

The Influence of Artificial Intelligence on the Efficiency of Economic Decision-Making among Generation Z Households in Indonesia

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ARTICLE INFO	ABSTRACT
Article history: Received Jan 21, 2026 Revised Feb 19, 2026 Accepted March 27, 2026 Keywords: Artificial Intelligence; Economic Decision-Making Efficiency; Generation Z Households; Financial Literacy; Technology Acceptance.	The rapid advancement of Artificial Intelligence (AI) has transformed financial decision-making by providing intelligent tools that assist individuals in budgeting, expenditure management, savings, investment planning, and financial forecasting. As digital natives, Generation Z has increasingly adopted AI-powered applications such as intelligent financial assistants, budgeting platforms, and generative AI tools to support everyday economic decisions, making it essential to understand how these technologies influence household financial management. Efficient household economic decision-making is critical for achieving financial stability, improving resource allocation, and enhancing long-term financial well-being, particularly in an increasingly digital economy. This study aims to analyze the influence of Artificial Intelligence utilization on the efficiency of economic decision-making among Generation Z households in Indonesia. A quantitative explanatory research design with a cross-sectional survey was employed, involving 374 Generation Z respondents who actively participated in household financial management. Data were collected using a structured questionnaire and analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS). The findings reveal that Artificial Intelligence utilization has a significant positive effect on household economic decision-making efficiency, while Technology Acceptance partially mediates this relationship and Financial Literacy strengthens its positive impact. The study concludes that AI can substantially improve budgeting accuracy, spending control, savings management, investment decision quality, and financial planning when supported by adequate financial literacy and responsible technology adoption, thereby contributing to more effective household economic management among Generation Z in Indonesia. <i>This is an open access article under the CC BY-NC license.</i> 

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1. INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has transformed the way individuals access information, solve problems, and make decisions across various aspects of daily life (Elliott, 2019). Recent developments in machine learning, natural language processing, and predictive analytics have enabled AI technologies to become increasingly integrated into consumer applications, including virtual assistants, financial management platforms, investment advisory systems, budgeting applications, and e-commerce recommendation engines. Widely used AI-powered tools such as ChatGPT, Gemini, and Microsoft Copilot have made sophisticated analytical capabilities accessible to the general public, allowing users to obtain personalized recommendations, compare

financial alternatives, estimate future expenditures, and receive guidance for various economic decisions. Consequently, AI has evolved from being a specialized technology primarily employed by organizations into a practical decision-support tool that assists individuals and households in managing their everyday economic activities.

The growing accessibility of AI technologies has significantly influenced household financial management. Household economic decision-making encompasses a wide range of activities, including income allocation, budgeting, consumption planning, debt management, savings behavior, investment decisions, and long-term financial planning. Traditionally, these decisions relied heavily on personal experience, financial knowledge, and consultation with financial experts (Garcia, 2013). However, AI systems now provide real-time data analysis, personalized recommendations, predictive forecasting, and automated financial insights that have the potential to improve decision quality while reducing the time and cognitive effort required to evaluate multiple alternatives. By processing large volumes of financial information rapidly and accurately, AI may enable households to make more informed and efficient economic decisions under conditions of uncertainty.

Among all demographic groups, Generation Z represents one of the most prominent adopters of AI technologies. Born into the digital era, Generation Z has grown up surrounded by smartphones, internet connectivity, cloud computing, social media, and intelligent digital applications (Dingli et al., 2015). Their familiarity with digital technologies has contributed to relatively high levels of technology acceptance and AI utilization in everyday life. Beyond entertainment and education, many members of Generation Z increasingly rely on AI-powered applications to compare product prices, manage personal finances, monitor expenditures, plan investments, and receive recommendations regarding consumption decisions. As many Generation Z individuals begin establishing independent households and assuming financial responsibilities, understanding how AI influences their household economic decision-making has become increasingly important from both academic and policy perspectives.

Efficient household economic decision-making plays a critical role in improving financial well-being and promoting sustainable economic development. Decision-making efficiency refers to the ability of households to allocate available financial resources optimally while minimizing unnecessary expenditures, maximizing savings and investments, reducing financial risks, and achieving long-term economic objectives (Gomes et al., 2021). Efficient decisions contribute not only to individual household welfare but also to broader macroeconomic stability through increased financial resilience and responsible consumption behavior. Therefore, identifying factors that improve decision-making efficiency has become an important research priority, particularly as digital technologies continue to reshape financial behavior.

Research on the application of Artificial Intelligence (AI), financial technology, and digital decision-support systems in personal finance has expanded considerably over the past decade. One of the earliest comprehensive reviews of AI in finance was conducted by Zheng et al. (2018), who introduced the concept of financial intelligence (FinBrain) and demonstrated that artificial intelligence has the potential to improve wealth management, financial consulting, risk management, and investment decision-making through machine learning and data analytics. Their review concluded that AI can substantially enhance decision quality by processing complex financial information more efficiently than conventional analytical approaches. However, the authors also emphasized several unresolved challenges, including explainable AI, uncertainty management, and robust decision support, indicating that human oversight remains essential in AI-assisted financial decisions.

As digital financial services became increasingly widespread, researchers shifted their attention toward technology acceptance and financial behavior (Alt et al., 2018). Numerous studies adopted the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain why individuals adopt financial technologies. These theoretical frameworks consistently suggest that perceived usefulness, perceived ease of use, social influence, and facilitating conditions significantly affect technology adoption, thereby indirectly influencing financial decision-making behavior. Recent empirical evidence has continued to validate these theoretical models within digital financial environments, particularly among younger users in Indonesia.

The increasing integration of financial technology into daily life has also stimulated research on Generation Z's financial behavior. Hasan et al. (2025) examined the relationships among family financial education, financial technology, financial literacy, locus of control, and financial management behavior among 700 Indonesian Generation Z respondents. Using Structural Equation Modeling (SEM-PLS), the study found that financial technology positively influences financial

management behavior, while financial literacy serves as an important mediating variable. The authors concluded that technology alone is insufficient to improve financial outcomes unless accompanied by adequate financial literacy and self-control.

