The Role of AI and FoMO in Marketing Transformation in Driving Generation Z Shopping Decisions

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Abstract

This study examines how Artificial Intelligence (AI) and Fear of Missing Out (FoMO) contribute to changes in purchasing behavior among Generation Z. The study involved individuals aged 17 to 26 who actively use the Shopee platform. A total of 511 participants were recruited using convenience sampling, based on the Lemeshow formula for an unknown population size. Data analysis was conducted using SmartPLS 3, which incorporated evaluations of convergent validity, Average Variance Extracted (AVE), discriminant validity, composite reliability, R-squared value, path significance, and effect size. The findings indicate that AI has a strong and statistically significant effect on purchasing decisions ($f^2 = 0.813$, $p < 0.001$), demonstrating its effectiveness in influencing Generation Z's online shopping behavior. In contrast, FoMO only showed a negligible and insignificant impact ($f^2 = 0.018$, $p = 0.515$), indicating limited empirical support for its role in shaping purchasing decisions.

Keywords: AI, FoMO, Generation Z, Purchase Decision.

Introduction

Technological advancements have transformed the way people shop, and one of the most affected groups by this change is Generation Z. According to the 2020 Population Census, Generation Z represents the largest generational cohort in Indonesia, comprising approximately 74.93 million individuals or 27.94% of the total population. Currently, members of this generation are within the 8 to 23-year age range. In the next seven years, this entire group is expected to transition into the productive age bracket, indicating their growing significance in the national economy and labor force. Figure 1 shows the percentage of Indonesia's population by generation in 2020 (Dwi Hadya Jayani, 2021).
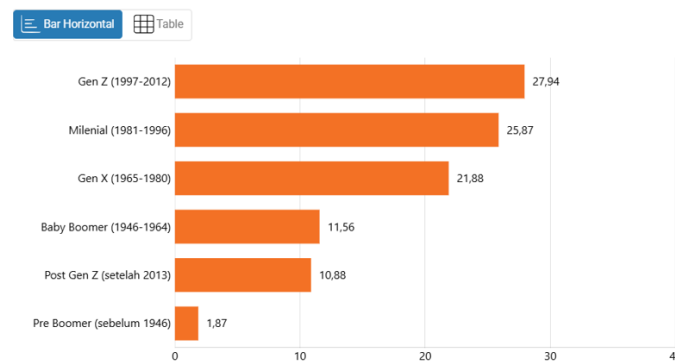
Figure 1. Distribution of Indonesia's Population by Generational Cohort, 2020

Generation Z represents a potential market for businesses, as they are able to interact directly with various technological platforms. The advancement of artificial intelligence (AI) and the rise of the fear of missing out (FoMO) phenomenon have significantly accelerated shifts in consumer behavior and decision-making processes. AI-powered recommendation algorithms enhance personalization by delivering tailored product suggestions based on user preferences, which often encourages more spontaneous and impulsive buying actions.

Previous research conducted by Ruiz-Viñals et al. (2024) showed that factors such as perceived quality, consumer attitudes towards artificial intelligence (AI), and perceived usefulness have a positive influence on purchase intentions among Generation Z consumers. Furthermore, these findings emphasize the importance of conducting further investigations into the role of AI in the e-commerce environment (Pangkey et al., 2019). In addition, FoMO (Fear of Missing Out) is an important factor in Generation Z behavior. FoMO refers to the anxiety that arises from not keeping up with current trends. In the context of shopping, FoMO is often triggered by promotions, limited-time discounts, or trending product displays on social media, which encourage purchasing decisions even when the items are not needed. Among Generation Z, the fear of missing out (FoMO) is frequently amplified by the influence of social media personalities who portray aspirational lifestyles online. A major challenge for today's digital businesses lies in effectively combining AI technologies with FoMO-driven triggers, fostering a more

emotionally charged and impulsive purchasing environment. Previous studies have stated that AI technology is a driving force of transformation in the e-commerce industry, reshaping operational methods and business models, and enabling companies to adapt to the rapidly evolving market landscape. However, these studies do not specifically address AI-based promotions with FoMO as a moderating variable in Generation Z purchasing decisions. Instead, they focus on the acceptance of AI in shopping and its impact on consumer behavior without mentioning FoMO (Kumari & Thakur, 2025).

