

Artificial Intelligence in Financial Data Analysis and Investment Decision-Making: Opportunities, Risks and Implications for Individual Investors in Vietnam

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ABSTRACT: The rapid development of Artificial Intelligence (AI) is transforming financial data analysis and investment decision-making, particularly by enabling investors to process large volumes of financial information and access automated analytical support. This study examines the factors influencing AI adoption and its role in investment decision-making among individual investors in Vietnam. Based on Behavioral Finance Theory, the Technology Acceptance Model, and Trust Theory, the study develops a research model incorporating Perceived Benefits, Perceived Risks, Financial Literacy, Data Quality Trust, and Algorithm Transparency as determinants of AI Adoption, with AI Adoption subsequently influencing Investment Decision. Data were collected through a structured questionnaire from 309 individual investors in Vietnam who had experience using AI for financial analysis or investment decision-making. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 3. The results show that Perceived Benefits, Financial Literacy, and Algorithm Transparency positively influence AI Adoption, while Perceived Risks and Data Quality Trust also have significant effects but in directions different from the proposed hypotheses. AI Adoption demonstrates a strong positive relationship with Investment Decision ($\beta = 0.781$, $p < 0.001$) and plays a significant mediating role between the proposed antecedents and investment decision-making. The findings highlight the importance of financial literacy, perceived value, algorithm transparency, and appropriate trust mechanisms in promoting the effective use of AI among Vietnamese individual investors. The study provides implications for investors, financial-service providers, and Vietnamese regulators regarding the responsible development and use of AI in the country's evolving financial market.

KEYWORDS: Artificial intelligence; algorithm transparency; financial literacy; investment decision.

I. INTRODUCTION

The rapid advancement of digital technologies has significantly transformed the financial services industry, with Artificial Intelligence (AI) emerging as an influential technology in financial data analysis and investment decision-making. The integration of AI in finance can be traced back to the late twentieth century, when computational models were developed to support quantitative analysis, trading, and risk assessment. The emergence of algorithms capable of processing historical financial data laid the foundation for modern AI applications in financial markets (Hirsch et al., 2020). With advances in machine learning, natural language processing, and big data analytics, AI is now applied across various financial activities, including asset management, credit scoring, fraud detection, algorithmic trading, and customer services. For example, investment firms increasingly use machine learning to identify patterns in financial data, while AI-powered platforms and robo-advisors provide automated and personalized investment-related services (Arora et al., 2021). In modern investment environments, AI is particularly valuable because of its ability to process large volumes of structured and unstructured information at high speed. Financial markets generate information from price movements, financial statements, macroeconomic indicators, corporate announcements, news, and investor sentiment. AI-based models can identify complex patterns in historical and real-time datasets, support predictive analytics, and assist investment forecasting (Feng et al., 2021). AI can also support risk management through portfolio analysis, scenario simulation, and portfolio optimization. However, AI does not eliminate investment uncertainty, as its outputs remain dependent on data quality, model assumptions, and changing market conditions. Therefore, AI should be viewed as a decision-support technology rather than a guarantee of superior investment outcomes.

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Among AI applications in investment services, robo-advisors represent an important development in digital wealth management. These platforms combine algorithmic models, investor information, and portfolio-management techniques to provide automated investment recommendations or portfolio management with limited human intervention. Since the emergence of robo-advisors in the United States around 2008 (Pham et al., 2026), the technology has expanded into several markets. Malaysia introduced digital investment-management services in 2018, while the Monetary Authority of Singapore issued guidelines for digital advisory services in the same year. These developments demonstrate the growing regional importance of automated investment services and the increasing attention to algorithm governance, suitability, technology risk, and investor protection. The relevance of AI-based investment technologies is particularly important for individual investors, who may face limitations in financial knowledge, investment experience, and access to professional advice. This issue is increasingly significant in Vietnam because of the rapid expansion of retail participation in the securities market. According to the Viet Nam Securities Depository and Clearing Corporation (VSDC), the number of domestic securities accounts increased from 9,250,208 at the end of 2024 to 13,834,970 in August 2026. Of these, 13,814,693 accounts belonged to individual investors, meaning that approximately 99.9% of domestic securities accounts were held by individuals. These figures demonstrate the dominant role of retail investors in Vietnam's securities market and highlight the potential importance of accessible analytical and advisory technologies.

Vietnam's securities market has also experienced substantial growth. At the end of 2025, the VN-Index reached 1,784.49 points, increasing 40.9% from the end of 2024. The market capitalization of listed stocks reached approximately VND 9,975.4 trillion, while average daily trading value was approximately VND 29,328.2 billion. This expansion means that individual investors must process increasingly large volumes of financial information while operating in a market characterized by changing prices and uncertainty. AI-based tools may therefore provide opportunities to improve information accessibility, analytical efficiency, and portfolio management. Vietnam's securities market has developed within an increasingly comprehensive legal framework. Decree No. 48/1998/ND-CP, issued on July 11, 1998, represented an early milestone in establishing the securities market. The Law on Securities No. 70/2006/QH11 was subsequently promulgated in 2006 and entered into force on January 1, 2007. The current framework was further established through the Law on Securities No. 54/2019/QH14, promulgated in 2019 and effective from January 1, 2021. This regulatory development is relevant to AI-based financial services because automated investment advice raises issues concerning algorithmic transparency, investor suitability, data security, cybersecurity, and accountability.

Despite the growing importance of AI in financial services and the rapid expansion of Vietnam's retail investment market, research examining AI-based financial decision-making among Vietnamese individual investors remains limited. Previous studies suggest that trust, information quality, service quality, financial knowledge, and regulatory support can influence the adoption of AI-driven financial services (Lee et al., 2019). Recent research has also examined robo-advisor adoption among individual investors in Vietnam and identified technological trust as an important factor influencing intention to use robo-advisory services (Pham et al., 2026). However, limited research has comprehensively examined both the opportunities and risks of AI applications in financial data analysis and investment decision-making from the perspective of Vietnamese individual investors. Therefore, this study aims to explore the role of Artificial Intelligence in financial data analysis and investment decision-making among individual investors in Vietnam by examining both the benefits and challenges associated with AI adoption. Specifically, the research investigates how AI capabilities, perceived usefulness, trust, and perceived risks influence investors' acceptance and utilization of AI-based financial tools, while also considering algorithmic transparency, data security, and human-AI interaction. By addressing these issues, this study contributes to a deeper understanding of how AI can support investment decision-making while identifying the technological, behavioural, and regulatory risks that need to be managed in Vietnam's evolving financial ecosystem. The study is divided into five main sections: (1) Introduction; (2) Theoretical Foundations and Hypothesis Development; (3) Methodology; (4) Findings and Discussion; and (5) Recommendations and Conclusion.

II. THEORETICAL FOUNDATIONS AND HYPOTHESIS DEVELOPMENT

Theory Foundations

The theoretical foundation of this study integrates Behavioral Finance Theory, Davis's Technology Acceptance Model (TAM), and Trust Theory to explain how Artificial Intelligence (AI) influences financial data analysis and investment decision-making among individual investors. Traditional finance assumes that investors are rational, markets are efficient, and investment decisions are primarily determined by risk and expected return. However, the occurrence of market anomalies and speculative bubbles, such as the dot-com bubble of the 1990s (Kapoor et al., 2017) and the global real estate bubble of 2006 (Wątorrek et al., 2020), demonstrates that investors do not always behave according to these assumptions. Investors may be influenced by emotions, market sentiment, herd behaviour, excessive optimism, and other psychological factors, causing asset prices to

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deviate from their fundamental values. Behavioral Finance therefore emerged as an alternative perspective that recognizes investors as "normal" rather than perfectly rational and emphasizes the role of psychological and behavioural factors in financial decision-making (Fakhry, 2016). Its intellectual foundations can be traced to Adam Smith's *The Theory of Moral Sentiments* (1759) (Smith, 2010) and *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776) (Lange et al., 2018), which highlight the influence of emotions, moral sentiments, and individual judgement on economic behaviour. This perspective remains relevant in AI-assisted investment because investors do not simply follow AI-generated recommendations; instead, they interpret and respond to these recommendations through their own beliefs, experience, and cognitive biases. Complementing Behavioral Finance, Davis's Technology Acceptance Model (TAM) explains why investors accept or reject AI-based financial technologies. As presented by Silva (2015), TAM identifies Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as key determinants of technology adoption. In financial investment, AI can process large volumes of financial information, identify market patterns, support forecasting, optimize portfolios, and generate investment recommendations more efficiently than conventional approaches (Jamal et al., 2025). In addition, Perceived Benefits may strengthen adoption intention when investors believe that AI can improve decision quality, efficiency, and investment outcomes (Frank et al., 2026). Thus, Behavioral Finance explains the human and psychological dimension of investment decisions, while TAM provides a framework for understanding investors' willingness to adopt AI as a decision-support technology.

