

The Role of Information Technology in Explaining the Impact of Artificial Intelligence on Enhancing the User Experience of Generation Z Social Media Users in Semarang City

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ABSTRACT

The rapid adoption of e-commerce and interactive technologies has transformed digital marketing, making user experience (UX) a critical competitive differentiator. For Generation Z—a digitally native demographic—social media platforms are central to shopping and brand interaction. This research aims to explain the role of information technology in mediating the impact of artificial intelligence on enhancing user experience among Generation Z social media users in Semarang City. The research employs a quantitative approach with an explanatory research method, involving 200 respondents from Generation Z who are active users of the Shopee e-commerce platform. Data were collected through online questionnaires and analyzed using the Partial Least Squares (PLS 4.0) method. The results of the study show that artificial intelligence has a positive and significant effect on user experience in social media. Artificial intelligence has a positive and significant effect on augmented reality. Artificial intelligence has a positive and significant effect on virtual influencers. Artificial intelligence has a positive and significant effect on chatbots. Augmented reality has a positive and significant effect on user experience in social media. Virtual influencers have a positive and significant effect on user experience in social media. Chatbots have a positive and significant effect on user experience in social media.

KEYWORDS



Artificial Intelligence, User Experience in Social Media, Augmented Reality, Virtual Influencers, Chatbots, Generation Z

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INTRODUCTION

In the modern era, technological developments have experienced rapid progress and have had a significant impact on various fields, including the business world. The latest data from the Indonesian Internet Service Providers Association (APJII) in 2024 shows that as many as 221.5 million Indonesians (or around 80% of the total population of 278.7 million in 2023) will be connected to the internet. This figure increased by 1.4% from the previous year, confirming the internet as a key infrastructure in the digital transformation of society (Alibekova et al., 2020; Khitskov et al., 2017; Liebowitz, 2024; Voskresenskaya et al., 2019). Interestingly, the dominance of internet users is occupied by Generation Z (34.40%) and Millennials (30.62%), the two generations most adaptive to technology and the main drivers of changes in consumer behavior.

Their tendency to access information digitally and transact quickly and practically has shifted conventional shopping habits (Alzubi, 2023; Audry & Navila, 2023; Radzikhovska, 2021). This phenomenon is driving massive business transformation. Now the internet is not just a means of communication but has evolved to be an integral part of people's life cycles, including shopping activities. Consumers prefer to browse products online, compare prices, and complete transactions in a few clicks instead of visiting physical stores like in the previous

era. Adaptation to digital consumption patterns is the key to business survival amid increasingly competitive market dynamics.

This major change in people's shopping habits became more evident after the Covid-19 pandemic, where online shopping grew increasingly popular, with Generation Z as the largest contributor to this growth. The Digital Technasia 2024 report from We Are Social and Meltwater states that 56.2% of internet users in Indonesia are active in online shopping, ranking Indonesia 9th in the world for online shopping—equivalent to India. This fact is further strengthened by the rapid growth of local e-commerce platforms such as Shopee, Tokopedia, Lazada, Blibli, and Bukalapak, as well as the presence of shopping features on social media such as TikTok Shop. According to the Indonesia Gen Z Report 2024 by the IDN Research Institute, 72% of Generation Z choose Shopee as their main platform, followed by Tokopedia (12%) and TikTok Shop (11%), with a unique user distribution: Shopee is dominated by women, while Tokopedia is more used by men.

From the data, Shopee has succeeded in becoming the leading e-commerce platform compared to others. Shopee is an e-commerce platform owned by SEA Group, headquartered in Singapore. Founded in 2009 by Forrest Li, Shopee was first launched in Singapore in 2015 and then expanded to various countries such as Malaysia, Thailand, Taiwan, Indonesia, Vietnam, and the Philippines. In Indonesia, Shopee has officially been operating since December 2015. This platform actively carries out various marketing strategies, such as promo programs, attractive campaigns, and special offers to attract users' interest (Putri, 2024).

The development of digital technology has significantly changed the business landscape, requiring businesses to adapt to more modern and technology-based marketing strategies. In this era, digital marketing strategies are very important because they allow companies to strengthen their brand image, reach a wider market, and build closer relationships with consumers, especially the younger generation who dominate the e-commerce market. One of the main innovations in digital marketing is the application of Artificial Intelligence (AI), which is able to revolutionize human interaction and technology by creating a more personalized, efficient, and relevant User Experience. AI plays an important role in helping businesses understand consumer behavior through big data analysis from social media, online searches, and other digital activities, so companies can tailor products and services according to market needs (Thilagavathy & Praveen Kumar, 2021; Mahesa & Muhamad, 2024).