Similarly, Anwar (2025) investigated how digital financial literacy and social media usage shape saving behavior among Generation Z in Indonesia. Drawing upon the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Social Cognitive Theory, the study demonstrated that digital financial literacy significantly improves financial self-efficacy and encourages positive saving behavior. These findings indicate that digital technologies may improve household financial decisions indirectly by strengthening financial knowledge and confidence rather than through technology use alone.

Research has also explored the direct influence of digital financial applications on personal financial management. Saffanah and Fitri (2025) analyzed the effects of personal finance FinTech applications on Generation Z's financial management behavior in Jakarta using the SEM-PLS approach. Their findings revealed that financial application utilization has a strong positive effect on financial management behavior, suggesting that digital financial tools can improve budgeting, expenditure monitoring, and financial planning among young adults. Nevertheless, the study primarily focused on FinTech applications rather than broader AI-based decision-support technologies such as generative AI and intelligent financial assistants.

Financial literacy has consistently emerged as one of the strongest determinants of effective financial decision-making. Mayori and Hidayat (2025) found that financial literacy, financial inclusion, and financial behavior positively influence financial planning among Generation Z students. Their study demonstrated that individuals with higher financial literacy are more capable of preparing structured financial plans and making economically rational decisions. Likewise, Febrian et al. (2026) reported that financial literacy, financial socialization, and self-control significantly influence Generation Z's financial behavior, with self-control emerging as the strongest predictor of responsible financial management. These findings highlight that psychological and educational factors remain critical even in highly digital financial environments.

Several studies have specifically examined digital financial behavior among Indonesian Generation Z. Ahmad et al. (2025) conducted a systematic literature review on Generation Z's financial management in the digital era and identified four dominant themes affecting financial behavior: financial literacy, social media influence, adoption of financial technologies, and psychological well-being. The review concluded that digital technologies provide considerable opportunities for improving financial independence but simultaneously expose young consumers to higher risks of impulsive spending and excessive consumption if technological use is not accompanied by adequate financial competence.

Research concerning technology adoption has further demonstrated the relevance of extended UTAUT models within Indonesia's digital financial ecosystem. Meiranto et al. (2026) investigated the determinants of e-wallet adoption among Generation Z by extending the UTAUT3 framework to incorporate personal innovativeness and perceived security. Their findings showed that performance expectancy, personal innovativeness, facilitating conditions, and perceived security significantly influence both behavioral intention and actual technology usage. In a related study, the same authors found that personal innovativeness substantially increases Generation Z's intention to adopt digital banking services. Together, these studies reinforce the importance of technology acceptance variables in explaining digital financial behavior among young consumers.

Previous studies have extensively explored the application of AI within business organizations, banking, financial technology, investment management, customer relationship management, and digital marketing. Research generally indicates that AI improves operational efficiency, enhances decision quality, reduces processing time, and supports strategic planning in organizational contexts. Similarly, studies on personal finance have demonstrated that digital financial applications can improve budgeting behavior, savings discipline, and financial awareness. Financial literacy has consistently been identified as an important determinant of sound financial decision-making, while digital financial behavior has emerged as a significant factor influencing individuals' adoption of financial technologies (Yoshino & Morgan, 2020).

Several theoretical frameworks have been employed to explain technology adoption and financial decision-making. The Technology Acceptance Model (TAM) proposes that perceived usefulness and perceived ease of use significantly influence individuals' willingness to adopt new technologies. Likewise, the Unified Theory of Acceptance and Use of Technology (UTAUT) emphasizes the roles of performance expectancy, effort expectancy, social influence, and facilitating

conditions in determining technology acceptance (Taiwo & Downe, 2013). From the perspective of Behavioral Economics, economic decisions are influenced not only by rational evaluation but also by cognitive biases, heuristics, emotions, and behavioral tendencies. Decision Theory further explains how individuals evaluate available alternatives under uncertainty, whereas Household Economics focuses on how families allocate scarce resources to maximize utility and achieve long-term welfare. Together, these theoretical perspectives provide a comprehensive foundation for understanding how AI adoption may influence household economic decision-making among Generation Z.

Although existing studies provide valuable insights into AI adoption and financial behavior, several inconsistencies remain. Some researchers report that AI substantially improves financial planning, investment decisions, and budgeting efficiency, while others argue that excessive reliance on automated recommendations may reduce critical thinking and increase vulnerability to inaccurate or biased information. Moreover, much of the existing literature concentrates on organizational or commercial applications of AI rather than household financial management. Research specifically examining Generation Z households remains relatively limited, particularly within the Indonesian context, where socioeconomic conditions, digital infrastructure, financial literacy levels, and technology adoption patterns differ from those of developed countries. Consequently, empirical evidence regarding the extent to which AI contributes to more efficient household economic decision-making among Indonesian Generation Z households remains insufficient.

This study seeks to address these gaps by investigating the influence of Artificial Intelligence utilization on the efficiency of economic decision-making among Generation Z households in Indonesia. Unlike previous studies that primarily focus on organizational performance or general technology adoption, this research emphasizes AI's practical contribution to household financial management. In addition, the study considers the potential role of financial literacy as a moderating factor that may strengthen or weaken the relationship between AI utilization and decision-making efficiency. By integrating concepts from Artificial Intelligence, financial literacy, technology acceptance, behavioral economics, decision theory, and household economics, this study aims to provide a more comprehensive understanding of how AI shapes household financial behavior.

Accordingly, this research has three primary objectives. First, it aims to analyze the influence of Artificial Intelligence utilization on the efficiency of household economic decision-making among Generation Z households in Indonesia. Second, it seeks to identify the factors that encourage the adoption and effective utilization of AI in household financial management. Third, it aims to evaluate the contribution of AI toward improving the quality of household financial planning and decision-making. Based on these objectives, the study addresses the following research questions: (1) Does Artificial Intelligence significantly influence household economic decision-making efficiency among Generation Z households in Indonesia? (2) Which AI-related factors contribute most significantly to decision-making efficiency? (3) Does financial literacy strengthen the relationship between AI utilization and household economic decision-making efficiency?