Studies on artificial intelligence in marketing have transformed various aspects of the field. Research suggests that artificial intelligence can enhance the personalization of the shopping experience and accelerate purchasing decisions. (William Yoo, 2024). Integrating artificial intelligence methods into online business has shown significant promise in increasing customer satisfaction, boosting revenue, and reducing operational costs (Alkudah & Almomani, 2024). There is a positive relationship between artificial intelligence and consumer purchasing decisions, where personalized and data-driven experiences are key to maintaining customer loyalty (Farrukh et al., 2024).

Business organizations can integrate artificial intelligence into their offerings to better understand consumer needs and drive technology adoption (Manikan & Bhuvaneswari, 2024). However, to achieve success, it is essential to address challenges related to data accuracy, system integration, and privacy concerns. Future studies should focus on the more measurable and easily applicable use of AI on e-commerce platforms. In addition, fear of missing out (FoMO) has emerged as a notable psychological construct within the fields of marketing and consumer behavior. Within the realm of online shopping, FoMO may be activated by various stimuli such as limited-time offers, popular or trending items, and user-generated reviews shared across social media platforms. Findings suggest that individuals who experience social exclusion are more likely to engage in compulsive buying, and this relationship is partly explained by FoMO (Mert & Tengilimoğlu, 2023). Empirical evidence from prior research suggests that FoMO positively affects consumers' purchase decision-making. This indicates a theoretical implication that the FoMO phenomenon, characterized by fear and anxiety over missing out on something new, affects consumer purchasing decisions (Wachyuni et al., 2024). However, other studies have found that individuals who experience fear do not necessarily show an increased intention to purchase, meaning that FoMO does not influence purchasing decisions (Widyasari et al., 2021).

This study is a continuation of the researcher's previous work, which found that marketing content has a significant and strong impact on purchasing decisions, while flash sales and live streaming have a smaller and statistically insignificant influence. (Efendi et al., 2024). The originality of this study is reflected in two key aspects: (a) the adoption of distinct independent variables artificial intelligence and fear of missing out which differ from those used in prior research, and (b) the focus on a specific target group, namely Generation Z individuals aged 17 to 26 who are Shopee users, as opposed to earlier studies that primarily investigated Tokopedia users. The principal aim of this study is to evaluate the efficacy of marketing transformation strategies leveraging both artificial intelligence and Fear of Missing Out (FoMO) in influencing purchase decisions among Generation Z consumers.

Methodology

Types of research

The research method must be able to explain in full and in detail how the stages of carrying out the research are. Some of the important things in the method are: Research model specifications, Research variables and their characteristics, Variables and how they are measured, Sampling techniques, and data analysis techniques.

Figure 2 illustrates the conceptual framework developed for this study, which outlines the proposed interconnections among the key research variables. In this model, Artificial Intelligence (AI) and Fear of Missing Out (FoMO) function as independent variables, while purchase decision serves as the dependent variable. The framework is designed to test how AI and FoMO, both individually and collectively, influence the purchasing behavior of Generation Z consumers. This model reflects the theoretical foundation of the study and guides the empirical analysis conducted using the Partial Least Squares (PLS) approach.
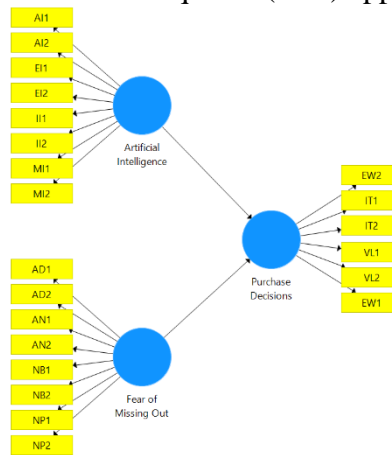
Figure 2. Proposed Conceptual Model of the Study

According to the underlying framework illustrated in Figure 2, the following research hypotheses are proposed to examine the relationships among the study variables:

H1: Artificial intelligence influences the purchasing decisions of Generation Z.
H2: Fear of Missing Out influences the purchasing decisions of Generation Z.

Population and Sample

The population under investigation in this study is composed of Generation Z individuals who are active users of the Shopee platform, although the total number of these users has not been identified. To obtain the sample, the study adopted purposive sampling, a non-probability approach that selects participants who meet defined characteristics pertinent to the research purpose. Therefore, the following criteria were established to determine the sample:

1. Sample selection must reflect key characteristics representative of the target population.
2. Selected participants should genuinely possess those defining traits.
3. Population characteristics must be carefully identified during the preliminary study.