The technological value of AI-assisted investment also depends on its ability to transform financial data into reliable and actionable information. DataQ provides a conceptual framework for modelling AI-driven data-processing infrastructures, in which raw financial data are transformed into analytical outputs through sequential processing activities inspired by the Information Production Map (IP-MAP) model (Cichy et al., 2019). Based on this perspective, AI Analytical Capability refers to the ability of AI systems to collect, integrate, process, analyse, and interpret large volumes of structured and unstructured financial data to generate timely and actionable investment insights. Strong analytical capability can support forecasting, identify hidden market patterns, optimize portfolio allocation, and reduce investors' information-processing limitations. However, analytical capability alone may not be sufficient to encourage investors to rely on AI. The usefulness of AI-generated outputs depends heavily on the quality and reliability of the underlying data. Bondac et al. (2026) emphasize that Data Quality Trust is fundamental to AI-supported decision-making because accurate, complete, consistent, and reliable data strengthen users' confidence in AI-generated analysis, whereas poor-quality data can undermine trust regardless of algorithmic sophistication. This leads to the role of Trust Theory, which explains why investors are willing or unwilling to rely on AI-generated recommendations. Trust is essential for the successful adoption of advanced technologies (Kelly et al., 2023) and is commonly associated with perceptions of competence, reliability, integrity, predictability, and transparency. In particular, Algorithm Transparency has become increasingly important in AI adoption. Park and Yoon (2025) argue that transparent algorithms allow users to better understand how information is collected, processed, and transformed into recommendations, thereby reducing uncertainty and strengthening perceptions of fairness, accountability, explainability, and credibility. In financial investment, transparency can help investors understand the rationale behind AI-generated recommendations rather than treating the system as an incomprehensible "black box." Therefore, investors are more likely to accept and rely on AI-assisted financial analysis when they perceive meaningful benefits, strong analytical capability, high-quality data, and sufficient transparency and trust. Collectively, Behavioral Finance explains the psychological and behavioural characteristics of investors, TAM explains their acceptance of AI technologies, and Trust Theory explains their willingness to rely on AI-generated outputs, providing an integrated theoretical foundation for examining AI-assisted investment decision-making among individual investors in Vietnam.

Artificial Intelligence in Financial Data Analysis

Artificial Intelligence has emerged as one of the most transformative technologies in modern finance, fundamentally changing the way financial information is collected, processed, analysed, and utilized for decision-making. AI is generally defined as a branch of computer science that develops intelligent machines capable of performing cognitive tasks traditionally associated with human intelligence, including reasoning, learning, problem-solving, decision-making, and speech recognition (Edinoh et al., 2024). More comprehensively, Acemoglu and Restrepo (2020, p. 1) define AI as *"the study and development of intelligent (machine) agents, which are machines, software or algorithms that act intelligently by recognising and responding to their environment"*. As a general-purpose technology, AI continuously evolves, improves through learning, and stimulates complementary innovations across multiple industries. Its major technological components include machine learning, deep learning, natural language processing (NLP), predictive application programming interfaces (APIs), image recognition, and speech recognition. Although the term "Artificial Intelligence" was first introduced by John McCarthy during the Dartmouth Conference in 1956 (Bahoo et al., 2024), the practical development of AI remained limited for decades because of insufficient computing

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power, inadequate data storage, and recurring periods of reduced financial investment known as the "AI winters". The rapid advancement of AI in recent years has been driven by three major factors: the availability of massive structured and unstructured datasets, significant improvements in computational capability, and increasing venture capital investment in digital technologies. Unlike traditional automated systems that execute predefined instructions, modern AI systems possess the ability to continuously learn from data, recognize complex patterns, and adapt their decision-making processes without explicit programming. These learning capabilities enable AI to perform numerous cognitive tasks that were previously considered exclusive to human intelligence (Ernst et al., 2018).

The financial industry has become one of the sectors most profoundly transformed by AI due to its reliance on large-scale data processing and analytical decision-making. Financial institutions increasingly adopt AI to improve operational efficiency, automate repetitive processes, enhance predictive analytics, and deliver more personalized financial services. AI technologies also reduce human errors and behavioural biases in routine analytical tasks while improving the speed and consistency of financial analysis (Nefla et al., 2025). Furthermore, AI supports financial regulators by identifying potential violations, monitoring financial markets, and assessing the potential impacts of regulatory changes. In the FinTech sector, machine learning algorithms enable lenders to make near real-time credit decisions, improving both lending efficiency and customer experience. Within financial data analysis, AI substantially enhances the capability to transform large volumes of heterogeneous financial data into valuable investment intelligence. Data processing represents a critical stage of information discovery, involving the extraction of meaningful knowledge from existing databases through computational algorithms rather than the collection of raw data itself (Wisesa et al., 2020). A typical AI-based financial data processing architecture integrates data warehouses with multiple information systems to filter, cleanse, standardize, organize, and analyse financial information before storing processed data for subsequent analytical tasks. The analytical process generally consists of several sequential stages, including data preparation, information cleaning, anomaly detection, feature selection, model development, performance evaluation, and knowledge integration, forming a continuous improvement cycle that enhances the quality and reliability of analytical outputs (Asongu, 2015). The quality of data preparation directly affects the performance of AI models, while appropriate model selection and iterative evaluation ensure that AI-generated insights remain accurate and relevant for decision-making. Compared with conventional statistical approaches, AI-based analytical models demonstrate superior predictive capability in complex financial environments. Previous studies comparing artificial intelligence models with traditional logistic regression models have shown that AI provides more accurate predictions in financial early-warning systems, particularly for identifying financial distress and bankruptcy risks among small and medium-sized enterprises (Yang, 2022). Moreover, integrating non-financial variables, such as corporate governance indicators, further improves predictive accuracy, highlighting AI's ability to process diverse sources of structured and unstructured information simultaneously. These findings illustrate that AI is capable of identifying nonlinear relationships and hidden patterns that are often overlooked by conventional analytical techniques.

Consequently, AI has become an indispensable analytical tool across numerous financial applications, including fraud detection, algorithmic and high-frequency trading, portfolio management, credit scoring, bankruptcy prediction, risk management, investor sentiment analysis, regulatory compliance, and financial forecasting. Existing literature indicates that AI applications in finance can generally be classified into several major research streams, including predictive and forecasting systems, classification and early-warning systems, and big data analytics, data mining, and text mining. More recent studies further extend AI applications to stock market prediction, trading strategies, volatility forecasting, portfolio optimization, credit risk assessment, cryptocurrency markets, derivatives pricing, investor sentiment analysis, and foreign exchange management. Collectively, these developments demonstrate that AI has evolved beyond a simple automation technology into a strategic decision-support system capable of significantly improving the quality, speed, and accuracy of financial data analysis and investment decision-making.

Investment Decision-Making

Investment decision-making refers to the process through which investors evaluate available information, assess potential risks and returns, and allocate financial resources to achieve their investment objectives. Traditional finance assumes that investors make rational decisions based on complete information and objective evaluation. Under the Efficient Market Hypothesis, security prices are believed to fully reflect all publicly available information, implying that investment decisions are consistently rational and markets operate efficiently (Kumbure et al., 2022). However, numerous studies have shown that these assumptions are often violated because investors are influenced by psychological, emotional, and cognitive factors that lead to systematic deviations from rational behavior. The Behavioral Finance emerged as an alternative perspective to explain these deviations by emphasizing that investment decisions are shaped not only by financial information but also by behavioural biases and market

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inefficiencies. Rather than behaving as perfectly rational decision-makers, investors are affected by subjective judgement, emotions, and heuristics, causing security prices to deviate from their intrinsic values. As individual investors have become increasingly active participants in financial markets, research has focused on understanding how behavioural factors influence investment decision-making processes (Erwin et al., 2023).

