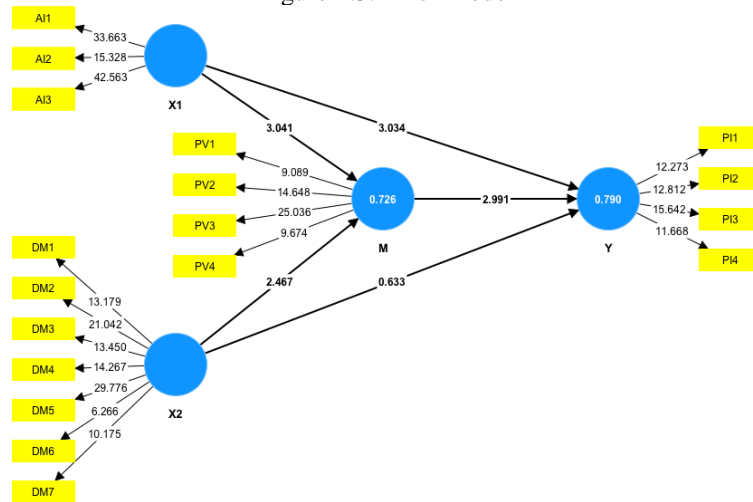
The direct effect uses the t-test, which aims to determine the effect of the variable partially independent of the dependent variable. This hypothesis can be accepted if P Values <0.05. The hypothesis is accepted that the independent variable significantly affects the dependent variable (Effendi et al., 2019).

Table 4.7 Direct Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Original Sample (O)	Information
Artificial Intelligence (X1) -> Perceived Value (M)	0.475	0.496	0.156	3.041	0.002	0.475	Significant
Artificial Intelligence (X1) -> Purchase Intention (Y)	0.666	0.690	0.171	3.900	0.000	0.666	Significant
Digital Marketing (X2) -> Perceived Value (M)	0.398	0.383	0.161	2.467	0.014	0.398	Significant
Digital Marketing (X2) -> Purchase Intention (Y)	0.222	0.203	0.177	1.257	0.209	0.222	Not Significant
Perceived Value (M) -> Purchase Intention (Y)	0.331	0.332	0.111	2.991	0.003	0.331	Significant

Based on the table above, it shows that of the five hypotheses that have a direct effect, there is one hypothesis that is rejected, namely Digital Marketing to Purchase Intention due to the value of T-Statistics < 1.96 and P - Values > 0.05 while the other four hypotheses are accepted because the T - Statistics value > 1.96 P -Values < 0.05.

ii.   Indirect Effect

Table Indirect Effect

Table 4.8 Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Information
Artificial Intelligence (X1) -> Purchase Intention (Y)	0.157	0.157	0.058	2.719	0.007	Significant
Digital Marketing (X2) -> Purchase Intention (Y)	0.132	0.136	0.083	1.593	0.111	Not Significant

Based on the table above, it shows that from the relationship that has an indirect effect, there is 1 (one) hypothesis that is rejected, namely Digital Marketing to Purchase intention mediated by Perceived value because the value of T-Statistics < 1.96 and P - Values > 0.05 while 1 (one) other hypothesis is accepted because the value of T - Statistics > 1.96 P -Values < 0.05.

5. Discussion

In this section, we will elucidate the outcomes derived from the research analysis. The primary objective of this study is to discern the key factors influencing consumers' intentions to make purchases on Shopee. Two specific variables, namely artificial intelligence (X1) and digital marketing (X2), have been employed to assess their impact on purchase intentions, as outlined in the previous chapter. Additionally, we have investigated the mediating influence of perceived value (M). The study's findings reveal the following: Seven hypotheses were formulated and tested through Structural Equation Modeling (SEM), facilitated by Smart PLS 4.0 software.

Initially, the demographic features of the participants are encapsulated through descriptive statistics. Predominantly, the respondents in this study were women aged between 20 and 35 years, and a significant portion reported a monthly income ranging from IDR 500,000 to IDR 5,000,000. Regarding Shopee usage, the majority of respondents had utilized the marketplace more than five times, displaying a shopping frequency of once a month.

Secondly, the findings of the initial hypothesis in this study validate that artificial intelligence indeed influences perceived values. According to the obtained results, artificial intelligence demonstrates a statistically significant positive impact on perceived value, confirming the approval of this hypothesis. These study results align with the research conducted by Yin and Qiu in 2021, which asserts that the application of Jing dong AI robot technology can contribute to the automation of consumer feedback management. The research suggests that AI-driven dynamic analysis aids marketers in more effectively responding to consumers, enhancing

services for robotic customers on e-commerce platforms with increased intelligence, thereby fostering an improved consumer value experience in online shopping.