In the context of modern digital marketing, the adoption of Artificial Intelligence has become an industry standard due to its ability to manage large-scale data, provide personalized services, and support fast and accurate decision-making (Chen et al., 2019). The integration of AI with interactive technologies such as Augmented Reality (AR), Virtual Influencers, and Chatbots has opened up new opportunities for immersive and adaptive marketing strategies. AI and AR collaboration, for example, allows the creation of interactive visual experiences such as virtual try-on features that let users try products virtually before purchasing (Aditia & Rafinita, 2024; Hapsari & AW, 2024). Meanwhile, AI-based Virtual Influencers can simulate human interactions realistically, establish emotional connections with audiences, and become effective communication tools in building brand loyalty (Jin et al., 2020; Radianti et al., 2021). In addition, Chatbots act as virtual assistants providing fast, accurate, and personalized responses, thereby increasing customer service satisfaction and efficiency (Gupta et al., 2022).

The presence of AI-based Chatbots is now predicted to be the key to future e-commerce development because they provide a practical and enjoyable shopping experience (K. Prasad et al., 2024). In this context, User Experience is a central aspect that reflects the results of user interaction with technologies such as AI, AR, Virtual Influencers, and Chatbots, measured through satisfaction, engagement, and loyalty (Hassenzahl, 2003; Lee et al., 2019). However, research related to the application of AI in developing countries such as Indonesia, especially in Semarang City, is still very limited (Omeish et al., 2024). Generation Z in Semarang, as a digital native generation, has unique social media interaction characteristics and requires a more adaptive marketing approach. Based on this research gap, the research aims to analyze the relationship between AI and interactive technology on User Experience, as well as provide theoretical and practical contributions to digital marketing strategies that are more effective, personalized, and aligned with the younger generation's behavior in the era of digital transformation.

The benefits of this research are twofold. Theoretically, it aims to enrich the literature on Human-Computer Interaction (HCI) and the Technology Acceptance Model (TAM) by providing empirical evidence on how AI-driven technologies collectively enhance user experience within a specific demographic and regional context. Practically, the findings are expected to offer actionable insights for e-commerce platforms and digital marketers—particularly Shopee—to design more effective, engaging, and personalized user interfaces and marketing campaigns that resonate with Generation Z, ultimately fostering greater user satisfaction, loyalty, and competitive advantage.

METHOD

This study employed explanatory research to examine the relationships between the independent variable, Artificial Intelligence (AI), and the dependent variables: Augmented Reality, Virtual Influencers, Chatbots, and User Experience on social media. Primary data were collected directly from respondents through questionnaires, while secondary data were sourced from scientific books, journals, and relevant articles. Data collection was conducted using a digital questionnaire (Google Form) containing both closed- and open-ended questions for practicality and efficiency.

The sampling technique used was purposive sampling, selecting Generation Z users in Semarang City who actively used Shopee e-commerce. The sample size consisted of 200 respondents, determined using the Lemeshow formula due to the uncertain population size.

Data analysis was performed using the Partial Least Square (PLS) method with Smart PLS software. This method was chosen because it can analyze complex relationships between variables with small samples, non-normal data, and multicollinearity issues. The analysis included two models: the measurement model (outer model) evaluated by convergent validity, discriminant validity, and composite reliability, and the structural model (inner model) assessed through R-Square, Q-Square, and t-value tests to determine hypothesis significance. A descriptive statistical approach was also used to describe respondent characteristics and variable indicators related to AI, Augmented Reality, Virtual Influencers, Chatbots, and User Experience.

RESULT AND DISCUSSION

Partial Least Square (PLS) Analysis

Data analysis and model testing using smart PLS. 4.0. in the analysis of PLS two sub-models are used, namely the outer model measurement model used for validity testing and reality test and the inner model measurement model used for quality testing or hypothesis testing for prediction testing.

Measurement Model Analysis (Outer Model)

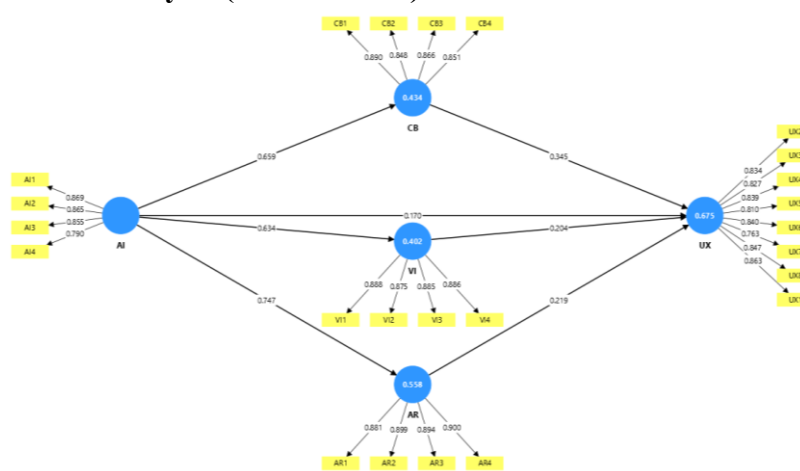


Figure 1. Outer Model

Source: SmartPLS 4.0 output, processed by researcher (2024)

The initial stage before testing the measurement model is to create an estimate of the model that can be seen in (Figure 1). Measurement model testing is carried out to show the results of the validity or reliability test. Evaluate measurement models with convergent validity, internal consistency, and discriminant validity.

a. Convergent Validity

Convergent Validity is measured using the outer loadings and AVE parameters. The loading factor value of >0.7 is said to be ideal, meaning that the indicator is said to be valid in measuring its construct. This is based on the theory of Chin (2010) which states that a loading factor of more than 0.70 is more expected and better. While the criteria used in AVE is > 0.5 . because if the AVE value is above 0.50, the construct is able to explain the average of at least 50% of the variant of the item, Chin (1998). The results of processing using SmartPLS can be seen in table 1.