Among the most extensively studied behavioural biases is overconfidence, which refers to investors' excessive belief in their own knowledge, forecasting ability, and investment skills. Overconfident investors tend to underestimate uncertainty, ignore potential risks, and overestimate the accuracy of their judgments when making investment decisions (Jain et al., 2022). Such behaviour often results in excessive trading activities, unrealistic expectations of investment performance, and greater exposure to financial losses. Investors exhibiting overconfidence frequently assume that favourable investment outcomes are attributable to their own abilities while underestimating the influence of external market conditions. Empirical studies consistently demonstrate that overconfidence contributes to higher trading volumes and more aggressive investment behaviour. Another important behavioural bias affecting investment decisions is anchoring, whereby investors rely excessively on initial information or reference points when evaluating financial assets. Anchoring causes subsequent judgments to remain influenced by previously observed prices or numerical values even when new information becomes available. Previous studies suggest that anchoring influences stock return expectations and investment assessments, particularly among less experienced investors. Experimental evidence further indicates that both true and false numerical information can generate anchoring effects during financial evaluations (Willows et al., 2019), while anchoring has also been identified as an important explanation for several profitable trading anomalies. Although certain studies report weaker anchoring effects in specific investment environments, the literature generally recognizes anchoring as an important cognitive bias influencing financial decision-making. The disposition effect also represents a significant behavioural bias in investment decisions. This phenomenon describes investors' tendency to sell assets that have generated gains too early while continuing to hold loss-making investments in the expectation that prices will eventually recover. Numerous empirical studies have documented the existence of the disposition effect across different financial markets, including equity markets, warrant markets, mutual funds, and initial public offerings (Zahera et al., 2018). Such behaviour often reduces investment performance because investors fail to make objective decisions based on fundamental asset values and instead allow previous gains or losses to influence subsequent investment choices. In addition, herding behaviour has been widely recognised as another important determinant of investment decision-making. Herding occurs when investors imitate the actions of other market participants instead of relying on their own independent analysis, particularly during periods of high uncertainty and market volatility. Existing studies indicate that herding behaviour significantly influences investment decisions across stock markets, property markets, banking sectors, mutual funds, and other financial institutions (Alaaraj et al., 2020). By following prevailing market sentiment rather than objective financial information, investors may make suboptimal investment decisions and contribute to the formation of speculative bubbles and excessive market volatility.

Within the context of AI-assisted investing, these behavioural characteristics remain highly relevant. Although AI substantially enhances investors' ability to analyse large volumes of financial data, generate forecasts, and provide data-driven investment recommendations, the final investment decision continues to depend on investors' subjective evaluation and behavioural responses. Individual investors may overestimate AI capabilities due to overconfidence, rely excessively on initial AI-generated recommendations through anchoring, continue holding unprofitable investments because of the disposition effect, or imitate the widespread adoption of AI technologies due to herding behaviour. Consequently, investment decision-making in AI-supported financial environments reflects the combined influence of advanced analytical technologies and persistent behavioural biases, highlighting the importance of examining both technological and psychological determinants when investigating AI adoption and investment behaviour among individual investors in Vietnam.

Opportunities and Risks of AI in Investment Decision-Making

Artificial Intelligence has fundamentally transformed investment decision-making by significantly enhancing financial institutions' ability to process information, generate forecasts, personalize investment strategies, and improve operational efficiency. Compared with traditional analytical approaches, AI enables financial systems to process massive volumes of both structured data, such as financial statements, stock prices, and transaction records, and unstructured data, including news articles, social media content, earnings reports, and market sentiment. Through machine learning, deep learning, and Natural Language Processing, AI can identify hidden patterns, extract valuable insights, and transform complex financial information into actionable investment recommendations, thereby improving the quality and speed of investment analysis (Onyenahazi et al., 2024). Moreover, AI facilitates real-time monitoring of financial markets, allowing investors to detect anomalies, respond quickly to market fluctuations, and exploit emerging investment opportunities while reducing information-processing limitations.

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Another advantage of AI lies in its superior forecasting capability. Unlike traditional statistical forecasting models, AI algorithms can simultaneously analyse historical market data together with macroeconomic indicators, industrial trends, geopolitical events, and investor sentiment to generate more accurate market predictions. Advanced machine learning techniques, including recurrent neural networks (RNNs), long short-term memory (LSTM) models, and ensemble learning methods, continuously update their predictive models as new information becomes available, allowing forecasting accuracy to improve over time and reducing reliance on static historical assumptions (Amrit, 2024). These capabilities support investors in identifying market trends, anticipating price movements, and making more informed investment decisions under rapidly changing financial conditions. AI also enables financial institutions to develop highly personalized investment strategies by analysing investors' financial profiles, behavioural characteristics, investment objectives, and risk preferences. AI-powered robo-advisors continuously monitor both market conditions and investors' portfolios, providing dynamic recommendations and portfolio adjustments that better align with individual financial goals than conventional one-size-fits-all investment approaches (Bennett-Lovsey, 2024). Furthermore, by incorporating behavioural information and market sentiment into investment analysis, AI can generate more comprehensive recommendations that combine quantitative financial indicators with qualitative market intelligence. At the institutional level, AI contributes to substantial cost reductions and operational efficiency through process automation, optimized trading strategies, enhanced data processing, and improved compliance monitoring. Automation reduces manual workloads, minimizes operational errors, accelerates decision-making, and enhances customer service quality while lowering operating costs.

Despite these significant opportunities, the application of AI in investment decision-making also introduces several important risks and challenges. One major concern is algorithmic bias, which arises when AI systems learn from historical datasets containing existing social or financial biases. Consequently, AI-generated recommendations may unintentionally produce unfair or discriminatory outcomes, leading to biased investment or lending decisions. In addition, the complexity of many AI algorithms creates "black-box" decision-making processes that reduce transparency and make it difficult for users to understand how investment recommendations are generated. This lack of explainability raises ethical concerns regarding accountability, fairness, and investors' trust in AI-supported financial decisions (Krause, 2024). Besides, the risk of over-reliance on AI systems is also a challenge. Although AI significantly enhances analytical efficiency, excessive dependence on automated recommendations may reduce the role of human judgement and critical thinking in investment decisions. AI models are developed based on historical data and predefined algorithms; therefore, they may fail to respond appropriately to unprecedented market events or structural economic changes. Excessive automation may also contribute to systemic market instability, as illustrated by algorithm-driven market disruptions and flash crashes associated with automated trading systems (Lakhchani et al., 2022). Furthermore, inaccurate training data or inappropriate model assumptions may generate misleading predictions, potentially resulting in poor investment decisions and substantial financial losses. The increasing reliance on AI further exposes financial institutions to cybersecurity threats. AI systems process enormous amounts of sensitive financial data, making them attractive targets for cyberattacks. Adversarial attacks may manipulate input data and distort AI-generated predictions, while security breaches may compromise confidential financial information, disrupt trading activities, or damage institutional reputation (Arora et al., 2025). Simultaneously, AI adoption presents considerable regulatory and compliance challenges, as existing legal frameworks often struggle to keep pace with rapidly evolving AI technologies. The limited transparency of AI algorithms, differences in international regulatory standards, and the dynamic nature of machine learning models create difficulties for regulators seeking to ensure accountability, fairness, and regulatory compliance. AI offers substantial opportunities for improving financial data analysis, forecasting accuracy, personalized investment management, and operational efficiency, while simultaneously introducing important concerns related to algorithmic bias, excessive technological dependence, cybersecurity, and regulatory governance. These opportunities and risks highlight that the effectiveness of AI-assisted investment decision-making depends not only on technological capability but also on investors' trust, data quality, algorithm transparency, and appropriate regulatory oversight. Consequently, understanding both the benefits and limitations of AI provides an essential theoretical foundation for examining AI adoption and its implications for investment decision-making among individual investors in Vietnam.