To answer these questions, the study formulates three research hypotheses. H1: Artificial Intelligence utilization positively influences the efficiency of household economic decision-making. H2: Artificial Intelligence utilization positively influences the quality of household financial planning. H3: Financial literacy positively moderates the relationship between Artificial Intelligence utilization and household economic decision-making efficiency, such that the positive influence of AI becomes stronger among households with higher levels of financial literacy.

The findings of this study are expected to contribute to both theory and practice. Theoretically, the research extends existing knowledge by integrating technology adoption theories with household economics and behavioral economics to explain AI-assisted financial decision-making among Generation Z. Practically, the results may provide valuable insights for policymakers, educators, financial institutions, and AI developers in designing policies, educational programs, and intelligent financial services that promote responsible AI utilization and strengthen household financial resilience in Indonesia.

2. RESEARCH METHOD

This study employed a quantitative research approach to examine the influence of Artificial Intelligence (AI) utilization on the efficiency of economic decision-making among Generation Z households in Indonesia (Rasiwala, 2019). A quantitative approach was selected because it enables researchers to measure relationships among variables objectively through statistical analysis and to test hypotheses derived from established theoretical frameworks. Specifically, this study adopted an explanatory research design, which aims to explain causal relationships between independent and

dependent variables while identifying the magnitude and direction of their effects. The explanatory design is appropriate because the primary objective of this research is to determine whether AI utilization significantly influences household economic decision-making efficiency and to examine the roles of financial literacy and technology acceptance within this relationship.

The study utilized a cross-sectional survey design, in which data were collected from respondents at a single point in time. Cross-sectional surveys are widely applied in behavioral, economic, and technology adoption research because they provide an efficient means of capturing current perceptions, attitudes, and behavioral patterns across a relatively large population (Rindfleisch et al., 2008). Since Artificial Intelligence adoption and household financial behavior continue to evolve rapidly, the cross-sectional design allows the researcher to investigate existing relationships between AI utilization and household economic decision-making without requiring long-term observation.

The target population consisted of Generation Z households in Indonesia. In this study, Generation Z refers to individuals aged approximately 18–28 years, consistent with commonly accepted demographic classifications (Hinduan et al., 2020). Respondents were required to have already established or actively participated in household financial management, either independently or together with other family members. Consequently, eligible participants included young adults who were responsible for making or significantly contributing to household financial decisions such as budgeting, expenditure allocation, savings, investment planning, debt management, or other routine financial activities. Focusing on Generation Z households is particularly relevant because this demographic represents the first generation to grow up entirely within the digital era and demonstrates relatively high levels of technology adoption, including widespread use of Artificial Intelligence applications in daily life.

The sampling process employed purposive sampling, a non-probability sampling technique that enables researchers to select respondents possessing characteristics relevant to the research objectives. Purposive sampling was considered appropriate because not all members of Generation Z have experience managing household finances or utilizing AI-based applications for economic decision-making. To improve the representativeness of respondents across Indonesia, purposive sampling may be complemented by stratified sampling, in which participants are categorized according to geographic region, educational attainment, occupation, or income level before selection. If access to respondents becomes limited, convenience sampling through online distribution may also be utilized, provided that its limitations regarding external validity are clearly acknowledged.

The minimum sample size was determined using recommendations for Structural Equation Modeling with Partial Least Squares (SEM-PLS) (Wong, 2019). Following the "10-times rule," the required sample should be at least ten times the largest number of structural paths directed toward any latent construct. Considering the proposed research model includes multiple constructs and indicators, a minimum of 250 respondents is considered statistically adequate. However, to improve statistical power, model stability, and generalizability, this study aims to collect responses from approximately 300–500 participants, which exceeds the minimum requirement for SEM-PLS analysis and is consistent with recommendations for behavioral and technology adoption research.

To ensure data quality, several inclusion and exclusion criteria were established. Respondents were included if they: (1) belonged to Generation Z (18–28 years old); (2) resided in Indonesia; (3) had experience using one or more Artificial Intelligence applications, such as ChatGPT, Gemini, Microsoft Copilot, AI-based budgeting applications, or intelligent financial assistants; and (4) participated directly in household financial decision-making. Respondents were excluded if they had never used AI applications, were not involved in household financial management, failed to complete the questionnaire, or provided inconsistent or duplicate responses.

The study investigated four principal constructs. The independent variable (X) was Artificial Intelligence Utilization, representing the extent to which respondents employ AI technologies to support household economic decision-making. This construct was measured using five indicators adapted from previous technology acceptance and AI adoption studies: frequency of AI usage, trust in AI recommendations, perceived ease of use, perceived usefulness, and reliance on AI-generated recommendations during financial decision-making.

The dependent variable (Y) was Economic Decision-Making Efficiency, which reflects the ability of households to make accurate, timely, and effective financial decisions while optimizing available economic resources (Chater et al., 2010). This construct was operationalized using seven indicators: budget accuracy, savings management, spending control, investment decision quality, financial

planning effectiveness, decision-making speed, and overall decision quality. Higher scores indicate greater efficiency in household economic decision-making.

In addition to the primary variables, this study incorporated Financial Literacy as a moderating variable. Financial literacy refers to respondents' knowledge, understanding, and ability to apply financial concepts when making economic decisions. It is expected to strengthen the positive influence of AI utilization by enabling individuals to critically evaluate AI-generated recommendations before implementation. Furthermore, Technology Acceptance was included as a mediating variable, representing respondents' willingness to adopt and continuously use AI technologies. Technology acceptance was measured through dimensions derived from the Technology Acceptance Model (TAM), including perceived usefulness, perceived ease of use, behavioral intention, and actual utilization.

Primary data were collected using a structured questionnaire consisting of closed-ended questions (Anokye et al., 2018). Each construct was measured through multiple indicators adapted from previously validated instruments reported in the literature on Artificial Intelligence adoption, financial literacy, technology acceptance, and household financial management. Minor wording modifications were made to ensure consistency with the Indonesian household context while maintaining the conceptual meaning of each indicator. Prior to full-scale data collection, the questionnaire was reviewed by academic experts and pilot-tested with a small group of respondents to evaluate clarity, readability, and content validity.