Table 1. Convergent Validity Test Results

Influence between Variable	Artificial Intelligence	Chatbots	Virtual Influencers	Augmented Reality	User Experience In Social Media
<i>Artificial Intelligence</i>	0,869				
	0,865				
	0,855				
	0,790				
<i>Chatbots</i>		0,890			
		0,848			
		0,866			
		0,851			
<i>Virtual Influencers</i>			0,888		
			0,875		
			0,885		
			0,886		
<i>Augmented Reality</i>				0,881	
				0,899	
				0,894	
				0,900	
<i>User Experience In Social Media</i>					0,863
					0,834
					0,827
					0,839
					0,810
					0,840
					0,763
					0,847

Source : PLS Data Processing Attachment

In the table above, the acquisition of the outer loading value of the Artificial Intelligence variable is the highest of 0.869 and the lowest is 0.790. In the Chatbots variable, the highest is 0.890 and the lowest is 0.848. The acquisition of the outer loading value in the Virtual Influencers variable obtained the highest outer loading value of 0.888 and the lowest 0.875. Acquisition of the outer loading value of the variable The acquisition of the outer loading value of the Augmented Reality variable is the highest 0.900 and the lowest is 0.881. Meanwhile, in the User Experience in Social Media variable, the highest outer loading value was 0.863 and the lowest was 0.763. Thus, the value of outer loading or correlation between indicators and variables in this study has met the requirements for convergent validity, because all question items have a loading factor value of > 0.50.

b. Discriminant Validity

The discriminant validity test is carried out to ensure that each concept of each latent variable is different from the other variables. The model is said to have good discriminant validity if each loading indicator of a latent variable is more correlated with that latent variable than when correlated with other latent variables. The results of the discriminant validity test were obtained as follows

Tabel 2. Nilai Discriminant Validity (Cross Loading)

	TO	AR	CB	UX	YOU
AI1	0,869	0,686	0,631	0,639	0,588
FW2	0,865	0,684	0,628	0,631	0,592
FW3	0,855	0,588	0,527	0,561	0,526
FW4	0,790	0,548	0,403	0,479	0,408
AR1	0,615	0,881	0,640	0,644	0,587
AR2	0,747	0,899	0,687	0,700	0,673
AR3	0,676	0,894	0,655	0,646	0,579
AR4	0,620	0,900	0,669	0,654	0,588
CB1	0,560	0,611	0,890	0,629	0,511
CB2	0,606	0,689	0,848	0,670	0,574
CB3	0,545	0,647	0,866	0,670	0,537
CB4	0,562	0,612	0,851	0,607	0,531
UX2	0,581	0,608	0,607	0,834	0,568
UX3	0,588	0,613	0,613	0,827	0,574
UX4	0,554	0,624	0,635	0,839	0,542
UX5	0,559	0,607	0,585	0,810	0,553
UX6	0,578	0,627	0,612	0,840	0,595
UX7	0,556	0,575	0,605	0,763	0,497
UX8	0,589	0,610	0,660	0,847	0,558
VI1	0,534	0,578	0,523	0,576	0,888
VI2	0,595	0,624	0,558	0,616	0,875
VI3	0,599	0,629	0,605	0,634	0,885
VI4	0,501	0,569	0,510	0,557	0,886
UX1	0,569	0,644	0,629	0,863	0,593

Source : PLS Data processing attachment

From table 2, it can be seen that the loading factor value for each indicator of each latent variable has the largest loading factor value compared to the loading factor value when connected with other latent variables. This means that each latent variable has a good discriminant validity.

The difference between convergent validity and discriminant validity is as follows, convergent validity has a high correlation with other measuring instruments that measure the same attribute. For this study, all variables have a loading factor value above 0.50 so that they have a good convergent validity standard. Meanwhile, discriminant validity has a low correlation with other measuring instruments that measure different attributes. After the loading factor in convergent validity is determined, a comparison is made with other latent variables which shows that the loading factor value of the latent variable is higher than other latent variables so that it has good validity.

c. Reliability Test (Composite Reliability and Average Variance Extracted (AVE))

The Reliability Test is related to issues related to trust in the questionnaire instrument. A categorized can have a high level of confidence (cosisten) if the test results of the instrument show consistent results. So that the reliability test is related to the accuracy of the results. Reliability tests are used to determine the level of stability of a measuring instrument. The

measurement results can be trusted to obtain relatively similar results, as long as the aspects measured in the subject do not change, Wijaya T (2012).