Respondents in this study were Generation Z who actively use the Shopee

platform and have made at least one online purchase. The sample size is determined using the convenience sampling method, concerning the Lemeshow formula for populations with an unknown total size.

$$n = \frac{Z^2 P(1-P)}{d^2} \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots (1)$$

Using the aforementioned formula, the sample size was determined as follows.

$$n = \frac{1,96^2 . 0,5(1-0,5)}{0,1^2} \quad n = \frac{0,9604}{0,01} \quad n = 96,04 = 96 \text{ Minimum Sample Size}$$

A total of 511 respondents, as targeted, were successfully obtained in this research, thereby strengthening the representation of the population and producing better research results compared to using a sample size of only 96.

Operationalization of Variables

Purchase decision is defined as a problem-solving process that involves identifying consumer needs and wants, searching for and obtaining information, evaluating a product, making a buying decision, and exhibiting post-purchase behavior toward the product (Marlina & Mutiantari, 2022). A purchase decision refers to the consumer's choice to proceed with a transaction, influenced by the perceived superior value offered through various online platforms. It is also stated that the indicators of online purchase decisions include: time efficiency, value, and interaction (Wahyuni & Irfani, 2019). The Theory of Planned Behavior (TPB) posits that an individual's behavioral intention is shaped not only by their attitude toward the behavior and the influence of subjective norms, but also by their perceived control over performing the behavior. TPB expands upon the earlier Theory of Reasoned Action (TRA), which has been widely utilized in studies of consumer behavior. Unlike TPB, the TRA framework explains behavior as being determined solely by intention, which in turn is formed through attitude and subjective norms. The Theory of Reasoned Action (TRA) highlights that attitudes affect behavior through a deliberate and rational decision-making process. This process involves three important considerations: a) Behavior is guided not merely by general attitudes, but by specific evaluations related to a particular object or action. b) In addition to personal attitudes, behavior is also shaped by subjective norms namely, the perceived social pressure or expectations from significant others regarding how one should act. c) Attitude toward the behavior, together with subjective norms, forms the intention to perform the behavior (Purwanto et al., 2022). as well as how marketing strategies can be adapted to achieve better outcomes in influencing online purchase decisions.

Artificial Intelligence (AI) has been developed to mimic human cognitive abilities, particularly in analyzing unstructured customer data and uncovering insights that can be valuable for marketing when integrated with other supporting technologies. Artificial Intelligence (AI) can be utilized to optimize personalized marketing by delivering targeted offers to the most appropriate customers. Through the analysis of vast datasets, AI is capable of uncovering hidden patterns in consumer behavior that were previously undetected. However, despite AI computational power, only humans can truly understand other humans (Kartajaya

et al., 2021). In general, Artificial Intelligence (AI) is measured using four key indicators: a) Mechanical Intelligence, which is the most basic level of AI intelligence. AI with mechanical intelligence can execute routine and mechanical tasks such as performing calculations, sorting data, or searching for information within databases. b) Intuitive Intelligence, this level of intelligence allows AI to understand and interpret patterns that are unclear or difficult for humans to perceive. c) Analytical Intelligence, A higher level of intelligence than mechanical intelligence, analytical intelligence enables AI to analyze data and information, make predictions based on that analysis, and make decisions accordingly. For example, this intelligence is used to analyze sales trends and predict future sales. d) Empathetic intelligence in artificial intelligence refers to its capacity to recognize, interpret, and respond appropriately to human emotions, thereby enabling interactions that feel more intuitive and human-like. For instance, empathetic intelligence is applied in customer service to sense and respond appropriately to customer emotions (Huang & Rust, 2018).

Fear of Missing Out (FoMO) is a lifestyle phenomenon influenced by advances in technology (Siddik et al., 2020). FoMO significantly influences consumer decision-making by acting as a psychological trigger. In marketing, it serves as a compelling stimulus that drives consumers to make quicker purchasing choices (Alfarisi & Sukaris, 2024). The Fear of Missing Out (FoMO) often creates a psychological pressure wherein individuals perceive a sense of inadequacy or disconnection when they lack engaging or noteworthy content to share on social media. A person experiencing FoMO tends to develop negative feelings and emotions from social media platforms, often due to envy toward others' posts and lifestyles (Apriyanti & Wijayani, 2024). FoMO can be conceptualized through four primary dimensions that serve as its key indicators. a) Anxiety, A feeling of unease or worry, characterized by negative affect and constant thoughts when not being connected to the internet. b) Need to Belong, An unpleasant experience when someone is unable to join other groups or feels ignored on social media. c) Addiction, Difficulty in self-control when using social media, leading to excessive or compulsive use. d) Need for Popularity, A tendency or desire to be accepted and recognized by others on social media platforms (Kurniawan & Utami, 2022).
Table 1 presents a brief overview of how each variable has been operationalized in this study.