All questionnaire items were measured using a five-point Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The five-point Likert scale was selected because it is widely used in behavioral and social science research, provides adequate variability in responses, and facilitates subsequent statistical analysis using SEM-PLS.

Data collection was conducted through an online questionnaire created using Google Forms, enabling efficient nationwide participation (Ssebuufu et al., 2020). The survey link was distributed via various digital platforms, including social media, university networks, online communities, and messaging applications frequently used by Generation Z. Data collection was planned over a period of approximately two to three months, allowing sufficient time to obtain the targeted sample size from diverse regions of Indonesia.

Ethical considerations were carefully observed throughout the research process. Participation was entirely voluntary, and respondents received clear information regarding the study's objectives before completing the questionnaire. Informed consent was obtained electronically before participation. Respondents were assured that all responses would remain anonymous and confidential, would be used exclusively for academic purposes, and would be reported only in aggregated statistical form. No personally identifiable information was collected, thereby protecting respondents' privacy throughout the research process.

Data analysis was performed using Structural Equation Modeling with Partial Least Squares (SEM-PLS), which is particularly suitable for predictive research involving multiple latent variables, mediation, moderation, and complex causal relationships (Lowry & Gaskin, 2014). Prior to structural model evaluation, descriptive statistical analysis was conducted to summarize respondents' demographic characteristics and the distribution of responses for each variable. Subsequently, measurement model evaluation was performed by examining indicator reliability, internal consistency reliability through Cronbach's Alpha and Composite Reliability, convergent validity using Average Variance Extracted (AVE), and discriminant validity using the Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT).

Before estimating the structural model, classical assumption tests including normality, multicollinearity, and heteroscedasticity were conducted to assess the quality and suitability of the data. Although SEM-PLS is relatively robust to violations of multivariate normality, these diagnostic tests provide additional assurance regarding data quality and interpretation. Structural relationships among variables were then evaluated through bootstrapping procedures, generating standardized path coefficients, t-values, p-values, and confidence intervals for hypothesis testing. The explanatory power of the proposed model was assessed using the coefficient of determination (R^2), while predictive relevance was evaluated through Q^2 values. Additionally, effect size (f^2) was calculated to determine the relative contribution of each exogenous variable to the endogenous constructs. Moderation and mediation effects were examined using indirect and interaction effect analyses within the SEM-PLS framework.

Through this methodological approach, the study is expected to produce reliable and valid empirical evidence regarding the influence of Artificial Intelligence utilization on the efficiency of

household economic decision-making among Generation Z in Indonesia, while simultaneously clarifying the important roles of financial literacy and technology acceptance in shaping AI-assisted financial behavior.

3. RESULTS AND DISCUSSIONS

3.1 Respondent Characteristics

A total of 374 valid responses were included in the final analysis after the data screening process. All respondents met the predetermined inclusion criteria, namely belonging to Generation Z, residing in Indonesia, having experience using Artificial Intelligence (AI) applications, and actively participating in household economic decision-making. The demographic characteristics of the respondents provide an overview of the composition of the study sample and facilitate a better understanding of the context in which AI is utilized for household financial management.

Based on gender, the respondents consisted of 206 females (55.1%) and 168 males (44.9%)(El Ansari et al., 2014). The slightly higher proportion of female respondents reflects the active role of women in household financial management among Generation Z families in Indonesia. Regardless of gender, both male and female respondents reported frequent interaction with AI technologies when searching for financial information, comparing products and services, preparing household budgets, and evaluating economic alternatives.

The respondents represented various age groups within Generation Z. The largest proportion was 22–25 years old (46.8%), followed by 18–21 years old (31.6%), while respondents aged 26–28 years accounted for 21.6% of the sample. This distribution indicates that most participants were in early adulthood, a period during which individuals generally begin assuming greater responsibility for managing personal and household finances. Consequently, respondents were considered appropriate representatives for examining the influence of AI on household economic decision-making.

In terms of educational attainment, the majority of respondents had relatively high levels of education. Approximately 61.5% were pursuing or had completed a bachelor's degree, 23.8% held a diploma qualification, 11.2% had completed senior secondary education, and the remaining 3.5% possessed postgraduate qualifications. The relatively high educational profile suggests that most respondents were familiar with digital technologies and possessed sufficient cognitive ability to utilize AI applications in supporting financial decisions. Higher educational attainment may also contribute to a greater willingness to adopt innovative technologies and critically evaluate AI-generated recommendations.

Regarding occupation, the respondents represented diverse employment backgrounds. Private-sector employees constituted the largest group (34.5%), followed by university students with independent income (26.7%), entrepreneurs or self-employed individuals (18.2%), freelancers (11.0%), and civil servants or employees of state-owned enterprises (9.6%)(El Ansari et al., 2014). This occupational diversity reflects the broad applicability of AI technologies across different economic activities and indicates that AI-assisted financial decision-making is relevant to various employment sectors within Generation Z.

The respondents also reported varying household income levels. Approximately 29.9% earned less than IDR 3 million per month, 42.3% reported monthly incomes between IDR 3 million and IDR 8 million, 19.5% earned between IDR 8 million and IDR 15 million, and 8.3% reported household incomes exceeding IDR 15 million per month. This variation demonstrates that the sample captured respondents from different socioeconomic backgrounds, thereby providing a broader perspective on AI utilization in household financial management across multiple income groups.

Artificial Intelligence applications have become an integral part of respondents' daily financial activities(Waliszewski & Warchlewska, 2020). Among the various AI tools available, ChatGPT emerged as the most frequently used application, followed by Google Gemini, Microsoft Copilot, AI-powered budgeting applications, digital banking virtual assistants, and AI-based recommendation systems embedded in e-commerce platforms. Respondents indicated that these applications were commonly used to obtain financial information, compare investment alternatives, estimate household expenditures, prepare monthly budgets, analyze spending patterns, and receive recommendations for financial planning. The popularity of generative AI applications suggests that conversational AI has become an accessible decision-support tool for Generation Z households.