To test the reliability level of the questionnaire used, this study uses a reliability test. The reliability benchmark is Cronbach's alpha value obtained using a statistical test. According to Harsani (2010) states that the minimum value used as a condition for the correctness of the questionnaire is 0.06 so that if Cronbach's alpha value is below 0.06, then the questionnaire does not meet the reliability requirements.

In this study, the validity and reliability criteria can also be seen from the Composite Reliability and the Average Variance Extracted (AVE) value of each construct. Construct is said to have high reliability if the composite reliability value is above 0.70 and AVE is above 0.50.

Tabel 3. Composite Reliability dan nilai Average Variance Extracted (AVE)

	Cronbach's alpha	Average variance extracted (AVE)
CB	0,887	0,746
YOU	0,906	0,781
AR	0,916	0,799
TO	0,868	0,714
UX	0,934	0,686

Source : PLS Data Processing Attachment

Table 3. shows that the entire construct meets composite reliability because Cronbach's alpha value is in the range of 0.868 – 0.934. Likewise, the AVE value produced is in accordance with the recommended value, which is more than 0.50. Another way to test discriminant validity is to compare the root value of each construct with the correlation between constructs.

1. Structural Model Analysis (Inner Model)

Before the hypothesis test, in this study, a Structural Model (Inner Model) test was carried out. This is done to find out the relationship between latent variables (Structural Model). The Inner Model was evaluated using R-square for dependent constructs, stone Geisser Q-square for prediva relevance and t-test and significance of parameter coefficients. R-square changes are used to assess the influence of certain independent latent variables on latent variables for substantive influences. Here is a picture of the T statistic output:

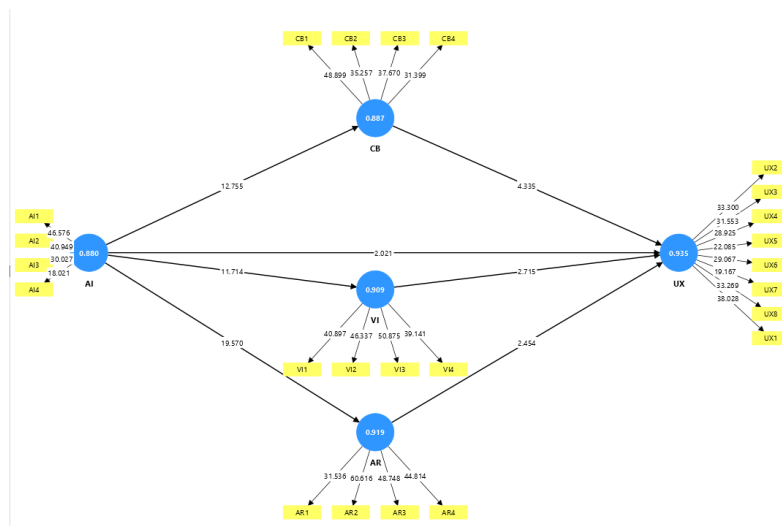


Figure 2. Inner Model

Source: SmartPLS 4.0 output, processed by researcher (2024)

Table 4. R-Square Values

NO	Model	R Square	Adjusted R Square
1	Augmented Reality	0.558	0.556
2	Chatbots	0.434	0.431
3	User Experience	0.675	0.669
4	Virtual Influencers	0.402	0.399

Source: Primary data processed using SmartPLS 4.0

Based on table 4, it shows that the value of the Adjusted R-square of the Augmented Reality variable is 0.556. This means that the Augmented Reality variable can be explained by the Artificial Intelligence variable of 55.6%. Meanwhile, the Adjusted R-square value for the Chatbots variable is 0.431, which means that the Chatbots variable can be explained by Artificial Intelligence by 43.1%. Furthermore, the Adjusted R-square value for the User Experience variable is 0.669, which means that the User Experience variable is explained by the variables Artificial Intelligence, Chatbots, Virtual Influencers, and Augmented Reality by 66.9%. The Adjusted R-square value for the Virtual Influencers variable is 0.399, which means that the Virtual Influencers variable can be explained by Artificial Intelligence by 39.9%.

Furthermore, the researcher tested the hypothesis proposed, the magnitude of the t-statistical value could be seen. If the t-statistical value > t table, then the hypothesis will be accepted.

2. Hypothesis Testing (Bootstrapping)

Bootstrapping is a nonparametric procedure that allows statistically significant testing of various PLS-SEM results such as path coefficients, Cronbach's alpha values, HTMT, and R².