Table 1. Description and Measurement of Research Variables

No	Research Variable	Operational Indicator	Rating Scale
1.	Online shopping decisions refer to consumer actions in purchasing through internet-based media alternatives that offer higher value.	Time efficiency, Value, and Interaction.	1-5
2.	Artificial Intelligence can also be used to deliver the right offers to the right customers. It can uncover previously unknown patterns in customer behavior by analyzing large volumes of data.	Mechanical intelligence, Intuitive intelligence, Analytical intelligence, Empathetic intelligence	1-5
3.	FoMO is a key psychological	Anxiety, Need to belong,	1-5

driver that influences consumer decision-making by creating urgency and the fear of missing out on trends, promotions, or exclusive experiences.	Addiction, Need for popularity	

Approach to Data Analysis

The Approach to Data Analysis, testing procedures, and model evaluation applied in this study are summarized in Table 2 below.

Table 2. Data Analysis Approach

Test Data	Criteria	Description
Outer Model		
Validitas Konvergen	Loading factors greater than 0.700	Indicators of a construct are expected to be strongly correlated.
Average Variance Extracted (AVE)	AVE value should be greater than 0.500	The average variance explained by latent variables in their indicators should exceed 50%.
Validitas Deskriminan	Cross-loading values should be greater than 0.700	Indicators of distinct constructs are expected to exhibit low correlations.
Composite Reliability	Composite Reliability value should be greater than 0.700.	Utilized to confirm the measurement tool's accuracy, reliability, and consistency in assessing constructs.
Inner Model		
R-Square	R-Square value of 0.750 (strong), 0.500 (moderate), and 0.250 (weak).	R-squared reflects how much of the dependent variable's variance can be accounted for by the independent variables.
Significance Test (Hypothesis Testing)	P-value should be less than 0.050	To determine the influence exerted by independent variables on the outcome variable.
Effect Size	Effect Size values of 0.350 (strong), 0.150 (moderate), and 0.020 (weak).	This indicates whether the predictor variables exert a strong, moderate, or weak effect within the structural model.

Source: Tutorial Partial Least Squares PLS SEM,(Muhson, 2022)

Result and Discussion
Results of the Measurement Model (Outer Model) Analysis

The results of the overall instrument test, based on the research conceptual framework and analyzed using SEM-PLS software, produced a conceptual model as presented in Figure 3 below.
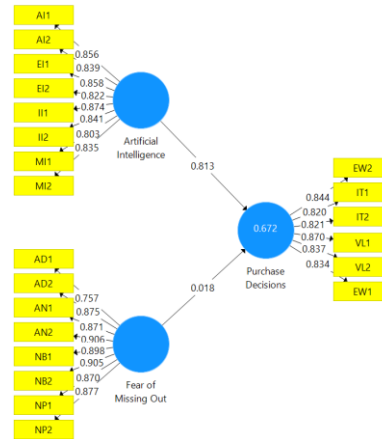
Figure 3. Path Coefficients of Outer and Inner Models in PLS-SEM

Referring to the results displayed in Figure 3, all indicator loadings for the variables Generation Z Purchase Decision, Artificial Intelligence, and Fear of Missing Out exceed the threshold value of 0.700. This indicates that each indicator demonstrates strong convergent validity, confirming that all measurement items used in this study are valid. This result is consistent with the statement that a loading factor value (or original sample estimate) above 0.70 in SmartPLS indicates good convergent validity, meaning that the indicators consistently and validly measure the same construct (Muhson, 2022). To ensure a high level of data validity in this study, the outer model analysis is employed to reinforce and confirm the accuracy of the measurement model. This analysis includes assessments of convergent validity, reliability, and discriminant validity. Convergent validity is evaluated based on the Average Variance Extracted (AVE) for each construct. A construct is considered to have sufficient convergent validity if its AVE value is equal to or exceeds 0.5. As shown in Table 5, the AVE scores for the constructs of Generation Z Purchase Decision, Artificial Intelligence, and Fear of Missing Out are 0.707, 0.758, and 0.702, respectively. These results indicate that all constructs meet the minimum threshold, thereby confirming adequate convergent validity. The reliability and overall construct validity results are further detailed in Table 3 below.