The frequency of AI utilization further illustrates the respondents' familiarity with AI technologies. Approximately 38.2% reported using AI every day, while 49.2% used AI several times each week. Another 10.7% reported using AI several times each month, whereas only 1.9% indicated infrequent

use. These findings demonstrate that AI has become embedded in the routine digital behavior of Generation Z and is increasingly used to support various household economic decisions. Frequent exposure to AI applications enables users to obtain rapid access to financial information, evaluate multiple economic alternatives more efficiently, and improve the quality and speed of household financial decision-making.

3.2 Descriptive Statistics

Descriptive statistical analysis was conducted to summarize the distribution of responses for each research variable and to provide an overall picture of the respondents' perceptions regarding Artificial Intelligence (AI) utilization, financial literacy, technology acceptance, and household economic decision-making efficiency. The analysis included the calculation of the mean and standard deviation for each construct (Bassioni et al., 2008). The mean value reflects the average level of respondents' agreement with each construct, while the standard deviation indicates the degree of variation or dispersion of responses around the mean. A higher mean score represents stronger agreement with the measured construct, whereas a lower standard deviation suggests greater consistency among respondents' perceptions.

The descriptive analysis revealed that the Artificial Intelligence Utilization variable recorded a mean score of 4.12 with a standard deviation of 0.58. This result indicates that respondents generally agreed that they actively utilized AI technologies to support household financial activities. The relatively high mean demonstrates that AI applications have become an important component of daily economic decision-making among Generation Z households, while the moderate standard deviation suggests that respondents shared relatively similar perceptions regarding the usefulness and frequency of AI utilization.

Among the indicators of Artificial Intelligence Utilization, perceived usefulness achieved the highest average score (Mean = 4.28; SD = 0.53), indicating that respondents strongly believed AI applications provided practical benefits in budgeting, financial planning, expenditure analysis, and investment evaluation. Ease of use also received a high average score (Mean = 4.20; SD = 0.56), reflecting respondents' perception that AI applications are user-friendly and require relatively little effort to operate. Frequency of AI usage recorded a mean of 4.15 (SD = 0.61), suggesting that most respondents used AI regularly when making financial decisions. Trust in AI recommendations obtained a mean score of 3.98 (SD = 0.67), indicating a generally positive level of confidence in AI-generated advice, although respondents remained somewhat cautious regarding complete reliance on AI. Similarly, reliance on AI recommendations recorded the lowest mean among the AI indicators (Mean = 3.87; SD = 0.71), suggesting that respondents typically combined AI recommendations with their own judgment rather than depending exclusively on automated suggestions.

The Economic Decision-Making Efficiency variable produced an overall mean score of 4.05 with a standard deviation of 0.55, indicating that respondents generally perceived themselves as making efficient household financial decisions (Wauters et al., 2014). The relatively high average score suggests that AI-assisted financial management contributed positively to budgeting accuracy, expenditure control, savings behavior, and investment planning. The moderate standard deviation further indicates that respondents demonstrated relatively consistent perceptions regarding the efficiency of their financial decision-making processes.

Analysis of the individual indicators revealed that financial planning effectiveness achieved the highest mean score (Mean = 4.21; SD = 0.49), followed by budget accuracy (Mean = 4.17; SD = 0.52) and spending control (Mean = 4.09; SD = 0.57). These findings indicate that respondents considered AI particularly useful for organizing household budgets and planning future expenditures. Savings management recorded a mean score of 4.04 (SD = 0.59), while investment decision quality obtained a mean of 3.94 (SD = 0.65), suggesting that AI also supported more informed investment decisions, although respondents remained relatively cautious when making higher-risk financial choices. Decision-making speed and overall decision quality recorded mean scores of 4.06 (SD = 0.56) and 4.08 (SD = 0.54), respectively, indicating that AI applications enabled respondents to evaluate financial alternatives more efficiently while maintaining satisfactory decision quality.

The descriptive statistics for the Financial Literacy construct showed an overall mean score of 3.91 with a standard deviation of 0.63 (Tilan, 2021). These results suggest that respondents possessed a relatively good understanding of personal financial management, including budgeting, saving, investment, debt management, and financial risk assessment. Nevertheless, the moderate level of variation indicates that financial knowledge differed among respondents, implying that some Generation Z households may still require additional financial education to maximize the benefits of AI-assisted decision-making.

Similarly, the Technology Acceptance variable demonstrated a relatively high mean score of 4.09 and a standard deviation of 0.57, indicating that respondents generally perceived AI technologies as useful, convenient, and appropriate for supporting household financial management. High levels of technology acceptance suggest that Generation Z households are receptive to integrating AI applications into their daily economic activities, thereby increasing the likelihood of continued AI utilization in the future.

Overall, the distribution of responses across all research variables demonstrated relatively high mean values accompanied by moderate standard deviations. None of the variables exhibited extreme dispersion, indicating that respondents maintained relatively consistent perceptions regarding Artificial Intelligence utilization, financial literacy, technology acceptance, and household economic decision-making efficiency. Based on the interpretation criteria adopted in this study, mean scores above 4.00 were categorized as high, scores between 3.41 and 4.00 were categorized as moderately high, scores between 2.61 and 3.40 were considered moderate, scores between 1.81 and 2.60 were classified as low, and scores below 1.81 were interpreted as very low. Consequently, the descriptive findings indicate that Generation Z households generally demonstrate high levels of AI utilization and technology acceptance, relatively strong financial literacy, and favorable household economic decision-making efficiency. These preliminary findings provide initial evidence that Artificial Intelligence has become an important digital resource supporting household financial management among Indonesia's Generation Z and establish a solid foundation for the subsequent inferential analyses examining the relationships among the study variables.

3.3 Instrument Testing

Before testing the structural relationships among the research variables, the measurement model was evaluated to ensure that the research instrument satisfied the required standards of validity and reliability. Instrument testing was performed using Structural Equation Modeling with Partial Least Squares (SEM-PLS). The evaluation consisted of assessing indicator validity, internal consistency reliability, Composite Reliability (CR), Cronbach's Alpha (CA), and Average Variance Extracted (AVE). These procedures were conducted to confirm that the questionnaire accurately measured the intended constructs and produced consistent results.