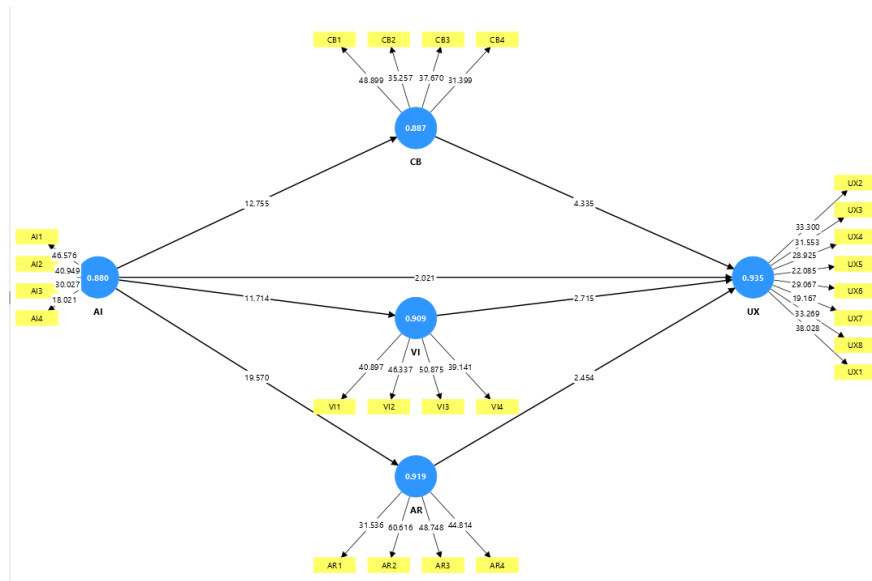


Figure 3. Testing of Structural Models

Source: SmartPLS 4.0 output, processed by researcher (2024)

The proposed hypothesis test was carried out by looking at path coefficients that show the parameter coefficients and the significant values of the statistics. The significance of the estimated parameters can provide information about the relationship between the variables of the study. The limit for rejecting and accepting the proposed hypothesis is to use a probability of 0.05. Table 5 presents the estimated output for structural model testing:

Table 5. Hypothesis Test by Path Coefficient

Influence between Variable	Original Sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T Statistic	P Values
Artificial Intelligence affects User Experience in Social Media	0.170	0.164	0.084	2.021	0.043
Artificial Intelligence affects Augmented Reality	0.747	0.750	0.038	19.570	0.000
Artificial Intelligence affects Virtual Influencers	0.634	0.638	0.054	11.714	0.000
Artificial Intelligence affects Chatbots	0.659	0.660	0.052	12.755	0.000
Augmented Reality affects User Experience in Social Media	0.219	0.217	0.089	2.454	0.014
Virtual Influencers affect User Experience in Social Media	0.204	0.207	0.075	2.715	0.007

Influence between Variable	Original Sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T Statistic	P Values
	0.345	0.349	0.079	4.335	0.000

Source : PLS data processing attachment

The basis of decision-making (based on statistical t-values with a significant level of 0.05, Haryono (2017).

- a. Ho is accepted when $t \text{ Statistically} \leq 1.96$ (Not Affected)
- b. Ho is rejected when $t \text{ Stats} \geq 1.96$ (Influential)

Basis of decision-making (based on significant values), Haryono (2017)

- a. If the value of P Valeu ≥ 0.05 then H0 is accepted (No effect)
- b. If the value of P is ≤ 0.05 then H0 is rejected (There is an Effect)

The summary of the results of the hypothesis test can be tabulated as follows:

Table 6. Summary of Hypothesis Test Results

Influence between Variables	Original Sample (O)	Standard deviation (STDEV)	P Values	Information
Artificial Intelligence affects User Experience in Social Media	0.170	0.084	0.043	Accepted
Artificial Intelligence affects Augmented Reality	0.747	0.038	0.000	Accepted
Artificial Intelligence affects Virtual Influencers	0.634	0.054	0.000	Accepted
Artificial Intelligence affects Chatbots	0.659	0.052	0.000	Accepted
Augmented Reality affects User Experience in Social Media	0.219	0.089	0.014	Accepted
Virtual Influencers affect User Experience in Social Media	0.204	0.075	0.007	Accepted
Chatbots affect User Experience in Social Media	0.345	0.079	0.000	Accepted

Source : PLS data processing attachment

Hypothesis Testing Results

Artificial Intelligence on User Experience in Social Media

Artificial Intelligence affects User Experience in Social Media. This is because the P value is < 0.05 ($0.043 < 0.05$), so Ho is rejected and Ha is accepted. The positive coefficient value of 0.170 means that there is a significant positive influence, namely if Artificial Intelligence increases, the User Experience in Social Media will also increase. The role of

Artificial Intelligence in content personalization makes the user experience feel more tailored to individual needs.

Artificial Intelligence on Augmented Reality

Artificial Intelligence influences Augmented Reality. This is because the P value is < 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_a is accepted. The value of a positive coefficient of 0.747 means that there is a significant positive influence, namely if Artificial Intelligence increases, Augmented Reality will also increase. Artificial Intelligence supports Augmented Reality through data analysis capabilities that produce more accurate and contextual digital visualizations.

Artificial Intelligence on Virtual Influencers

Artificial Intelligence affects Virtual Influencers. This is because the P value is < 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_a is accepted. The positive coefficient value of 0.634 means that there is a significant positive influence, namely if Artificial Intelligence increases, Virtual Influencers will also increase. The use of Artificial Intelligence allows Virtual Influencers to appear more realistic through the arrangement of expression, communication style, and digital interaction.

