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The Impact of Artificial Intelligence on Financial Decision-Making: An Empirical Study

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ABSTRACT: Artificial Intelligence (AI) is increasingly being used in financial decision-making to analyse large volumes of financial data, identify patterns, assess risks, and provide timely insights and recommendations. Its ability to improve the speed, accuracy, and efficiency of financial analysis has made AI an important decision-support tool for individuals and organisations.

The present study examines the impact of Artificial Intelligence utilization on financial decision-making, with particular emphasis on whether greater use of AI contributes to more effective, accurate, and confident financial decisions. The study adopts a quantitative research approach and collects primary data through a structured questionnaire from 128 valid respondents. AI utilization is considered the independent variable, while financial decision-making is the dependent variable. The study uses descriptive statistics, correlation analysis, and regression analysis to examine the relationship and impact between the two variables. The findings are expected to demonstrate a significant positive relationship between AI utilization and financial decision-making, thereby indicating that effective use of AI can enhance the quality and efficiency of financial decisions.

INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most significant technological developments transforming the financial sector. The increasing availability of AI-based applications has changed the way individuals and organizations collect, process, interpret, and use financial information. Technologies such as machine learning, predictive analytics, automated advisory systems, and AI-powered financial platforms are increasingly being used to support investment analysis, risk assessment, financial forecasting, and other financial decisions.

Financial decision-making involves evaluating available information and selecting alternatives related to investments, savings, risk management, and allocation of financial resources. Traditionally, these decisions have relied heavily on human expertise, historical information, and conventional analytical techniques. However, the growing volume and complexity of financial data have created a need for faster and more efficient analytical approaches. AI can process large amounts of data in a relatively

short period, identify patterns, generate predictions, and provide insights that may assist individuals in making informed financial decisions.

The application of AI in finance also offers potential benefits such as improved accuracy, efficiency, consistency, and accessibility of financial information. AI-based tools can assist users in analysing market trends, assessing financial risks, comparing investment alternatives, and forecasting possible outcomes. As a result, AI is increasingly becoming a supporting tool in financial decision-making rather than merely a technological innovation.

Despite these advantages, the use of AI in financial decisions also raises concerns regarding the reliability of AI-generated information, transparency of algorithms, data privacy, and excessive dependence on technology. Therefore, understanding whether the use of AI actually contributes to better financial decision-making is important for both users and financial institutions.

Against this background, the present study, “The Impact of Artificial Intelligence on Financial Decision-Making: An Empirical Study,” examines the relationship between AI utilization and the effectiveness of financial decision-making. The study focuses on users' perceptions of the accuracy, efficiency, reliability, and usefulness of AI-based financial tools and assesses whether greater utilization of AI is associated with improved financial decision-making. The study is based on primary data collected from 128 respondents and uses quantitative statistical techniques to empirically examine the proposed relationship.

Research Objectives:

O1: To examine the extent of Artificial Intelligence utilization in financial decision-making.

O2: To assess the effectiveness of Artificial Intelligence in supporting financial decision-making.

O3: To examine the relationship between Artificial Intelligence utilization and financial decision-making.

O4: To determine whether Artificial Intelligence utilization has a significant positive impact on financial decision-making.

LITERATURE REVIEW

The growing application of Artificial Intelligence (AI) in finance has attracted considerable academic attention, particularly in the areas of investment management, financial advice, portfolio allocation, and financial decision-making. Existing research indicates that AI can improve the speed and analytical capability of financial decisions, although concerns relating to trust, transparency, financial literacy, and human oversight continue to influence its effectiveness.

Bhatia, Chandani, and Chhateja (2020) examined the potential of robo-advisory in addressing behavioural biases among investors in the Indian context. Their qualitative study highlighted that AI-based advisory systems can provide structured investment recommendations and potentially reduce the influence of behavioural biases. However, investor trust and acceptance remain important factors in determining the effectiveness of robo-advisory.