Hypothesis Development

Factors influencing AI Adoption of Individual Investors

Perceived benefits refer to the extent to which investors believe that Artificial Intelligence (AI) can improve the quality and effectiveness of financial data analysis and investment decision-making. In AI-assisted investment, these benefits may include faster information processing, improved forecasting accuracy, enhanced portfolio optimization, more effective risk management, and better investment outcomes. As AI technologies continue to evolve, investors are increasingly able to utilize AI-generated insights to support complex financial decisions that would otherwise require substantial time and analytical effort. From the

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perspective of Davis's Technology Acceptance Model (TAM), individuals are more likely to adopt a technology when they perceive that it enhances their performance and provides practical value (Kalateh et al., 2024). AI-assisted financial tools improve investment efficiency by transforming large volumes of financial data into meaningful and actionable insights, thereby reducing information-processing costs and improving decision quality. In addition, investors who recognize these advantages are more likely to perceive AI as a valuable decision-support tool that complements their own financial knowledge and analytical capabilities. The ability of AI to deliver timely market insights and reduce the complexity of investment analysis further strengthens investors' confidence in using AI technologies. Consequently, investors who perceive greater benefits from AI are expected to develop stronger intentions to adopt AI technologies in their investment activities. This theoretical argument is supported by empirical evidence. Frank et al. (2026) found that perceived benefits are among the strongest determinants of users' acceptance of highly autonomous AI assistants. Their findings indicate that users are significantly more willing to adopt AI when they believe it improves decision quality, enhances efficiency, and generates superior outcomes. Although the study was conducted in an online shopping context, the underlying mechanism is transferable to AI-assisted investment because both involve users evaluating whether AI can improve the quality of their decisions. Therefore, investors who perceive greater benefits from AI-assisted financial analysis are expected to demonstrate stronger AI adoption intentions. Accordingly, the following hypothesis is proposed:

H1: Perceived benefits positively influence AI adoption among individual investors in Vietnam.

Perceived risks represent investors' expectations regarding the potential negative consequences associated with adopting AI in investment decision-making. These risks may include inaccurate investment recommendations, financial losses, cybersecurity threats, privacy concerns, algorithmic errors, and uncertainty regarding AI-generated predictions. Since investment decisions inherently involve uncertainty, investors often evaluate both the expected benefits and the potential risks before deciding whether to adopt emerging technologies. Behavioral Finance Theory suggests that investors are not perfectly rational and are frequently influenced by subjective perceptions of risk. When investors perceive a technology as risky, they tend to become more cautious and exhibit lower willingness to rely on its recommendations, even if the technology demonstrates superior analytical capability (Belhaoua et al., 2026). In AI-assisted investment environments, concerns regarding the reliability and potential consequences of AI-generated analyses may reduce investors' confidence and discourage technology adoption. Furthermore, high levels of perceived risk may increase investors' reliance on conventional investment approaches rather than AI-assisted solutions, thereby limiting the potential advantages of AI technologies in financial decision-making. Investors who are concerned about data security, system errors, or the lack of accountability for AI-generated recommendations are also less likely to trust and adopt AI in their investment activities. The empirical findings of Jamal et al. (2025) support this theoretical perspective by demonstrating that risk perception weakens the effectiveness of AI-assisted financial decision-making and negatively influences investment outcomes. Investors who perceive higher levels of uncertainty or potential financial loss are less likely to rely on AI-generated recommendations and consequently show lower intentions to adopt AI technologies. Therefore, the following hypothesis is proposed:

H2: Perceived risks negatively influence AI adoption among individual investors in Vietnam.

Financial literacy refers to investors' ability to understand financial concepts, interpret financial information, evaluate investment alternatives, and make informed financial decisions. Financial literacy enables investors to critically assess investment opportunities and better understand the information generated by AI systems. Consequently, financially literate investors are expected to utilize AI technologies more effectively than investors possessing limited financial knowledge. Behavioral Finance Theory argues that financial knowledge reduces investors' cognitive limitations and improves decision quality by enabling individuals to process financial information more objectively. Likewise, the Technology Acceptance Model (TAM) suggests that users are more likely to adopt technologies when they possess sufficient knowledge and capability to recognize their usefulness. Investors with higher financial literacy are therefore more capable of understanding AI-generated analyses, evaluating AI recommendations, and integrating AI into their investment decision-making processes (Venkitachalam, 2025). Moreover, financially literate investors are generally more confident in assessing the credibility of AI-generated information and are better equipped to combine AI insights with their own financial knowledge when making investment decisions. This capability reduces uncertainty, increases confidence in AI-assisted analysis, and encourages the effective use of AI technologies in investment activities. Empirical evidence provided by Jamal et al. (2025) confirms that financial literacy significantly enhances AI-assisted financial decision-making. Their findings indicate that financially knowledgeable investors obtain greater benefits from AI technologies because they are better able to interpret analytical outputs and apply AI-generated recommendations appropriately. Accordingly, higher financial literacy is expected to increase investors' willingness to adopt AI-based financial technologies. Therefore, the following hypothesis is proposed:

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H3: Financial literacy positively influences AI adoption among individual investors in Vietnam.

Data quality trust refers to investors' confidence that the financial data utilized by AI systems are accurate, complete, reliable, timely, and consistent. Since AI algorithms derive their analytical capability directly from the data they process, trustworthy financial data are fundamental for generating reliable investment recommendations. Investors are therefore more likely to rely on AI systems when they believe that the underlying financial information is of high quality. According to Trust Theory, trust develops when users perceive that a technological system is reliable, dependable, and capable of producing credible outcomes. In AI-assisted investment, confidence in data quality strengthens investors' trust in AI-generated analyses because reliable input data increase the credibility of investment recommendations (Mizrak et al., 2026). High-quality financial data also reduce uncertainty, improve the accuracy of AI-generated forecasts, and enhance investors' confidence in using AI for investment analysis. Conversely, poor-quality financial data undermine confidence in AI regardless of the sophistication of the underlying algorithms, limiting investors' willingness to depend on AI-assisted financial technologies. Supporting this argument, Bondac et al. (2026) identify data quality trust as a critical determinant of AI-supported decision-making in complex systems. Their findings demonstrate that accurate, complete, and reliable data substantially increase users' trust in AI-generated decisions, whereas poor data quality significantly reduces confidence in AI outputs. Therefore, investors who possess greater trust in the quality of financial data are expected to exhibit stronger intentions to adopt AI-assisted financial technologies. Accordingly, the following hypothesis is proposed:

H4: Data quality trust positively influences AI adoption among individual investors in Vietnam.

Algorithm transparency refers to the degree to which AI systems clearly disclose and explain how financial information is processed and how investment recommendations are generated. Transparent algorithms allow investors to understand the rationale underlying AI-generated outputs, thereby reducing uncertainty and increasing confidence in automated investment recommendations. Trust Theory suggests that transparency is an important antecedent of trust because it reduces information asymmetry and enables users to evaluate the reliability of intelligent systems. In investment contexts, transparent AI algorithms allow investors to better understand the decision-making logic embedded within AI systems, making AI recommendations appear more credible and trustworthy (Alon et al., 2026). Consequently, investors are more likely to adopt AI technologies when they perceive AI algorithms to be transparent and understandable. The empirical findings of Park and Yoon (2025) support this argument by demonstrating that algorithm transparency significantly mitigates negative attitudes toward AI while strengthening users' trust in intelligent systems. Their study further indicates that transparency increases users' willingness to rely on AI-generated recommendations because transparent algorithms enhance perceived reliability and reduce uncertainty. Applying these findings to AI-assisted investment, greater algorithm transparency is expected to encourage investors to adopt AI technologies for financial analysis and investment decision-making. Therefore, the following hypothesis is proposed:

H5: Algorithm transparency positively influences AI adoption among individual investors in Vietnam.