Table 3. Summary of Construct Reliability and Validity Measures

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Artificial Intelligence	0.941	0.951	0.707
FoMO	0.954	0.962	0.758
Purchase Decision	0.915	0.934	0.702

Source: PLS-3 Data Processing, 2025

Results of Data Reliability Evaluation

Construct reliability was assessed using the Composite Reliability (CR) and Cronbach's Alpha (CA) coefficients. A construct is considered reliable if both CR and CA values exceed the threshold of 0.70. As shown in Table 5, the CR values for the Artificial Intelligence, Fear of Missing Out, and Generation Z Purchase Decision constructs are 0.951, 0.962, and 0.934, respectively. Similarly, the Cronbach's Alpha scores for these constructs are 0.941, 0.954, and 0.915. Since all CR and CA values are well above the accepted threshold, it can be concluded that the instrument exhibits strong internal consistency, indicating that the constructs used in this study exhibit high reliability.

Evaluation of Discriminant Validity Results

To assess discriminant validity, the Heterotrait-Monotrait Ratio (HTMT) was used as a method to evaluate the degree of difference between latent constructs. The analysis focused on ensuring that the HTMT value for each pair of constructs remained below the recommended threshold. Typically, an HTMT value below 0.90 is considered acceptable, while a more conservative benchmark value of 0.85 is often applied to strengthen construct distinction. The detailed results of this analysis are summarized in Table 4 below.

Table 4. Heterotrait-Monotrait Ratio (HTMT)

	Artificial Intelligence	FoMO	Purchase Decision
Artificial Intelligence			
FoMO	0.394		
Purchase Decision	0.820	0.338	

Source: PLS-3 Data Processing, 2025

As presented in Table 4, all HTMT values are below the conservative limit of 0.85, confirming that the constructs exhibit satisfactory discriminant validity. To further strengthen these results, a cross-loading analysis can be performed. This method verifies that each indicator has a higher correlation with its related construct compared to other constructs, thus confirming the constructs' distinctiveness. The cross-loading values for each indicator across the constructs are shown in Table 5 below.

Table 5. Indicator Cross-Loadings Across Respective Constructs

	Artificial Intelligence	FoMO	Purchase Decision
AI1	**0.856**	0.286	0.702
AI2	**0.839**	0.348	0.683
EI1	**0.858**	0.388	0.706
EI2	**0.822**	0.411	0.682
II1	**0.874**	0.315	0.729
II2	**0.841**	0.290	0.676
MI1	**0.803**	0.287	0.670

MI2	**0.835**	0.328	0.667
AD1	0.412	**0.757**	0.380
AD2	0.304	**0.875**	0.243
AN1	0.338	**0.871**	0.303
AN2	0.350	**0.906**	0.293
NB1	0.354	**0.898**	0.329
NB2	0.292	**0.905**	0.237
NP1	0.308	**0.870**	0.235
NP2	0.319	**0.877**	0.250
EW1	0.688	0.183	**0.834**
EW2	0.684	0.232	**0.844**
IT1	0.680	0.319	**0.820**
IT2	0.693	0.316	**0.821**
VL1	0.702	0.322	**0.870**
VL2	0.672	0.327	**0.837**

Source: PLS-3 Data Processing, 2025

Referring to the data in Table 5, it is clear that each indicator displays a stronger loading on its related construct than on the other constructs. This pattern supports the existence of adequate discriminant validity among the measured variables (Hair Jr. et al., 2021).

Results of Structural Model (Inner Model) Analysis

The purpose of internal model analysis is to assess the research hypothesis and evaluate the relationship between the independent and dependent variables. This analysis involves examining several key components, including Goodness of Fit (GoF), R-squared value, path coefficients, and effect size (f^2). To evaluate the overall model fit, the Standardized Root Mean Square Residual (SRMR) was used. SRMR values range between 0 and 1, with lower values indicating a better fit. An SRMR score equal to or less than 0.08 is typically interpreted as indicating good model fit. As presented in Table 6, the SRMR value obtained in this study was 0.056, indicating a good model fit.