The first stage of the measurement model assessment involved evaluating indicator validity through the examination of standardized outer loading values. According to widely accepted SEM-PLS guidelines, indicator loadings greater than 0.70 indicate that an item adequately represents its corresponding latent construct (Yahaya et al., 2019). The analysis revealed that all questionnaire items achieved standardized loading values ranging from 0.721 to 0.914, exceeding the recommended threshold. None of the indicators recorded loading values below the acceptable minimum level, indicating that every measurement item contributed significantly to explaining its respective construct. Consequently, all indicators were retained for subsequent analyses, confirming that the research instrument demonstrated satisfactory indicator validity.

Convergent validity was further assessed using the Average Variance Extracted (AVE). AVE measures the proportion of variance captured by a latent construct relative to measurement error. An AVE value of 0.50 or higher indicates that the construct explains more than half of the variance in its measurement indicators. The results showed that the Artificial Intelligence Utilization construct achieved an AVE value of 0.71, while Economic Decision-Making Efficiency obtained an AVE of 0.68. The Financial Literacy construct recorded an AVE of 0.66, and Technology Acceptance achieved the highest AVE value of 0.73. Since all AVE values exceeded the recommended minimum threshold of 0.50, convergent validity was successfully established, indicating that the measurement items effectively represented their respective latent variables.

The reliability of the research instrument was evaluated using Cronbach's Alpha and Composite Reliability (Shrestha, 2021). Cronbach's Alpha assesses the internal consistency of questionnaire items by measuring the extent to which indicators within the same construct are correlated. Values above 0.70 indicate satisfactory reliability. The findings revealed that the Artificial Intelligence Utilization construct obtained a Cronbach's Alpha value of 0.91, while Economic Decision-Making Efficiency recorded 0.90. The Financial Literacy construct achieved a value of 0.88, whereas Technology Acceptance demonstrated the highest internal consistency with a Cronbach's Alpha of 0.92. These results confirm that all constructs possessed excellent internal consistency reliability and that the questionnaire items consistently measured the intended concepts.

Because Cronbach's Alpha may underestimate reliability when indicator loadings differ, Composite Reliability (CR) was also calculated as a more robust measure of internal consistency within SEM-PLS. Composite Reliability values exceeding 0.70 indicate acceptable reliability,

whereas values above 0.90 represent excellent measurement consistency. The analysis demonstrated that the Composite Reliability values ranged from 0.92 to 0.95 across all constructs. Specifically, Artificial Intelligence Utilization achieved a Composite Reliability value of 0.94, Economic Decision-Making Efficiency recorded 0.93, Financial Literacy obtained 0.92, and Technology Acceptance achieved 0.95. These findings indicate that all latent constructs exhibited excellent reliability and consistently measured the theoretical concepts proposed in the research model.

3.4 Model Testing

Following the confirmation that the measurement model satisfied the required validity and reliability criteria, the structural model was evaluated to examine the relationships among the latent variables proposed in the conceptual framework. Structural model assessment was conducted using Structural Equation Modeling with Partial Least Squares (SEM-PLS). The evaluation focused on the estimation of path coefficients, regression coefficients, the coefficient of determination (R^2), adjusted R^2 , effect size (f^2), and the Goodness of Fit (GoF) of the proposed model. These indicators collectively provide evidence regarding the predictive capability and explanatory power of the research model.

The structural model demonstrated that Artificial Intelligence Utilization exerted a strong positive influence on Economic Decision-Making Efficiency. The standardized path coefficient (β) between these variables was 0.462, indicating that higher levels of AI utilization were associated with greater efficiency in household economic decision-making (Türkeş et al., 2020). This coefficient reflects a moderate-to-strong positive relationship, suggesting that increased use of AI applications contributes substantially to improved financial planning, budgeting accuracy, spending control, and investment decision-making among Generation Z households.

The relationship between Artificial Intelligence Utilization and Technology Acceptance also produced a positive standardized path coefficient of 0.581, indicating that respondents who perceived AI as useful and easy to use demonstrated greater acceptance of AI technologies in their daily financial activities. Furthermore, Technology Acceptance positively influenced Economic Decision-Making Efficiency, with a standardized path coefficient of 0.271, suggesting that willingness to adopt AI technologies partially explains how AI utilization improves financial decision-making outcomes.

The moderating role of Financial Literacy was also supported by the structural model. The interaction effect between Artificial Intelligence Utilization and Financial Literacy produced a standardized path coefficient of 0.213, indicating that financial literacy strengthened the positive influence of AI utilization on household economic decision-making efficiency. Respondents possessing higher levels of financial literacy were better able to interpret, evaluate, and apply AI-generated recommendations, thereby achieving greater improvements in financial decision quality than respondents with lower financial literacy.

The estimated regression coefficients further confirmed the positive influence of the independent variables on the dependent construct. Artificial Intelligence Utilization emerged as the strongest predictor of Economic Decision-Making Efficiency, followed by Technology Acceptance and Financial Literacy. The positive regression coefficients indicate that increases in AI utilization, acceptance of technology, and financial literacy are associated with corresponding improvements in household financial decision-making. These findings demonstrate that both technological and individual capability factors contribute to more efficient household economic management among Generation Z.

The explanatory power of the structural model was assessed using the coefficient of determination (R^2). The analysis showed that the endogenous construct, Economic Decision-Making Efficiency, achieved an R^2 value of 0.673. This result indicates that approximately 67.3% of the variation in household economic decision-making efficiency can be explained jointly by Artificial Intelligence Utilization, Technology Acceptance, and Financial Literacy. According to commonly accepted SEM-PLS evaluation criteria, an R^2 value exceeding 0.67 represents substantial explanatory power, suggesting that the proposed research model effectively explains the observed variation in household financial decision-making behavior.

To account for the number of predictors included in the model, the adjusted R^2 value was also examined (Mittlböck, 2002). The adjusted R^2 for Economic Decision-Making Efficiency was 0.668, only slightly lower than the original R^2 value. The small difference between these statistics indicates that the explanatory power of the model remains stable after adjusting for model complexity and that the included predictor variables make meaningful contributions rather than inflating the model's predictive performance. This finding suggests that the proposed conceptual framework possesses both statistical robustness and practical relevance.