AI Adoption and Investment Decision

AI adoption refers to the extent to which individual investors accept, utilize, and integrate AI technologies into their financial data analysis and investment decision-making processes. The adoption of AI enables investors to leverage advanced analytical tools to collect, process, and interpret large volumes of structured and unstructured financial information more efficiently than traditional analytical methods. Through AI-assisted technologies, investors can identify market trends, evaluate investment opportunities, generate predictive insights, optimize portfolio allocation, and monitor potential financial risks in a more systematic and timely manner. As a result, AI adoption has the potential to enhance both the efficiency and effectiveness of investment decision-making by providing objective, data-driven support for financial analysis. The increasing complexity of financial markets has made investment decisions more dependent on timely information and accurate analytical capabilities. Investors who adopt AI technologies are better positioned to process massive amounts of financial data, reduce information asymmetry, and respond more rapidly to changing market conditions. Rather than replacing investors' judgement, AI serves as an intelligent decision-support tool that complements human analysis by providing comprehensive, consistent, and evidence-based recommendations (Makkar, 2026). Consequently, greater adoption of AI is expected to improve investors' ability to evaluate financial information, compare investment alternatives, and make more informed investment decisions. Empirical evidence supports this positive relationship. Jamal et al. (2025) demonstrate that AI adoption significantly enhances financial decision-making by improving investors' analytical capabilities and facilitating better investment outcomes. Their findings suggest that investors who actively utilize AI technologies are more capable of interpreting financial information, evaluating investment opportunities, and making effective investment decisions. Similarly, Udeh (2025) argue that AI has transformed modern financial systems by enabling smarter, faster, and more resilient decision-making. Their study highlights that AI-driven

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financial technologies improve the speed, accuracy, and consistency of financial analysis, thereby supporting investors in making more reliable and effective investment decisions under dynamic market conditions. Based on the above arguments and empirical evidence, this study proposes the following hypothesis:

H6: AI adoption positively influences investment decision among individual investors in Vietnam.

The Mediating Role of AI Adoption

AI adoption is proposed as a mediating mechanism through which investors' perceptions and individual characteristics are translated into investment decisions. Although factors such as perceived benefits, perceived risks, financial literacy, data quality trust, and algorithm transparency may directly shape investors' evaluations of AI technologies, these factors are unlikely to improve investment decisions unless investors are willing to adopt and utilize AI in their financial activities. In other words, the positive or negative effects of these antecedents on investment decision-making are expected to operate through investors' actual adoption of AI-assisted financial technologies. The adoption of AI enables investors to integrate advanced analytical tools into the investment process, allowing them to process large volumes of financial information, identify market opportunities, evaluate investment alternatives, and generate more objective investment recommendations. Compared with traditional investment approaches, AI-assisted systems can improve the speed, efficiency, and accuracy of financial analysis while reducing information overload and human cognitive limitations. As a result, investors who actively adopt AI technologies are expected to make more informed, consistent, and evidence-based investment decisions. Therefore, AI adoption represents a crucial link between investors' perceptions of AI and their actual investment behaviour. From the perspective of the Technology Acceptance Model (TAM), investors are more likely to adopt AI technologies when they perceive substantial benefits from their use. At the same time, Trust Theory suggests that investors' willingness to rely on AI is strengthened when AI systems provide high-quality data, transparent algorithms, and reliable analytical outputs. Conversely, concerns regarding potential risks, such as inaccurate recommendations, data privacy issues, or excessive dependence on automated systems, may discourage investors from adopting AI technologies. Financial literacy also plays an important role by enabling investors to better understand AI-generated information and effectively integrate analytical insights into their investment decisions. Empirical evidence further supports the mediating role of AI adoption in financial decision-making. Jamal et al. (2025) demonstrate that AI adoption enhances investors' analytical capability and contributes to better investment outcomes, while Nasrin (2025) argues that investment decisions are strongly influenced by investors' ability to effectively utilize financial knowledge and analytical information. Similarly, Belhaoua and Hanif (2026) emphasize that AI technologies improve decision quality by enabling investors to transform complex financial data into actionable investment insights. Collectively, these studies suggest that AI adoption serves as an important mechanism through which investors' perceptions of AI technologies and their individual capabilities are translated into higher-quality investment decisions. The following hypotheses are therefore developed:

H7a: AI adoption mediates the relationship between perceived benefits and investment decision.

H7b: AI adoption mediates the relationship between perceived risks and investment decision.

H7c: AI adoption mediates the relationship between financial literacy and investment decision.

H7d: AI adoption mediates the relationship between data quality trust and investment decision.

H7e: AI adoption mediates the relationship between algorithm transparency and investment decision.

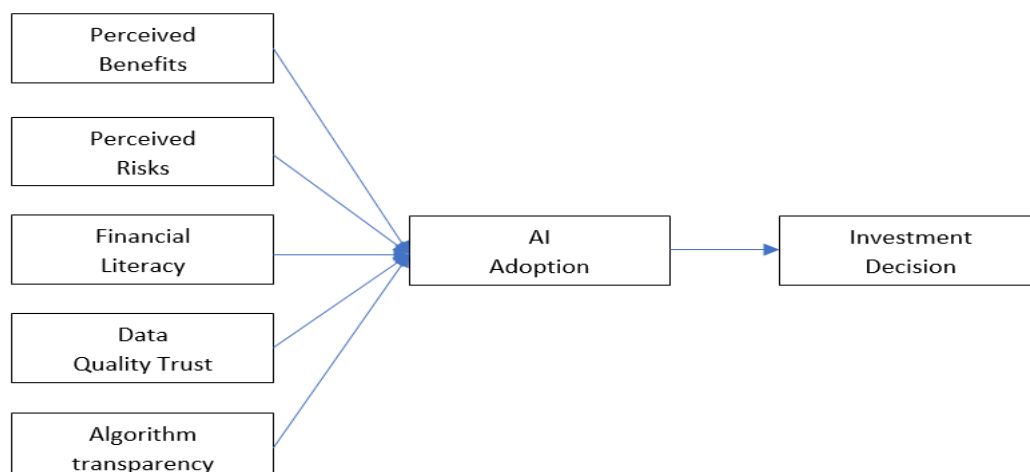


Figure 1. Research Model

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III. METHODOLOGY

Measurement and Questionnaire Development

The measurement instrument was designed to examine the relationships among Perceived Benefits (PB), Perceived Risks (PR), Financial Literacy (FL), Data Quality Trust (DQT), Algorithm Transparency (AT), AI Adoption (AA), and Investment Decision (ID) among individual investors in Vietnam. All constructs were measured using previously validated scales and assessed on a five-point Likert scale ranging from 1 = “strongly disagree” to 5 = “strongly agree”. Specifically, PB was measured using four items adapted from Frank et al. (2026); PR was measured using four items adapted from Jamal et al. (2025) and Belhaoua and Hanif (2026); FL was measured using three items adapted from Jamal et al. (2025) and Nasrin (2025); DQT was measured using four items adapted from Bondac et al. (2026); AT was measured using four items adapted from Park and Yoon (2025); AA was measured using four items adapted from Jamal et al. (2025) and Belhaoua and Hanif (2026); and ID was measured using five items adapted from Jamal et al. (2025) and Nasrin (2025). All measurement items were slightly modified to reflect the context of AI-assisted financial data analysis and investment decision-making among individual investors in Vietnam. The questionnaire was originally developed in English and subsequently translated into Vietnamese using the back-translation method to ensure semantic equivalence. The collected data were analyzed using SmartPLS 3 to evaluate the reliability, convergent validity, and discriminant validity of the measurement model, as well as to assess the structural model and test the proposed research hypotheses.

Sample, Data Collection and Analysis

The data for this study were collected through a structured questionnaire administered to individual investors in Vietnam to investigate the adoption of artificial intelligence (AI) in financial data analysis and investment decision-making, with a particular focus on the perceived opportunities, risks, and implications of AI usage. Both online and offline survey methods were employed to ensure broad participation. The online questionnaire was distributed through investment-related social media communities, financial forums, and professional networks, while the offline survey was conducted at investment seminars and financial institutions. The target respondents were individual investors who had investment experience and had used AI tools to support financial analysis or investment decision-making. This sampling approach ensured that the collected data reflected investors' perceptions and experiences regarding AI-assisted investment activities in the Vietnamese context. A total of 309 valid responses were retained for data analysis. The questionnaire collected respondents' demographic information, including gender (male and female), age (18–24, 25–34, 35–50, and over 50), education level (high school or below, college/bachelor's degree, and postgraduate), occupation (student, office worker, business owner/self-employed, finance/banking professional, government employee, and others), monthly income (less than 500 USD, 500–1000 USD, 1000–2000 USD, and more than 2000 USD), investment experience (less than 1 year, 1–3 years, 4–6 years, and more than 6 years), primary investment product (stocks, mutual funds/ETFs, bonds, cryptocurrency, gold/foreign exchange, and others), and the type of AI used for financial analysis and investment (Generative AI, AI-powered investment platforms, robo-advisors and portfolio management AI, and other AI tools). These characteristics provide a comprehensive profile of the respondents and support a better understanding of AI adoption and investment decision-making among individual investors in Vietnam.