Table 6. Model Fit

	Saturated Model	Estimated Model
SRMR	0.056	0.056
d_ULS	0.803	0.803
d_G	0.389	0.389
Chi-Square	1111.351	1111.351
NFI	0.894	0.894

Source: PLS-3 Data Processing, 2025

The R Square value reflects the extent to which the independent variables explain variation in the dependent variable. In this study, the R Square is 0.672, while the Adjusted R Square is 0.671. These figures indicate that Artificial Intelligence and Fear of Missing Out collectively explain 67.2% of the variation in

Generation Z's purchase decisions. This level of explanatory power suggests that the model has a relatively strong capacity to account for the observed behavior, though approximately 32.8% of the variation is likely influenced by other factors not included in this analysis. The R Square and Adjusted R Square values are summarized in Table 7 below.

Table 7. R Square

	R Square	R Square Adjusted
Purchase Decision	0.672	0.671

Source: PLS-3 Data Processing, 2025

The path coefficient describes the magnitude and direction of the influence exerted by the independent variables, Artificial Intelligence and Fear of Missing Out, on the dependent variable, namely Generation Z Purchasing Decisions. A detailed description of the path coefficient values can be seen in Table 8 below.

Table 8. Path Coefficients

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
Artificial Intelligence -> Purchase Decision	0,813	29,886	0,000
FoMO -> Purchase Decision	0,018	0,652	0,515

Source: PLS-3 Data Processing, 2025

Referring to Table 8 above, it is shown that the path coefficient of Artificial Intelligence on Generation Z Purchase Decision is 0.813 with a p-value of 0.000, indicating that the Artificial Intelligence variable has a positive and significant relationship with Generation Z purchase decision. Meanwhile, the path coefficient of Fear of Missing Out (FoMO) is 0.018 with a p-value of 0.515. The path coefficient value of 0.018 suggests that the influence of FoMO on Generation Z purchase decisions is very small or nearly negligible. This value is very close to zero, indicating a weak and statistically as well as practically insignificant effect. Furthermore, the p-value of 0.515, which is much greater than the significance threshold of 0.05, confirms that there is no significant effect of FoMO on Generation Z purchase decisions. In other words, the relationship between FoMO and Generation Z purchase decision is not statistically significant.

Effect size refers to the extent to which a particular independent variable contributes to explaining the dependent variable within the structural model, commonly assessed using the f-square metric. The f-square value quantifies the strength of influence an exogenous variable exerts on an endogenous variable. According to standard interpretation guidelines, f-square values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effects, respectively. Conversely, a value below 0.02 suggests that the variable has no significant influence (Hair Jr. et al., 2021). The f-square values are presented in Table 9 below.

Table 9 Results of the F-Square Value Analysis.

	Original Sample (O)	P Values
Artificial Intelligence -> Purchase	0,813	0,000

Decision		
FoMO -> Purchase Decision	0,018	0,515

Source: PLS-3 Data Processing, 2025

Based on the f-square values presented in Table 9 above, the relationship between Artificial Intelligence and Generation Z Purchase Decision is 0.813, indicating that Artificial Intelligence has a very large impact on Generation Z purchase decisions. Considering the p-value of 0.000, it can be concluded that this impact is highly statistically significant, as the p-value (0.000) is less than the 0.05 significance level. Furthermore, the f-square value for the relationship between Fear of Missing Out (FoMO) and Generation Z Purchase Decision is 0.018, which falls within the very small effect size range. The associated p-value of 0.515 indicates that this impact is not statistically significant at the 5% significance level (since the p-value > 0.05). Overall, these results indicate that Artificial Intelligence has a significant and very strong impact on Generation Z purchase decisions, while Fear of Missing Out (FoMO) has a very small and statistically insignificant impact.

Discussion

The Impact of AI on Generation Z Buying Decisions

The results of the study suggest that the f-square value of 0.813, which represents the relationship between Artificial Intelligence (AI) and Generation Z's purchasing decisions, indicates a highly significant level of influence. This value is not only classified as large but also demonstrates that AI makes a substantial contribution to influencing purchase decisions within the Generation Z segment. Moreover, the p-value of 0.00 strengthens this result, signifying that the link between Artificial Intelligence (AI) and purchase decisions is statistically significant at the 5% level of significance ($\alpha = 0.05$). This suggests that the results of this study are reliable and robust, providing strong evidence of AI's critical role in shaping consumer behavior among Generation Z.