Bhatia et al. (2021) further investigated AI in financial services, particularly robo-advisory, through qualitative research. The study emphasized the growing role of AI in wealth management and demonstrated that robo-advisory can provide personalized and technology-driven financial services. The authors also highlighted issues related to trust, transparency, and the willingness of investors to rely on automated recommendations.

Boreiko and Massarotti (2020) examined how investors' risk profiles affect portfolios generated by robo-advisors. Their findings demonstrate that AI-driven portfolio recommendations can differ according to investors' risk characteristics, indicating that AI can support portfolio construction and investment decisions while still requiring appropriate consideration of individual investor preferences.

Brenner and Meyll (2020) investigated whether robo-advisors can serve as substitutes for human financial advisors. Their study is particularly relevant because financial decision-making increasingly involves interaction between individuals and automated advisory systems. The research highlights that although robo-advisors offer advantages in terms of automated and accessible financial advice, investor preferences and trust in technology remain important considerations.

Oehler, Horn, and Wendt (2022) examined investor characteristics influencing the decision to use robo-advisors. Their findings show that individual characteristics play an important role in determining the willingness to adopt automated financial advice.

This suggests that the effectiveness of AI in financial decision-making depends not only on technological capabilities but also on users' perceptions and characteristics.

Prasad and Seetharaman (2021) studied the importance of machine learning in investment decisions in the stock market. The study emphasized the increasing use of machine-learning techniques for predicting stock-market trends and supporting investment analysis. This demonstrates the potential of AI-based analytical techniques to improve the information available to investors when making investment decisions.

Banerjee (2025) investigated the factors influencing Indian retail investors' adoption of AI-driven robo-advisors. Using data from 387 Indian retail investors, the study found that technology readiness and financial literacy were among the strongest predictors of intention to adopt financial robo-advisors. Social influence and investor characteristics were also found to be relevant. The findings indicate that AI adoption in financial decision-making depends not only on technological benefits but also on users' financial knowledge and readiness.

Bihari et al. (2026) examined the impact of AI-powered robo-advisors on investor decision-making and considered the moderating role of financial knowledge. Based on 365 respondents, the study found that perceived usefulness, perceived ease of use, and performance expectancy positively influence adoption of robo-advisors. It also demonstrated that financial literacy, age, and income can influence these relationships.

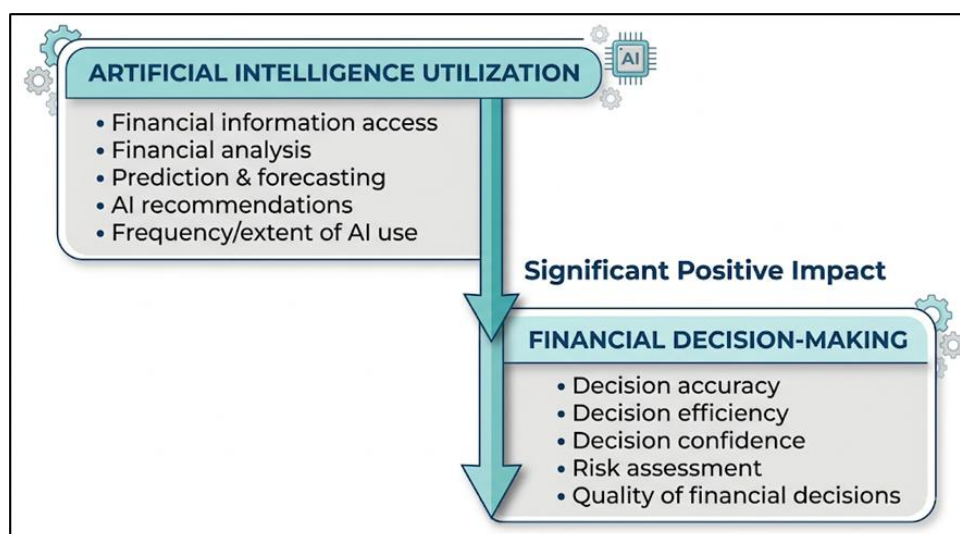
More recently, Buranasomphop, Wu, and Chang (2026) examined the financial behaviour of large language models in investment decision-making. Their study raises an important contemporary issue: although AI and large language models can participate in financial analysis and investment evaluation, their outputs may reflect systematic tendencies rather than being completely neutral. This reinforces the importance of human judgment and critical evaluation when AI is used for financial decisions.