IV. FINDINGS AND DISCUSSION

Descriptive Statistics Results

Table 1 presents the demographic characteristics of the 309 valid respondents. The sample consisted of 58.6% male and 41.4% female participants. The largest age group was 25–34 years (41.7%), followed by 35–50 years (26.5%), 18–24 years (23.3%), and over 50 years (8.5%). In terms of education, the majority of respondents held a college or bachelor's degree (67.3%), while 19.4% had a postgraduate qualification and 13.3% had a high school education or below. Regarding occupation, office workers accounted for the largest proportion of respondents (38.2%), followed by business owners/self-employed (17.5%), finance/banking professionals (15.2%), students (12.6%), others (9.4%), and government employees (7.1%). Most respondents reported a monthly income of USD 500–1000 (35.9%), followed by USD 1000–2000 (31.7%), more than USD 2000 (17.5%), and less than USD 500 (14.9%). In terms of investment experience, the largest group had 1–3 years of experience (39.5%), followed by 4–6 years (25.6%), less than 1 year (18.8%), and more than 6 years (16.1%). For investment preferences, stocks were the most common investment product (46.9%), followed by cryptocurrency (18.1%), mutual funds/ETFs (13.6%), gold/foreign exchange (9.1%), bonds (8.1%), and other investment products (4.2%). Concerning the use of AI in financial analysis and investment, Generative AI tools, such as ChatGPT, Gemini, and DeepSeek, were the most widely used (57.3%), followed by AI-powered investment platforms (20.4%), robo-advisors and portfolio management AI (13.3%), and other AI tools (9.1%). Overall,

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the demographic profile indicates that the respondents represent a diverse group of individual investors with varying backgrounds, investment experience, and AI usage, providing a suitable sample for examining AI-assisted financial data analysis and investment decision-making in Vietnam.

Table 1. Demographics of Respondents (n = 309)

Demographics		Frequency	Percentage (%)
Gender	Male	181	58.6
	Female	128	41.4
Age	18–24	72	23.3
	25–34	129	41.7
	35–50	82	26.5
	> 50	26	8.5
Education level	High school or below	41	13.3
	College/Bachelor's degree	208	67.3
	Postgraduate	60	19.4
Occupation	Student	39	12.6
	Office worker	118	38.2
	Business owner / Self-employed	54	17.5
	Finance / Banking professional	47	15.2
	Government employee	22	7.1
	Others	29	9.4
Monthly Income	< 500 USD	46	14.9
	500–1000 USD	111	35.9
	1000–2000 USD	98	31.7
	> 2000 USD	54	17.5
Investment Experience	Less than 1 year	58	18.8
	1–3 years	122	39.5
	4–6 years	79	25.6
	More than 6 years	50	16.1
Primary Investment Product	Stocks	145	46.9
	Mutual funds / ETFs	42	13.6
	Bonds	25	8.1
	Cryptocurrency	56	18.1
	Gold / Foreign exchange	28	9.1
	Others	13	4.2
Type of AI Used for Financial Analysis and Investment	Generative AI (e.g., ChatGPT, Gemini, DeepSeek, etc.)	177	57.3
	AI-powered Investment Platforms	63	20.4
	Robo-advisors and Portfolio Management AI	41	13.3
	Other AI Tools	28	9.1

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Scale Reliability and Validity Assessment

Table 2 presents the results of the assessment of construct reliability and convergent validity. The findings indicate that all constructs meet the recommended thresholds. Specifically, Cronbach's Alpha values range from 0.785 to 0.946, rho_A values range from 0.841 to 1.004, and Composite Reliability (CR) values range from 0.852 to 0.961, confirming satisfactory internal consistency reliability. In addition, the Average Variance Extracted (AVE) values range from 0.591 to 0.860, all exceeding the recommended threshold of 0.50, thereby demonstrating adequate convergent validity. Overall, the results confirm that Perceived Benefits (PB), Perceived Risks (PR), Financial Literacy (FL), Data Quality Trust (DQT), Algorithm Transparency (AT), AI Adoption (AA), and Investment Decision (ID) exhibit satisfactory reliability and convergent validity, indicating that the measurement model is suitable for subsequent structural model assessment.

Table 2. Construct Reliability and Convergent Validity

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
AA	0.946	0.946	0.961	0.860
AT	0.878	0.881	0.916	0.732
DQT	0.912	1.004	0.937	0.788
FL	0.917	0.918	0.948	0.859
ID	0.939	0.939	0.954	0.805
PB	0.875	0.881	0.916	0.732
PR	0.785	0.841	0.852	0.591

Source: Data analysis by SmartPLS 3

Table 3 and 4 respectively presents the assessment of discriminant validity using the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT). The results show that the square root of the AVE for each construct, ranging from 0.769 to 0.927, is consistently greater than its corresponding inter-construct correlations. This indicates that each construct shares more variance with its own indicators than with other constructs, thereby satisfying the Fornell–Larcker criterion. Accordingly, the results confirm that all constructs exhibit adequate discriminant validity.

Table 3. Fornell-Larcker Criterion

	AA	AT	DQT	FL	ID	PB	PR
AA	0.927						
AT	0.418	0.856					
DQT	0.168	0.626	0.888				
FL	0.460	0.593	0.628	0.927			
ID	0.781	0.398	0.160	0.505	0.897		
PB	0.507	0.395	0.346	0.617	0.549	0.856	
PR	0.344	0.539	0.395	0.401	0.293	0.288	0.769

Source: Data analysis by SmartPLS 3

Furthermore, the HTMT values range from 0.165 to 0.828, all remaining below the recommended threshold of 0.85. This finding indicates that the correlations among the latent constructs are sufficiently distinct, providing further evidence of discriminant validity. Therefore, Perceived Benefits (PB), Perceived Risks (PR), Financial Literacy (FL), Data Quality Trust (DQT), Algorithm Transparency (AT), AI Adoption (AA), and Investment Decision (ID) are empirically distinct constructs. Overall, the measurement model demonstrates satisfactory discriminant validity and is suitable for subsequent structural model analysis.

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Table 4. Heterotrait-Monotrait Ratio (HTMT)

	AA	AT	DQT	FL	ID	PB	PR
AA							
AT	0.456						
DQT	0.170	0.692					
FL	0.493	0.659	0.680				
ID	0.828	0.433	0.165	0.544			
PB	0.553	0.444	0.377	0.686	0.603		
PR	0.360	0.576	0.442	0.435	0.308	0.320	

Source: Data analysis by SmartPLS 3

Model Assessment and Discussion

The explanatory power of the structural model was assessed using the adjusted coefficient of determination. The results show that AI Adoption (AA) achieved an Adjusted R^2 of 0.372, indicating that Perceived Benefits (PB), Perceived Risks (PR), Financial Literacy (FL), Data Quality Trust (DQT), and Algorithm Transparency (AT) jointly explain 37.2% of the variance in AI Adoption. Meanwhile, Investment Decision (ID) recorded an Adjusted R^2 of 0.609, suggesting that AI Adoption explains 60.9% of the variance in Investment Decision. These findings indicate that the proposed model has moderate explanatory power for AI Adoption and substantial explanatory power for Investment Decision.

The structural model results reveal that AI Adoption (AA) has a significant positive effect on Investment Decision (ID) ($\beta = 0.781$, $t = 20.679$, $p < 0.001$), confirming the proposed relationship. Among all direct relationships examined in the model, this path exhibits the largest standardized coefficient, indicating that AI adoption is the strongest determinant of investment decision-making. This finding suggests that investors who actively adopt AI technologies are more likely to make informed and effective investment decisions by utilizing AI-generated financial analyses, market forecasts, and investment recommendations. AI enables investors to process large volumes of financial information more efficiently, reduce cognitive biases, and improve the accuracy of investment evaluations. These findings are consistent with Jamal et al. (2025), who argued that AI adoption enhances investors' analytical capability and contributes to superior investment performance. Therefore, AI adoption serves as a key mechanism through which AI technologies improve investment decision-making among individual investors in Vietnam.