These data analysis results are further supported by the distribution of respondents' answers regarding all Artificial Intelligence indicators, which include Mechanical Intelligence, Intuitive Intelligence, Analytical Intelligence, and Empathetic Intelligence. Overall, these indicators received an average score of 4.12. This result is categorized under "Agree" and approaches the "Strongly Agree" range, suggesting that most respondents view the performance of AI features on digital platforms positively.

This finding reflects that respondents believe the implemented artificial intelligence effectively meets user needs in various dimensions: in terms of process efficiency (mechanical), accuracy in understanding context and needs (intuitive), data analysis capabilities (analytical), and the ability to establish personal and emotional interactions (empathetic). Thus, this score strengthens the evidence that AI technology has become a crucial element in enhancing the quality of user experience. It also highlights the high level of user acceptance and satisfaction toward the intelligent features offered by digital platforms.

The results of this study align with the trend of Generation Z growing reliance on digital technology, as well as their inclination toward shopping experiences that are personalized, efficient, and driven by data. Artificial Intelligence (AI), when integrated into digital platforms, enhances the ease and

effectiveness of processes such as information search, product personalization, and transactions. As a result, perceptions of usefulness and ease of use become psychological foundations that influence Generation Z purchasing decisions, especially given their characteristics as digital natives who have grown up and developed in an advanced technological environment. Generation Z behavior is largely connected to the virtual world; from an early age, they have been exposed to technology and are familiar with sophisticated gadgets, which has indirectly influenced their personalities (Wijoyo et al., 2020).

These research results are further reinforced by prior studies indicating that Artificial Intelligence improves digital marketing by optimizing workflows, automating routine activities, and providing deeply personalized customer experiences. Predictive analytics helps anticipate consumer behavior, while chatbots improve real-time customer engagement (Islam et al., 2024). Other studies also state that the use of AI in digital marketing platforms greatly assists consumers in finding products that match their needs and preferences more quickly and accurately. In addition, with the help of AI, companies can identify the necessary actions to enhance user engagement and improve consumers' purchase decisions (Dora & Saefudin, 2025). A positive relationship exists between artificial intelligence and consumer purchase decisions, where personalized and data-driven experiences are key to maintaining customer loyalty (Farrukh et al., 2024). Furthermore, other research findings suggest that AI can help companies predict what customers are likely to purchase. The use of AI is expected to result in a significant improvement in predictive capabilities, which depend heavily on the accuracy of those predictions. Companies may even substantially transform their business models by continuously providing goods and services to customers based on data and forecasts of consumer needs. This is highly relevant to the behavior of Generation Z, who tend to avoid complex shopping processes or those that do not align with their needs (Davenport et al., 2020). Personalizing the shopping experience and accelerating purchase decisions (William Yoo, 2024). Business organizations can integrate artificial intelligence into their offerings to better understand consumer needs and drive technology adoption (Manikan & Bhuvaneswari, 2024). However, to achieve success, it is essential to address challenges related to data accuracy, system integration, and privacy issues. In practical terms, based on prior research, the findings of this study also confirm that Artificial Intelligence functions not only as an operational aid but also as a strategic asset in digital marketing, particularly in shaping purchasing decisions. Businesses that successfully embed AI into their digital platforms gain a substantial advantage in creating emotional connections and cultivating brand loyalty, especially within the Generation Z demographic.

The Impact of FoMO on Generation Z Buying Decisions

The study reveals that FoMO has a minimal influence on Generation Z purchase decisions, with an F-squared value of 0.018, indicating a small effect. Additionally, the p-value of 0.515 exceeds the 0.05 threshold, suggesting that this relationship is not statistically significant. Thus, there is no strong evidence that FoMO directly impacts Gen Z's buying behavior in this study.

These research findings are also supported by the distribution of respondents' answers to all indicators of Fear of Missing Out (FoMO), which

include anxiety (feeling anxious when not connected), need to belong (the need to be part of a group), addiction, and need for popularity (the need to be socially accepted). Overall, the responses yielded an average score of 3.03, which is slightly above the neutral point of 3.00. This can generally be interpreted as respondents exhibiting a moderate level of FoMO. In other words, respondents neither fully agreed nor disagreed with the statements that reflect FoMO symptoms, but there is a tendency to begin experiencing these aspects. This condition indicates that feelings of anxiety, when disconnected, the desire to belong, and the urge to be acknowledged or accepted socially have started to influence the behavioral and psychological patterns of respondents. Thus, although the influence of FoMO has not yet reached a high level, these findings are significant in highlighting the emotional attachment trends to media, especially among Generation Z, who are highly active in the digital space.