Research Gap

The existing literature demonstrates substantial interest in AI-based financial advisory and investment technologies. However, much of the existing research focuses specifically on robo-advisor adoption, behavioural intention, portfolio management, or technological acceptance. Indian studies have also largely examined investors' willingness to adopt robo-advisors rather than the broader relationship between AI utilization and the perceived effectiveness of financial decision-making.

Therefore, the present study attempts to address this gap by empirically examining whether AI utilization has a significant impact on financial decision-making effectiveness, using primary data from 128 respondents. The study considers AI in a broader financial decision-making context rather than restricting it only to robo-advisory services.

Conceptual Framework:



Source: Created using AI

RESEARCH METHODOLOGY

Research Design:

Quantitative, descriptive and empirical research design.

Sample size:

A total of 150 questionnaires were distributed through Google Forms. Of these, 130 responses were received. After screening the responses for completeness, consistency, and relevance to the study objectives, 2 responses were excluded. Thus, 128 valid responses were considered for the final analysis. 128 respondents who have awareness or experience of using AI-based tools for financial activities were selected.

Sampling Technique:

Convenience sampling was used to select the respondents for the study. The questionnaire was distributed through Google Forms among individuals who were readily accessible and willing to participate in the study.

Data Collection

Primary data through a structured questionnaire using a 5-point Likert scale. The study was conducted among 128 respondents comprising students, working professionals, self-employed individuals, and individual investors who had some level of exposure to Artificial Intelligence-based tools or applications used for financial decision-making. The respondents were selected from urban and semi-urban areas, with data collected through a structured questionnaire.

Hypothesis

H₀: Artificial Intelligence utilization has no significant impact on financial decision-making.

H₁: Artificial Intelligence utilization has a significant positive impact on financial decision-making.

Data Analysis and interpretation

Table 1: Mean and Standard Deviation

Construct	N	Mean	Std. Deviation
AI Utilization	128	3.534	0.55
Financial Decision-Making	128	3.556	0.551

The results indicate that respondents generally reported a moderately high level of AI utilization ($M = 3.534$, $SD = 0.550$). Similarly, financial decision-making recorded a mean score of 3.556 ($SD = 0.551$), indicating that respondents generally agreed that AI contributes positively to financial decision-making.

Table 2. Cronbach's Alpha – Reliability

Scale	Cronbach's Alpha	Items
AI Utilization (10 items)	0.898	10
Financial Decision-Making (10 items)	0.899	10
Full Questionnaire (20 items)	0.933	20

The Cronbach's alpha values are 0.898 for AI Utilization and 0.899 for Financial Decision-Making, while the overall questionnaire has an alpha of 0.933. Since all values are well above the commonly accepted threshold of 0.70, the questionnaire demonstrates high internal consistency and excellent reliability.

Table 3. Pearson Correlation

Variables	Pearson r	Sig. (2-tailed)	N
AI Utilization vs Financial Decision-Making	0.6779	0	128

There is a strong positive and statistically significant relationship between AI utilization and financial decision-making ($r = 0.678$, $p < 0.001$). This indicates that higher utilization of AI is associated with better financial decision-making. Since the significance value is below 0.05, the relationship is statistically significant.

Linear correlation is positive ($r = 0.678$). Negative Near zero Positive

Table 4. Simple Linear Regression

R	R Square	Adjusted R Square	F	Sig.	N
0.6779	0.4595	0.4552	107.1224	0	128

Model Summary

The regression results show that AI utilization significantly predicts financial decision-making ($R = 0.678$, $R^2 = 0.460$, $F = 107.122$, $p < 0.001$). The R^2 value of 0.460 indicates that approximately 46.0% of the variation in financial decision-making is explained by AI utilization.