Regarding the determinants of AI adoption, Perceived Benefits (PB) exhibit a significant positive influence on AI Adoption ($\beta = 0.318$, $t = 5.516$, $p < 0.001$), supporting H1. This result indicates that investors are more willing to adopt AI technologies when they perceive that AI improves the quality of financial analysis, enhances investment efficiency, increases forecasting accuracy, and leads to better investment outcomes. The relatively high path coefficient further suggests that perceived benefits represent one of the most influential drivers of AI adoption in the proposed model. This finding is consistent with the Technology Acceptance Model (TAM), which argues that users' perceptions of technology usefulness strongly influence their intention to adopt new technologies. It also supports the findings of Frank et al. (2026), who concluded that perceived benefits are among the strongest predictors of AI acceptance because users tend to adopt AI when they recognize its practical value and performance advantages. In the context of Vietnam's financial market, where investors are increasingly exposed to AI-powered analytical tools, perceived benefits appear to play a crucial role in encouraging AI adoption.

Table 5. Structural Equation Modelling Results Estimates

Paths	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Adjusted R^2
AA -> ID	0.781	0.779	0.038	20.679	0.000	AA: 0.372 ID: 0.609
AT -> AA	0.275	0.267	0.069	3.959	0.000	
DQT -> AA	-0.323	-0.308	0.059	5.487	0.000	
FL -> AA	0.250	0.242	0.072	3.491	0.001	

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PB -> AA	0.318	0.321	0.058	5.516	0.000
PR -> AA	0.132	0.140	0.059	2.229	0.026
AT -> AA -> ID	0.215	0.208	0.055	3.897	0.000
DQT -> AA -> ID	-0.252	-0.241	0.049	5.153	0.000
FL -> AA -> ID	0.196	0.190	0.059	3.329	0.001
PB -> AA -> ID	0.248	0.250	0.047	5.235	0.000
PR -> AA -> ID	0.103	0.109	0.046	2.252	0.025

Source: Data analysis by SmartPLS 3

Perceived Risks (PR) have a significant positive effect on AI Adoption ($\beta = 0.132$, $t = 2.229$, $p = 0.026$), supporting H2. This finding suggests that investors who perceive greater risks in financial markets are more likely to adopt AI technologies to support their investment decisions. As investment environments become increasingly volatile and information-intensive, investors may rely on AI to analyze large volumes of financial data, improve forecasting accuracy, identify potential market risks, and reduce decision uncertainty. AI-assisted financial analysis enables investors to evaluate investment opportunities more efficiently and respond more quickly to changing market conditions. Rather than discouraging technology adoption, higher perceived risks appear to motivate investors to utilize AI as a decision-support tool for managing uncertainty, minimizing potential losses, and enhancing decision quality. This finding is consistent with Jamal et al. (2025), who emphasized the important role of AI in supporting financial decision-making under uncertain market conditions by improving analytical capability and facilitating more informed investment choices. In the context of Vietnam, where AI-powered financial applications are becoming increasingly accessible, investors may perceive AI as an effective solution for coping with investment risks and making more rational financial decisions. Therefore, perceived risks can serve as an important driver encouraging individual investors to integrate AI technologies into their investment activities.

The findings also show that Financial Literacy (FL) has a significant positive effect on AI Adoption ($\beta = 0.250$, $t = 3.491$, $p = 0.001$), supporting H3. This result suggests that investors possessing higher levels of financial literacy are more likely to understand AI-generated analyses, critically evaluate investment recommendations, and effectively integrate AI technologies into their investment activities. Financial knowledge enables investors to better interpret analytical outputs, assess AI-generated information, and combine technological insights with their own investment experience. Consequently, financially literate investors tend to exhibit greater confidence in adopting AI-supported financial technologies. This finding is consistent with Behavioral Finance Theory, which emphasizes the importance of financial knowledge in improving decision quality, and aligns with the empirical evidence reported by Jamal et al. (2025), who found that financially knowledgeable investors derive greater value from AI-assisted financial decision-making.

Unexpectedly, Data Quality Trust (DQT) has a significant negative effect on AI Adoption ($\beta = -0.323$, $t = 5.487$, $p < 0.001$), resulting in the rejection of H4. This finding indicates that investors who place greater emphasis on data quality are, surprisingly, less likely to adopt AI technologies. The result is inconsistent with the findings of Bondac et al. (2026), who argued that high-quality and reliable data strengthen users' trust in AI-supported decision-making and encourage technology adoption. One possible explanation is that Vietnamese individual investors who highly value data quality may also maintain stricter standards regarding the accuracy, reliability, completeness, and credibility of financial information used by AI systems. When these expectations are not fully satisfied, investors may become more skeptical about AI-generated analyses and less willing to rely on AI technologies. Furthermore, concerns regarding the quality of publicly available financial data, potential inaccuracies in AI outputs, or insufficient transparency in data processing may reduce investors' confidence in adopting AI, despite recognizing its analytical capabilities. This finding highlights that trust in data quality remains a critical issue that should be addressed to facilitate wider AI adoption in financial investment.

The results further indicate that Algorithm Transparency (AT) has a significant positive influence on AI Adoption ($\beta = 0.275$, $t = 3.959$, $p < 0.001$), supporting H5. This finding suggests that investors are more willing to adopt AI technologies when they clearly understand how AI algorithms collect, process, and analyze financial information before generating investment recommendations. Transparent AI systems reduce uncertainty, improve users' confidence in AI-generated outputs, and enhance

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perceptions of fairness, accountability, and credibility. These characteristics are particularly important in financial investment, where investors often require clear explanations before relying on AI-generated recommendations. The result is consistent with Park and Yoon (2025), who argued that algorithm transparency strengthens users' trust in AI systems and significantly promotes technology adoption by reducing the "black-box" perception commonly associated with AI technologies.