Artificial Intelligence on Chatbots

Artificial Intelligence affects Chatbots. This is because the P value is < 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_a is accepted. The positive coefficient value of 0.659 means that there is a significant positive influence, namely if Artificial Intelligence increases, Chatbots will also increase. Artificial Intelligence integration makes Chatbots able to understand user intent and provide relevant and fast automated responses.

Augmented Reality on User Experience in Social Media

Augmented Reality affects User Experience in Social Media. This is because the P value < 0.05 ($0.014 < 0.05$), so H_0 is rejected and H_a is accepted. The positive coefficient value of 0.219 means that there is a significant positive influence, namely if Augmented Reality increases, the User Experience in Social Media will also increase. Augmented Reality technology adds an interactive and immersive impression so that users are more involved in social media activities.

Virtual Influencers on User Experience in Social Media

Virtual Influencers influence User Experience in Social Media. This is because the P value < 0.05 ($0.007 < 0.05$), so H_0 is rejected and H_a is accepted. The positive coefficient value of 0.204 means that there is a significant positive influence, namely if Virtual Influencers increase, the User Experience in Social Media will also increase. The presence of Virtual Influencers can build emotional closeness with the audience through creative content that attracts attention.

Chatbots on User Experience In Social Media

Chatbots affect User Experience in Social Media. This is because the P value is < 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_a is accepted. The positive coefficient value of 0.345

means that there is a significant positive influence, namely if Chatbots increase, the User Experience in Social Media will also increase. Chatbots provide easy access to services instantly, increasing the convenience of user interaction.

Discussion of Research Results Peran Artificial Intelligence on User Experience in Social Media

Based on the results of hypothesis 1 testing in this study, Artificial Intelligence has a positive and significant influence on user experience in social media. Artificial Intelligence according to Virvou (2023) is defined as a technology that allows systems and applications to understand, learn, and interact automatically with users so that they can improve the quality and effectiveness of the user experience. In digital-based and interactive systems, the application of Artificial Intelligence serves to create a more personalized, efficient, and intuitive experience through features such as personalization, automation, and natural language understanding.

With the application of Artificial Intelligence, the User Experience will be further improved through more adaptive and efficient services, as well as creating interactions that are responsive to user needs. This will minimize interaction barriers, increase user comfort, while presenting challenges in maintaining the sustainability of user trust and security. Artificial Intelligence also plays an important role in analyzing user behavior data to design more appropriate designs, so as to be able to improve the quality of evaluation and design of User Experience.

This research supports research conducted by Virvou (2023) which emphasizes that Artificial Intelligence explicitly improves User Experience by providing adaptive, efficient, and secure services. In addition, the results of the research of Yang, Wei, and Pu (2020) also show that Artificial Intelligence, especially using neural network models, can improve the measurement and understanding of User Experience by analyzing user behavior data more efficiently and objectively. This means that the higher the application of artificial intelligence, the higher the quality and effectiveness of the user experience.

The hypothesis in this study is proven in accordance with the research results of Omeish et al., (2024) and PJ Kusuma et al., (2023) which show that Artificial Intelligence has a significant and positive influence on User Experience.

The Role of Artificial Intelligence in Augmented Reality

Based on the results of hypothesis 2 testing in this study, Artificial Intelligence has a positive and significant influence on Augmented Reality. Artificial Intelligence according to Carmigniani and Furht (2011) is defined as the ability of a computer system to perform tasks that usually require human intelligence. This definition is directly linked to the use of Augmented Reality, particularly in the context of real-time information processing and interaction with virtual environments. With the application of Artificial Intelligence, Augmented Reality can provide a more interactive, immersive, and adaptive experience to user needs.

The integration of Artificial Intelligence in the Augmented Reality system can improve the capabilities of this technology so that it can provide a more adaptive, efficient, and interactive experience for its users. The proven hypothesis in this study is in accordance with The Role of Information Technology in Explaining the Impact of Artificial Intelligence on Enhancing the User Experience of Generation Z Social Media Users in Semarang City

the results of research conducted by Sahu, Young, & Rai (2020) which confirms that classic Augmented Reality methods can be significantly improved through the incorporation of Artificial Intelligence strategies such as deep learning, ontology, and expert systems. The application of Artificial Intelligence in Augmented Reality has proven to be able to adapt to a wider variety of scenery and user preferences, thereby increasing efficiency and effectiveness in manufacturing tasks such as assembly and maintenance.

Lampropoulos' research (2025) also supports these results by emphasizing that Artificial Intelligence plays a supporting role as a supporting technology that enables Augmented Reality to provide a more personalized, efficient, and adaptive learning experience. Artificial Intelligence in the context of education enables the development of virtual avatars, intelligent tutoring systems, and more immersive voice, gesture, and visual multimodal interactions, thus strengthening the relevance of Artificial Intelligence integration to improving Augmented Reality capabilities. Thus, the results of this study are consistent with previous findings that affirm that Artificial Intelligence not only supports but also expands the scope of Augmented Reality implementation in various fields.

The proven hypothesis in this study is in accordance with the results of research by Jiang et al., (2023) who stated that Artificial Intelligence is used to interpret data in real-time and visualize it through Augmented Reality so that surgeons can perform actions more accurately, safely, and efficiently. This is in line with Omeish et al., (2024) who found that there is a positive and significant influence of Artificial Intelligence on the application of Augmented Reality.