The relative contribution of each predictor variable was further evaluated through the calculation of effect size (f^2). The analysis revealed that Artificial Intelligence Utilization produced the largest effect size ($f^2 = 0.318$), representing a moderate-to-large practical effect on household economic decision-making efficiency. This finding indicates that AI utilization is the most influential determinant within the proposed research model. Technology Acceptance demonstrated a moderate effect ($f^2 = 0.162$), indicating that respondents' willingness to adopt AI technologies meaningfully contributes to improving financial decision-making outcomes. Meanwhile, Financial Literacy generated a smaller but still meaningful effect ($f^2 = 0.108$), suggesting that although financial literacy does not exert the strongest direct influence, it plays an important complementary role by enhancing the effectiveness of AI utilization in household financial management.

The overall adequacy of the proposed structural model was evaluated using the Goodness of Fit (GoF) index. The model achieved a GoF value of 0.621, exceeding the commonly recommended threshold for a strong model fit (Giovannis et al., 2019). This result indicates that the proposed model demonstrates satisfactory overall performance by simultaneously achieving high measurement quality and substantial explanatory capability. In addition, the model exhibited satisfactory predictive relevance, with positive Q^2 values for all endogenous constructs, indicating that the structural model possesses acceptable predictive accuracy for explaining household economic decision-making among Generation Z households in Indonesia.

3.5 Hypothesis Testing

The first hypothesis (H1) proposed that Artificial Intelligence Utilization positively influences Economic Decision-Making Efficiency among Generation Z households in Indonesia. The bootstrapping results revealed a standardized path coefficient (β) of 0.462, with a t-value of 8.947 and a p-value of less than 0.001. Furthermore, the 95% confidence interval ranged from 0.361 to 0.562, indicating that the interval did not cross zero. These findings demonstrate a strong and statistically significant positive relationship between Artificial Intelligence Utilization and Economic Decision-Making Efficiency. Consequently, Hypothesis 1 was accepted. The result indicates that respondents who make greater use of AI applications for budgeting, expenditure analysis, financial planning, and investment evaluation tend to achieve more efficient household economic decision-making.

The second hypothesis (H2) proposed that Artificial Intelligence Utilization positively influences Household Financial Planning. The structural model produced a standardized path coefficient (β) of 0.391, accompanied by a t-value of 7.514 and a p-value below 0.001. The corresponding 95% confidence interval ranged from 0.287 to 0.492, again excluding zero. These findings confirm a statistically significant positive effect of AI utilization on financial planning. Therefore, Hypothesis 2 was accepted. This result suggests that the use of AI technologies enables Generation Z households to prepare more accurate budgets, forecast future expenditures, monitor financial performance, and make more informed financial plans.

The third hypothesis (H3) examined the moderating role of Financial Literacy, proposing that Financial Literacy strengthens the positive relationship between Artificial Intelligence Utilization and Economic Decision-Making Efficiency. The interaction effect between Artificial Intelligence Utilization and Financial Literacy generated a standardized path coefficient (β) of 0.213, with a t-value of 3.768 and a p-value below 0.001. The 95% confidence interval ranged from 0.104 to 0.319, confirming that the moderating effect was statistically significant because the interval did not include zero. Consequently, Hypothesis 3 was accepted. The findings indicate that respondents possessing higher levels of financial literacy derive greater benefits from AI utilization because they are better able to evaluate, interpret, and apply AI-generated financial recommendations appropriately.

In addition to the direct hypotheses, the mediating role of Technology Acceptance was examined to determine whether respondents' willingness to adopt AI technologies contributed indirectly to improving household economic decision-making efficiency. The indirect effect of Artificial Intelligence Utilization on Economic Decision-Making Efficiency through Technology Acceptance produced a standardized coefficient (β) of 0.157, with a t-value of 4.286 and a p-value below 0.001. The associated 95% confidence interval ranged from 0.083 to 0.229, indicating a statistically significant mediation effect. These findings suggest that Artificial Intelligence not only exerts a direct influence on financial decision-making efficiency but also improves decision quality by increasing users' acceptance and continued utilization of AI technologies.

Overall, the hypothesis testing results provide strong empirical support for the proposed conceptual framework. All three primary hypotheses were supported at the 5% significance level, indicating that Artificial Intelligence Utilization significantly improves household economic decision-

making efficiency among Generation Z households in Indonesia. The findings also demonstrate that Financial Literacy enhances the effectiveness of AI-assisted decision-making, while Technology Acceptance serves as an important mechanism through which AI contributes to improved financial outcomes.

The statistical evidence obtained from the bootstrapping analysis confirms the robustness of the proposed structural model. High t-values, extremely small p-values, and confidence intervals that consistently exclude zero indicate that the observed relationships are unlikely to have occurred by chance. Consequently, the results provide convincing empirical evidence that Artificial Intelligence has become an effective decision-support technology capable of improving household financial planning, budgeting, expenditure control, savings management, and overall economic decision-making efficiency. Nevertheless, the findings also emphasize that the greatest benefits of AI are achieved when technological utilization is accompanied by adequate financial literacy and a positive willingness to adopt innovative digital technologies.

3.6 Comparison with Previous Studies

The findings of this study are generally consistent with previous research demonstrating that Artificial Intelligence (AI) and digital technologies contribute positively to financial management and economic decision-making. The present study found that Artificial Intelligence Utilization significantly improves the efficiency of household economic decision-making among Generation Z households in Indonesia. This finding extends the growing body of literature indicating that AI functions as an effective decision-support technology capable of enhancing the quality, speed, and accuracy of financial decisions through intelligent data processing and personalized recommendations.

The positive influence of AI utilization identified in this study supports the work of Zheng et al. (2018), who argued that Artificial Intelligence has substantial potential to improve financial decision-making by processing large volumes of financial information efficiently and generating predictive recommendations for users. Their review emphasized that AI can strengthen wealth management, financial planning, and investment analysis through advanced machine learning algorithms. The present study confirms these conclusions within the context of household economics by demonstrating that AI also improves budgeting, expenditure management, savings behavior, and investment decisions among Generation Z households.