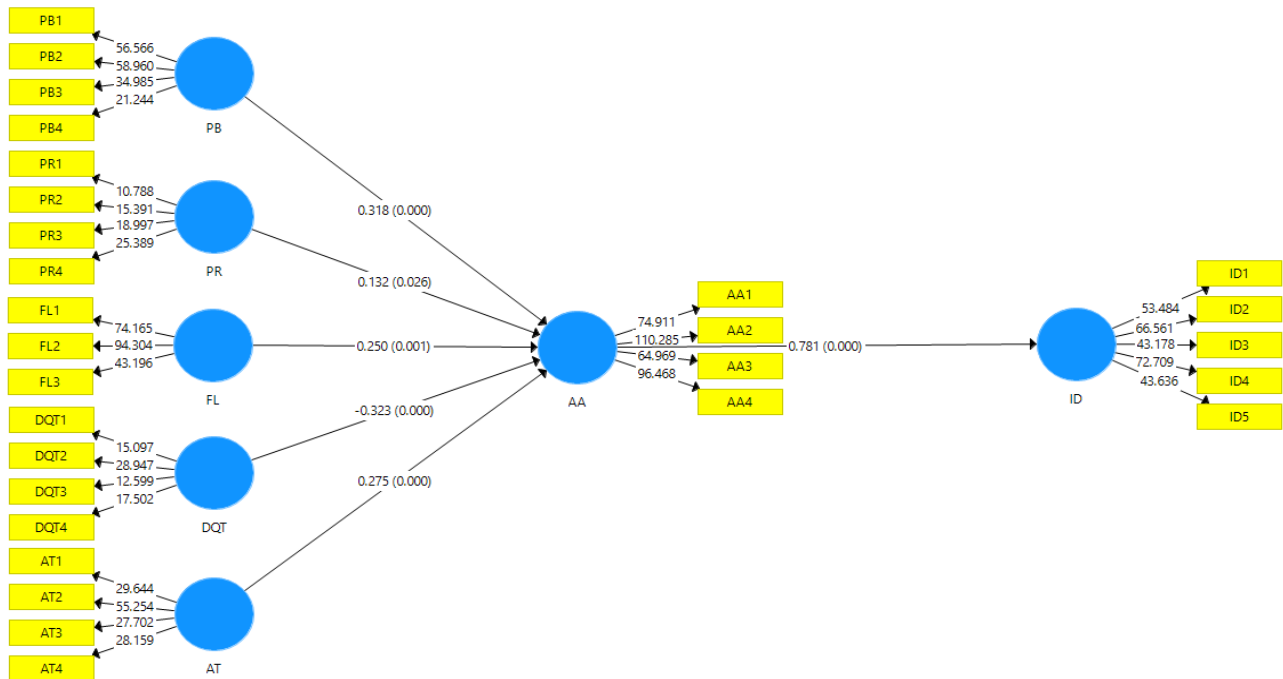


Figure 2. PLS Bootstrapping Model
Source: Data analysis by SmartPLS 3

AI Adoption (AA) has a significant positive effect on Investment Decision (ID) ($\beta = 0.781$, $t = 20.679$, $p < 0.001$), supporting H6. This result indicates that investors who adopt AI technologies are more likely to make effective investment decisions. By leveraging AI-powered financial analysis, investors can process large volumes of financial information, identify market trends, evaluate investment alternatives, and generate more accurate and objective investment recommendations. As a result, AI adoption enhances investors' ability to make timely and well-informed decisions while reducing information-processing limitations and behavioral biases. The relatively large path coefficient further indicates that AI Adoption is the strongest predictor of Investment Decision in the proposed model. This finding is consistent with Jamal et al. (2025), who reported that AI adoption significantly improves investors' analytical capability and investment performance. Therefore, AI adoption plays a crucial role in facilitating AI-assisted investment decision-making among individual investors in Vietnam.

The mediation analysis further demonstrates that AI Adoption serves as a significant mediating mechanism between the proposed antecedents and Investment Decision. Specifically, Perceived Benefits exert a positive indirect effect on Investment Decision through AI Adoption ($\beta = 0.248$, $p < 0.001$), supporting H7a, indicating that investors who recognize greater benefits from AI are more likely to adopt AI technologies, which subsequently improves investment decision quality. Similarly, Financial Literacy has a positive and significant indirect effect ($\beta = 0.196$, $p = 0.001$), supporting H7c, suggesting that financially knowledgeable investors improve their investment decisions primarily by adopting AI technologies. Algorithm Transparency also demonstrates a positive indirect effect ($\beta = 0.215$, $p < 0.001$), supporting H7e, confirming that transparent AI systems strengthen AI adoption and subsequently enhance investment decision-making. In contrast, Data Quality Trust exhibits a significant negative indirect effect on Investment Decision through AI Adoption ($\beta = -0.252$, $p < 0.001$), leading to the rejection of H7d. This result is consistent with the unexpected direct relationship observed for H4 and suggests that greater concern regarding data quality may indirectly reduce the effectiveness of AI-assisted investment decisions by discouraging AI adoption. Likewise, Perceived Risks show a significant positive indirect effect ($\beta = 0.103$, $p = 0.025$), resulting in the rejection of H7b because the direction of the relationship is opposite to the proposed hypothesis. Overall, these findings confirm that AI Adoption functions as the central mechanism through which investors' perceptions of AI technologies and their individual capabilities are translated into investment decisions. At the same time, the unexpected relationships involving Perceived Risks and Data Quality Trust

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suggest that AI adoption in the Vietnamese investment context is influenced by market-specific characteristics and investor perceptions, highlighting the need for further research to better understand these relationships.

V. RECOMMENDATIONS AND CONCLUSION

Theoretical Contributions

This study contributes to the literature on AI-assisted investment decision-making by integrating Behavioral Finance Theory, the Technology Acceptance Model (TAM), and Trust Theory into a unified framework for explaining AI adoption among individual investors in Vietnam. The findings demonstrate that Perceived Benefits, Financial Literacy, and Algorithm Transparency positively influence AI Adoption, while AI Adoption has a strong positive relationship with Investment Decision. These results reinforce the applicability of TAM in explaining investors' acceptance of AI-based financial technologies and highlight the importance of perceived usefulness, financial capability, and transparency in shaping technology adoption. At the same time, the unexpected positive effect of Perceived Risks and negative effect of Data Quality Trust provide additional insights into the complexity of AI adoption in an emerging-market context. Rather than assuming that investors always avoid technologies perceived as risky or that greater concern about data quality necessarily strengthens adoption, the findings suggest that investors' responses to AI may depend on how they perceive uncertainty, information reliability, and the limitations of AI-generated outputs. The significant mediating effects of AI Adoption further indicate that investors' perceptions and capabilities can be translated into investment decision-making through their willingness to integrate AI into financial activities. Overall, the study extends existing research by providing empirical evidence on the technological, behavioural, and trust-related determinants of AI-assisted investment decision-making among individual investors in Vietnam.

Practical Implications

For individual investors in Vietnam, the findings suggest that AI can be particularly useful in dealing with the increasing amount of financial information available in the Vietnamese securities market. Vietnamese retail investors can use AI tools to support the analysis of financial statements, stock-price movements, market news, company information, and investment risks. However, the strong relationship between AI Adoption and Investment Decision also highlights the need for investors to avoid relying entirely on AI-generated recommendations. Investors should verify AI-generated information against reliable sources such as company disclosures, financial reports, official market information, and reputable financial institutions before making investment decisions. The positive effect of Financial Literacy on AI Adoption further indicates that improving financial knowledge is important for Vietnamese investors to understand both the potential benefits and limitations of AI. This is particularly relevant for less experienced retail investors, who may be more vulnerable to inaccurate information, excessive confidence in AI-generated predictions, or misleading investment recommendations circulating on digital platforms.

For Vietnamese securities companies, fintech firms, banks, and providers of AI-based investment services, the findings indicate that AI products should be designed around the actual needs and characteristics of Vietnamese retail investors. Platforms offering AI-assisted financial analysis or robo-advisory services should provide clear explanations of how recommendations are generated, what data are used, and what limitations users should consider. The positive relationship between Algorithm Transparency and AI Adoption suggests that explainable AI may be especially important for gaining the confidence of Vietnamese investors. At the same time, the unexpected negative relationship between Data Quality Trust and AI Adoption highlights the importance of improving the credibility and transparency of financial data used by AI systems. Vietnamese financial-service providers should therefore clearly identify data sources, regularly update financial information, disclose potential data limitations, and establish mechanisms for correcting inaccurate AI-generated outputs. AI services should also be developed in Vietnamese and adapted to local investment products, market conditions, regulations, and investor characteristics rather than simply adopting models designed for developed markets.

For Vietnamese regulators and financial-market institutions, the findings highlight the need to develop an appropriate environment for the responsible adoption of AI in retail investment. As the number of individual investors and digital financial services continues to expand, regulatory attention should focus on transparency of AI-generated investment recommendations, protection of investors' personal and financial data, cybersecurity, algorithmic accountability, and the suitability of automated advice for different investor groups. The State Securities Commission, securities companies, and other relevant financial institutions could strengthen investor education programs that explain how AI-based investment tools work, how to evaluate AI-generated information, and the risks of excessive dependence on automated recommendations. Clear requirements concerning disclosure of AI usage and responsibility for AI-assisted recommendations could also improve investor protection and market confidence. These measures would help Vietnam take advantage of AI's potential to improve financial information accessibility

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and analytical efficiency while ensuring that technological innovation develops consistently with the country's securities-market regulations and the interests of individual investors.

Limitation and Future Research Directions

This study has several limitations that should be considered when interpreting its findings. The sample consists of 309 individual investors in Vietnam who have experience using AI tools for financial analysis or investment decision-making, and the use of online and offline convenience-based survey distribution may limit the generalizability of the findings to the broader population of Vietnamese investors. The cross-sectional design also captures respondents' perceptions at a particular point in time and therefore cannot fully establish how AI adoption and investment behaviour may change as technologies and market conditions evolve. In addition, the study relies on self-reported questionnaire responses, which may be affected by respondents' subjective perceptions or response bias. The unexpected relationships between Perceived Risks, Data Quality Trust, and AI Adoption also indicate that additional factors may influence AI adoption but are not included in the current model. Future research could therefore employ larger and more representative samples, longitudinal or experimental designs, and comparisons across investor groups, investment products, or countries. Further studies could also examine variables such as perceived AI accuracy, explainability, privacy concerns, human-AI collaboration, regulatory awareness, and actual investment performance to provide a more comprehensive understanding of AI-assisted investment decision-making.

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