The Role of Artificial Intelligence on Virtual Influencers

Based on the results of hypothesis 3 testing in this study, Artificial Intelligence has a positive and significant influence on Virtual Influencers. Virtual Influencers according to Koles et al (2024) are defined as fictional characters that are digitally created and operated by third parties such as freelance creators, digital agencies, or brands using advanced technology such as to develop, manage, and run their presence on social media. It has a complex look, personality, and storyline designed to influence and capture the attention of audiences on digital platforms. Virtual Influencers as an innovation in the field of influencer marketing are completely artificial, have no real physical presence, and can vary from the "perfect" human appearance to cartoon or robotic forms.

The proven hypothesis in this study is in accordance with the results of research by Omeish et al. (2024) which shows that Artificial Intelligence has a significant effect on Virtual Influencers ($\beta = 0.50$; $T = 6,406$; $p < 0.001$), confirming its role as the main factor in the effectiveness of social media-based digital marketing. Then the research of Allal-Chérif et al. (2024) also supports that Virtual Influencers based on Artificial Intelligence are able to surpass human influencers because they are considered more authentic, attractive, and increase consumer engagement. Thus, Artificial Intelligence is the main driver that allows Virtual Influencers to create better user experience while strengthening consumer loyalty.

The Role of Artificial Intelligence in Chatbots

Based on the results of hypothesis 4 testing in this study, Artificial Intelligence has a positive and significant influence on Chatbots. Artificial Intelligence according to Khan,

Khattak, and Shakeel (2025) is defined as the ability of machines to mimic human intelligence, thereby allowing chatbots and other conversational agents to interact, respond, and adapt based on user input. In the context of information technology developments, the application of Artificial Intelligence in chatbots encourages the creation of more natural, effective, and personal interactions, both in customer service and in the field of education.

With the application of Artificial Intelligence, chatbots will be able to improve the quality of conversations, provide satisfaction to users, and create more meaningful interactive experiences. This will minimize rigid communication limitations, encourage user engagement, and expand the use of chatbots in various sectors, especially in customer service and e-commerce.

The proven hypothesis in this study is in accordance with the results of research conducted by Adamopoulou and Moussiades (2020) which shows that the more sophisticated the Artificial Intelligence algorithm, the more significant the increase in chatbot performance. And the results of the research of Jain, Kumar, Kota, and Patel (2018) also confirm that the ability of Artificial Intelligence through natural language processing and machine learning contributes greatly to user satisfaction, engagement, and the quality of chatbot conversations. Then the results of research by Elsa Febriananta et al., (2024) show that there is a positive and significant relationship between Artificial Intelligence and the effectiveness of the use of chatbots in the student lecture process. This finding is in line with Omeish et al., (2024) who stated that Artificial Intelligence has a positive and significant effect on Chatbots.

The Role of Augmented Reality on User Experience in Social Media

Based on the results of hypothesis 5 testing in this study, Augmented Reality has a positive and significant influence on User Experience in Social Media. According to Tu and Jia (2024), Augmented Reality (AR) is a technology that integrates digital content, such as images, sounds, and other information, into the real-world environment in real-time. Augmented Reality allows users to see the real world with the addition of virtual elements that appear as if they are in the same place as their physical environment, creating an interactive and immersive experience. This technology is widely used in various fields, such as entertainment, education, advertising, and retail, to improve user interaction and experience.

Based on the results of this study, Augmented Reality (AR) has proven to have a positive and significant influence on User Experience in Social Media. These results are in line with a study conducted by Kojić et al. (2025) which showed that the level of interactivity in mobile augmented reality (MAR) applications plays an important role in shaping User Experience as well as social acceptance. The study confirms that while high interactivity can increase user engagement, it also has the potential to create social barriers in public spaces, so a balanced design approach is needed for Augmented Reality integration to run smoothly in everyday life.

In addition, the research of Ambadekar et al. (2021) also strengthens the results by showing that Augmented Reality can improve depth perception, navigation, and social experiences in real and virtual environments. The study highlights the application of Augmented Reality in real-world cases such as airports and shopping malls, proving that Augmented Reality not only improves the accuracy of interaction and navigation, but also provides a more realistic experience and facilitates the social connection of users.

Thus, these two studies support the results of research that the implementation of Augmented Reality has a significant contribution in improving User Experience in Social Media, both in terms of interactivity, social acceptance, and ease of interaction in a digital environment that is connected to the real world.

The proven results of research conducted by Kasimova (2025) show that the use of Augmented Reality in the promotion of tourism products through social media, including interactive filters and simulations of tourist sites, provides a strong positive correlation to User Experience. These results are in line with Omeish et al., (2024) who stated that Augmented Reality significantly improves the User Experience in Social Media.