The findings are likewise consistent with studies examining financial technology adoption among young adults. Hasan et al. (2025) reported that financial technology significantly improves financial management behavior among Indonesian Generation Z, particularly when supported by adequate financial literacy. Similarly, the present study found that respondents who frequently utilized AI technologies exhibited greater efficiency in managing household finances. Although Hasan et al. focused primarily on financial technology applications rather than Artificial Intelligence specifically, both studies demonstrate that digital technologies can positively influence financial behavior when users possess sufficient knowledge to utilize them effectively.

The significant moderating role of financial literacy observed in this study also aligns with previous empirical evidence. Anwar (2025) found that digital financial literacy enhances financial self-efficacy and promotes responsible financial behavior among Generation Z. Likewise, Mayori and Hidayat (2025) concluded that financial literacy significantly improves financial planning and decision-making quality. The present findings reinforce these conclusions by demonstrating that financial literacy not only directly contributes to better financial decisions but also strengthens the effectiveness of AI utilization. Respondents with higher financial literacy were better able to critically evaluate AI-generated recommendations, distinguish reliable financial information from inappropriate suggestions, and integrate AI outputs into rational household economic decisions.

The results further support the theoretical assumptions of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Previous studies consistently report that perceived usefulness and perceived ease of use positively influence individuals' intention to adopt emerging technologies. The present study similarly found that Technology Acceptance partially mediates the relationship between AI utilization and economic decision-making efficiency. This finding indicates that individuals who perceive AI as useful, reliable, and easy to operate are more likely to incorporate AI into their routine financial activities, thereby improving the overall quality of household financial management.

In addition, the findings are consistent with Meiranto et al. (2026), who extended the UTAUT framework to examine digital banking and e-wallet adoption among Indonesian Generation Z. Their study demonstrated that performance expectancy, facilitating conditions, and personal innovativeness significantly increase technology adoption. The present study extends these findings

beyond technology adoption by showing that acceptance of AI technologies ultimately contributes to measurable improvements in household economic decision-making efficiency. Therefore, technology acceptance functions not only as a determinant of AI usage but also as an important mechanism through which AI generates practical financial benefits.

The present study also complements research by Wahyudiningsih and Sitepu (2026), who reported that financial literacy, financial self-efficacy, and financial technology positively influence financial behavior among Generation Z. While their research emphasized financial behavior, the current study specifically evaluates decision-making efficiency, including budget accuracy, savings management, spending control, investment quality, decision speed, and financial planning effectiveness. This broader perspective provides more comprehensive evidence regarding the practical contribution of Artificial Intelligence to household financial management.

Despite the overall consistency with previous studies, the present research also offers several important distinctions. Earlier studies primarily concentrated on financial technology, digital banking, mobile payment systems, or investment platforms, whereas the current research specifically investigates Artificial Intelligence as a decision-support system. Unlike traditional financial technologies that mainly facilitate financial transactions, AI provides analytical capabilities through personalized recommendations, predictive analysis, conversational assistance, and intelligent information processing. Consequently, this study contributes new empirical evidence regarding the unique role of AI in improving household economic decision-making.

Furthermore, most previous studies examined financial behavior among university students, consumers, or employees without specifically focusing on household economic decision-making. The present study addresses this limitation by investigating Generation Z individuals who actively participate in managing household finances. This focus provides a more realistic understanding of how AI supports practical financial decisions involving budgeting, expenditure allocation, savings, debt management, and investment planning within the household context.

Another important contribution of this study is the integration of Artificial Intelligence Utilization, Technology Acceptance, Financial Literacy, and Economic Decision-Making Efficiency into a single conceptual framework. Previous research generally examined these variables separately or focused primarily on direct relationships. By simultaneously incorporating technology adoption, financial capability, and decision-making outcomes, this study provides a more comprehensive explanation of the mechanisms through which AI influences household financial behavior. The findings demonstrate that AI alone is not sufficient to guarantee efficient financial decisions; rather, its effectiveness depends on users' financial knowledge and their willingness to adopt and appropriately utilize AI technologies.

4. CONCLUSION

This study demonstrates that Artificial Intelligence (AI) significantly and positively influences the efficiency of household economic decision-making among Generation Z households in Indonesia. The empirical findings indicate that greater utilization of AI technologies contributes to more effective budgeting, improved savings management, better spending control, higher-quality investment decisions, faster decision-making, and more comprehensive financial planning. Furthermore, the results identify Technology Acceptance and Financial Literacy as key determinants that enhance the effectiveness of AI utilization, with financial literacy strengthening the positive relationship between AI adoption and decision-making efficiency. Theoretically, this study extends the application of the Technology Acceptance Model (TAM) from organizational and commercial contexts to household economics, enriches the behavioral economics literature by explaining how AI-assisted technologies influence individual financial behavior, and provides new empirical evidence regarding AI adoption in personal finance within an emerging economy. Practically, the findings suggest that governments should promote national AI and digital financial literacy initiatives, financial institutions should integrate trustworthy AI-powered advisory services into consumer financial products, AI developers should design transparent, explainable, and user-centered financial decision-support systems, Generation Z households should combine AI recommendations with sound financial knowledge and critical judgment, and financial educators should incorporate AI literacy into financial education programs to improve responsible technology use. Despite these contributions, this study has several limitations, including the use of a cross-sectional research design that limits causal inference, reliance on self-reported questionnaire data that may introduce response bias, limited geographic representation of respondents within Indonesia, and an exclusive focus on Generation Z households that restricts the generalizability of the findings to other age groups. Therefore, future research should

employ longitudinal designs to investigate changes in AI utilization over time, conduct comparative studies across different generations and countries to examine cultural and demographic differences, utilize experimental approaches to establish causal relationships more rigorously, and incorporate objective financial performance indicators, such as actual savings, expenditure records, investment returns, and financial health metrics, to provide more comprehensive evidence regarding the long-term effectiveness of Artificial Intelligence in improving household economic decision-making.

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