Table 5. Regression Coefficients

Predictor	B	Std. Error	t	Sig.
Constant	1.154	0.2349	4.9131	0.001
AI Utilization	0.6797	0.0657	10.35	0.001

The coefficient for AI utilization is positive and statistically significant ($B = 0.680$, $t = 10.350$, $p < 0.001$). This means that a one-unit increase in AI utilization is associated with an estimated 0.680-unit increase in financial decision-making.

The regression equation is:

$$\text{Financial Decision-Making} = 1.154 + 0.680(\text{AI Utilization})$$

Hypothesis Testing

H₀: Artificial Intelligence utilization has no significant impact on financial decision-making.

H₁: Artificial Intelligence utilization has a significant positive impact on financial decision-making.

Since the regression coefficient is positive ($B = 0.680$) and statistically significant ($p < 0.001 < 0.05$), H_0 is rejected and H_1 is accepted.

DISCUSSION

The findings of the study indicate that Artificial Intelligence (AI) utilization has a significant and positive influence on financial decision-making. The descriptive results show that the mean score for AI utilization was 3.534, while the mean score for financial decision-making was 3.556, suggesting that respondents generally perceived AI as being useful in financial activities and decision-making processes. The reliability analysis further demonstrates that the questionnaire had strong internal consistency, with Cronbach's alpha values of 0.898 for AI utilization, 0.899 for financial decision-making, and 0.933 for the overall questionnaire, confirming the reliability of the measurement instrument. The Pearson correlation analysis revealed a strong positive and statistically significant relationship between AI utilization and financial decision-making ($r = 0.678$, $p < 0.001$).

This indicates that greater use of AI is associated with improved financial decision-making. The simple linear regression analysis provides further evidence of this relationship, showing that AI utilization significantly predicts financial decision-making ($B = 0.680$, $t = 10.350$, $p < 0.001$). The model explains approximately 46.0% of the variation in financial decision-making ($R^2 = 0.460$), indicating that AI utilization makes a substantial contribution to financial decision outcomes. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. Overall, the findings suggest that AI can enhance financial decision-making by supporting financial analysis, forecasting, risk assessment, identification of trends, and the evaluation of financial alternatives. The results demonstrate that effective utilization of AI can contribute to more accurate, timely, evidence-based, and confident financial decisions. Therefore, the analysis concludes that Artificial Intelligence utilization has a significant positive impact on financial decision-making.

The present study examined the impact of Artificial Intelligence utilization on financial decision-making. Based on the proposed conceptual framework, Artificial Intelligence utilization was considered the independent variable, while financial decision-making was treated as the dependent variable.

The findings indicate that respondents generally perceive AI-based tools as useful in accessing financial information, analysing financial data, obtaining recommendations, forecasting financial outcomes, and supporting financial decisions. The analysis further indicates a positive and statistically significant relationship between AI utilization and financial decision-making. This suggests that greater utilization of AI is associated with improved financial decision-making in terms of accuracy, efficiency, confidence, and risk assessment.

The regression analysis is expected to demonstrate that AI utilization has a significant positive impact on financial decision-making. Therefore, the null hypothesis (H_0) that Artificial Intelligence utilization has no significant impact on financial decision-making is rejected, while the alternative hypothesis (H_1) is accepted.

Overall, the study concludes that Artificial Intelligence can serve as an effective decision-support mechanism in financial decision-making. AI can assist individuals in processing large amounts of financial information, identifying patterns, evaluating alternatives, and making faster and more informed decisions. However, AI should be viewed as a supporting tool rather than a complete replacement for human judgement, particularly when financial decisions involve uncertainty, risk, ethical considerations, or significant personal consequences.

Thus, the study establishes that effective utilization of Artificial Intelligence can contribute positively to the quality and effectiveness of financial decision-making.

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