The Role of Virtual Influencers of User Experience in Social Media

Based on the results of hypothesis 6 testing in this study, Virtual influencers have a positive and significant influence on user experience in social media. This shows that the existence of virtual influencers can improve the quality of user experience when interacting on social media, both through aspects of social acceptance, trust, and overall user engagement. According to Yang, Zeng, and Zhang (2025) Virtual influencers are digitally generated images that are computer-generated and act like human influencers. They see the world from a first-person perspective and can capture the audience's attention through various social media platforms. By displaying a variety of characters, these virtual influencers serve as a substitute for human influencers in various digital activities and social communication, attract attention with the content they create and the interactions they make, and have great potential in branding and digital cultural expression.

The results of this study are also consistent with a study conducted by Hong and Kim (2023) found that the MZ generation considers virtual influencers as peers, where users with a positive attitude can accept the unnatural appearance of the influencer's virtual appearance. This confirms that virtual influencers are able to influence users' perceptions and preferences, which ultimately shapes their interaction experience on social media. In line with these findings, research conducted by Yang, Zeng, and Zhang (2025) revealed that virtual influencers with strong storytelling and human nature are considered more authentic, thereby increasing user trust and engagement on Chinese social media platforms.

Based on the results of the study, it can be concluded that virtual influencers have a positive and significant influence on the user experience in social media. Their existence is able to improve the quality of user experience, both through aspects of social acceptance, trust, and involvement in digital interactions. Virtual influencers created in the form of digital characters not only act as a substitute for human influencers, but are also able to attract the attention of the audience through the content and interactions they present on various social media platforms. This shows that virtual influencers have great potential in building connectivity, strengthening branding, and encouraging digital cultural expression so that it becomes an effective strategy in improving user experience in the realm of social media.

It is proven that the results of research conducted by Kembau et al., (2024) show that there is a positive and significant influence of the characteristics of Virtual Influencers on User Experience. This is in line with Omeish et al., (2024) who also found a positive relationship between Virtual Influencers and User Experience in Social Media.

The Role of Chatbots on User Experience in Social Media

Based on the results of hypothesis 7 testing in this study, Chatbots have a positive and significant influence on user experience in social media. This shows that the use of chatbots can improve the quality of user experience when interacting on social media, both in the form of the relevance of answers, the usefulness of information, and overall satisfaction. According to Følstad and Taylor (2021), chatbots are increasingly considered a valuable complement to customer service, and their success relies heavily on a positive user experience. This means that the success of a chatbot is not only seen from its ability to answer questions, but also from the overall quality of the user experience which includes relevance, usefulness, and satisfaction during interactions.

The results of this study are also consistent with the study conducted by Kim, Kim, and Baek (2024). The study found that perceived usability ($\beta = 0.254$) and perceived enjoyment ($\beta = 0.438$) had a significant effect on ChatGPT user satisfaction. Satisfaction ($\beta = 0.447$) and attachment ($\beta = 0.405$) then proved to be important factors in forming a sustainable intention to use generative Artificial Intelligence. A positive user experience drives satisfaction while increasing long-term usage intentions. These findings are also reinforced by research by Cheng and Jiang (2020) which shows that chatbots can increase utilitarian (information), hedonistic (entertainment), technological (media appeal), and social (social presence) satisfaction, all of which have a positive impact on user satisfaction. This satisfaction then increases customer loyalty and the intention of continuous use. Nonetheless, perceived privacy risk factors can reduce satisfaction, making it an important note for developers to keep user data safe.

With the connection between the results of this study and previous research, it can be concluded that chatbots play an important role in creating a positive user experience on social media. Usability, enjoyment, attachment, and satisfaction are the dominant factors that drive loyalty and sustainability of user interactions.

It is evident that the results of research conducted by Baig, Altaf, & Azam (2024) through a qualitative approach found that the use of Chatbots significantly improves the User Experience. This result is strengthened by Omeish et al., (2024) who through a quantitative approach also shows a positive relationship between Chatbots and User Experience in Social Media.

CONCLUSION

Based on the results of the research, it can be concluded that the application of Artificial Intelligence (AI) has a positive and significant effect on improving the user experience of Shopee e-commerce users from Generation Z in Semarang City through its role in optimizing Augmented Reality, Virtual Influencers, and Chatbots. AI has proven to be able to create a more personalized, efficient, and interactive shopping experience by providing interesting and responsive product visualization features, automated services, and digital communications. Theoretically, these results reinforce the theory of digital interactivity, Human-Computer Interaction (HCI), and Technology Acceptance Model (TAM) which emphasizes the importance of the perception of usability and ease of use of technology in shaping a positive user experience. From the managerial side, this study recommends that Shopee's management continue to develop AI integration to improve service quality, expand the use of AR, optimize the use of Virtual Influencers, and improve the performance of Chatbots to be more humane. The Role of Information Technology in Explaining the Impact of Artificial Intelligence on Enhancing the User Experience of Generation Z Social Media Users in Semarang City

and adaptive to user needs. However, this study has limitations in scope that only covers Generation Z in Semarang and online data collection, so future research is recommended to expand the region, involve other generations, and use mixed methods to obtain more comprehensive results on the role of AI in improving user experience in various digital contexts.

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