FoMO refers to the anxiety of missing out on rewarding experiences, often linked to intense social media use. While prior research highlights that FoMO influence is context-dependent, this study finds it has no significant impact on Generation Z purchase decisions. This may stem from factors like consumer fatigue toward urgency-driven marketing, a stronger focus on authenticity and value, and more rational buying behavior. FoMO does not always directly lead to impulsive buying decisions without the presence of supporting factors such as social context or specific promotional triggers (Good & Hyman, 2020). Previous research findings also indicate that growing concerns over privacy have led to social media fatigue among consumers. Nevertheless, consumers' conscious decision to remain engaged on social media reflects their belief that continued usage offers more positive outcomes compared to discontinuing its use (Bright & Logan, 2018).

FoMO can increase the intensity of social media use, but its influence on purchasing behavior is more affected by other psychological factors such as self-control, materialism, and impulsivity. This reinforces the view that FoMO is not a primary determinant in purchase decision-making, especially among consumers with a higher level of awareness regarding their consumption goals (Przybylski et al., 2013). Furthermore, the Uses and Gratifications (U&G) Theory can be applied to understand these findings. This theory posits that individuals use media based on their personal needs, such as the need for information, social interaction, entertainment, or self recognition. In the context of digitally active Generation Z, their motivation for using social media is more oriented toward information seeking and self-identity building, rather than merely following trends or succumbing to social pressure. This condition also explains why FoMO does not show a significant influence on purchase decisions. Studies have shown that FoMO does not affect impulsive buying behavior. Additionally, the self-control variable is also unable to moderate the influence between EWOM and impulsive buying, nor between FoMO and impulsive buying (Aenaya et al., 2024). In addition, within the increasingly dynamic landscape of digital marketing, consumers, particularly those in Generation Z, tend to be more critical of promotional messages that are overly urgent or manipulative. They are inclined to disregard urgency-based marketing techniques such as limited offers or last chance deals, perceiving these strategies as inauthentic or overly used. As a result, the psychological effect of FoMO becomes more restricted in influencing their purchasing decisions.

The results of this study also align with Self-Determination Theory, which

highlights the role of intrinsic motivation in shaping human behavior. When individuals feel that their decisions are made autonomously and align with their values, external influences such as social pressure or FoMO become less dominant (Deci & Ryan, 2000). This appears to be reflected in the behavior of Generation Z respondents in this study, who demonstrate a tendency toward more rational purchasing decisions, despite being exposed to symptoms of FoMO as indicated by the distribution of their responses. The findings are also supported by previous research, which shows that FoMO has a negative and non-significant effect in mediating the influence of social anxiety on purchasing decisions (Permana et al., 2025). In other words, Generation Z digital activeness does not automatically make them more vulnerable to social pressures such as FoMO, especially if they are aware of the digital marketing strategies used by brands. Although FoMO is theoretically considered one of the factors that may influence purchasing decisions, its actual impact largely depends on social context, consumers' values, and their level of digital maturity. As digital natives, Generation Z appears to be shifting toward more selective, reflective, and value-based consumption patterns. Therefore, it is necessary to re-evaluate the effectiveness of marketing strategies that rely on urgency or social pressure, and instead focus on creating brand experiences that are meaningful, transparent, and relevant to their needs.

Conclusion

Based on the results of the data analysis, the F-statistic value of 0.813 and the p-value of 0.000 indicate that artificial intelligence (AI) significantly influences the online purchasing decisions of Generation Z on the Shopee platform. These findings offer empirical evidence that the adoption of AI technology substantially contributes to shaping consumer preferences and purchasing behavior among digital-native youth. In contrast, the f-square value of 0.018 and the p-value of 0.515 demonstrate that the Fear of Missing Out (FoMO) variable exerts only a marginal and statistically insignificant effect on the purchasing decisions of Generation Z. Therefore, the empirical data do not provide sufficient support to establish FoMO as a key determinant influencing purchase behavior within this context.

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