Thirdly, the outcomes of the second hypothesis in this study indicate that digital marketing has a negative and statistically insignificant impact on perceived values. In other words, an increase in digital marketing efforts does not result in a corresponding increase in perceived value. The results demonstrate that digital marketing fails to show a significant influence on perceived value, leading to the rejection of this hypothesis. This finding is consistent with Reynaldi (2023), which highlights that while digital marketing is instrumental in promoting and marketing products and services, it is limited by communication methods and distance. According to their study, digital marketing exhibits a negative impact on perceived value, suggesting that it has a minimal effect on consumers' overall perceived value.

Fourth, the findings of this study's third hypothesis demonstrate that artificial intelligence significantly and favorably affects purchase intention. Purchase Intentions will rise with larger artificial intelligence. This hypothesis is accepted since the data show that artificial intelligence has a strong beneficial impact on purchase intention. It was discovered that artificial intelligence was successful in researching automated driving technologies included in the world of transportation, significantly reducing the number of accidents caused by human error and traffic congestion. This finding was supported by recent research that supports the impact of artificial intelligence on consumer purchase intentions. Purchase intentions are positive and rising, according to a 2015 poll (Shin et al., 2019).

Fifth, this study's findings supporting the fourth hypothesis show that purchase intention is significantly and favorably impacted by digital marketing. This hypothesis is disproved by the data from digital marketing, which shows that there is a positive and significant influence on Purchase Intention. This is in line with Albi's (2020) research, which asserts that consumers' purchase intentions are influenced by digital marketing, that consumers are motivated to purchase products as a result of the company's digital marketing efforts, and that consumers believe digital marketing is more appealing, easier to find, and more informative when describing products.

Sixth, this study's findings supporting the fifth hypothesis show that perceived value influences purchase intentions in a favorable and significant way. Based on the findings, it is agreed that perceived value has a positive and significant impact on purchase intention. Consumers' expectations, knowledge, and experiences all influence how valuable something is to them. Customers will compare the perceived value of a product to the costs incurred to obtain it. Consumers compare the service and pricing features of rival items using perceived value. Consumer purchase intentions are influenced by a product's high perceived value (Yeh et al., 2011).

Seventh, the findings of the sixth hypothesis in this study show that perceived values play a role in mediating the impact of artificial intelligence on purchase intention. This idea is disproved based on the findings of artificial intelligence, which show that influence on purchase intention is caused by perceived value. Although it cannot be employed directly, artificial intelligence is a type of technology that is frequently used in online shopping

platforms to assist businesses in growing their sales volume. In order to determine their intentions and behavior when making purchases online, consumers must identify the emotions that make various services and favors valuable to them, such as costs and experiences (Ding & Wang, 2019).

Eighth, the findings of the seventh hypothesis in this study demonstrate that perceived value, a mediator of the impact of digital marketing on purchase intention, has a favorable and significant effect on this behavior. This hypothesis is accepted as a result of the studies showing that artificial intelligence significantly improves Purchase Intention through perceived value. With digital marketing and a higher level of involvement on digital platforms, consumers' opinions of the value of a good or service grow (Ceyhan, 2019). Function, hedonic value, social value, and self-brand image are the four components of perceived value in study. Through digital platforms, it has been discovered that hedonic value and functional value boost purchase intent. By improving the perceived worth of the product to the customer, marketers build social media ads to boost sales. Because it offers these benefits, digital marketing has a favorable effect on brand value.

6. Conclusion

The following conclusions can be made in light of the problem formulation analysis, study findings, and hypotheses: First, perceived value is unaffected by artificial intelligence. Second, perceived value is positively and significantly impacted by digital marketing. Third, buying intention is significantly and favorably impacted by artificial intelligence. Fourth, purchase intention is not significantly and favorably impacted by digital marketing. Fifth, buying intention is positively and significantly impacted by perceived value. Sixth, the influence of perceived value on purchase intention is unaffected by artificial intelligence. Finally, purchase intention is positively and considerably impacted by digital marketing, which is mediated through perceived value.

This study's shortcoming is its scant mention of certain components or factors after it has been finished. If there are more references for each piece or variable, the research will be easier to compile. Research samples from the Purwokerto area and other towns and regions in Indonesia can be used to increase the impact of artificial intelligence and digital marketing on purchase intention in future studies

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