

Artificial Intelligence in Finance: Examining the Role of FinTech Adoption in Investor Behaviour and Decision-Making

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Abstract

The rapid advancement of **Artificial Intelligence (AI)** and **Financial Technology** has transformed the financial services industry through innovations such as robo-advisors, algorithmic trading, and personalized investment platforms. These technologies have redefined traditional investment decision-making by offering data-driven insights, predictive analytics, and customized financial solutions.

This study investigates the impact of AI-based financial technologies on individual investors' decision-making behaviour. It examines key factors—perceived usefulness, trust, financial literacy, risk perception, and technology adoption—that influence acceptance and utilization of AI-driven financial services. A structured questionnaire survey will be employed to collect primary data from investors.

The findings aim to provide actionable insights for financial institutions, FinTech companies, and policymakers to enhance adoption strategies, strengthen trust, and address risk concerns in digital finance.

Keywords: Artificial Intelligence, FinTech, Investor Behaviour, Digital Finance, Robo-Advisory, Financial Literacy

1. Introduction

The financial sector has undergone profound transformation due to technological innovation. AI has emerged as a pivotal force in financial management, enabling automated data analysis, predictive modelling, fraud detection, portfolio optimization, and personalized investment recommendations.

Traditionally, investment decisions relied on financial advisors, market trends, and personal experience. Today, AI-powered platforms deliver real-time market analysis, automated portfolio management, and tailored recommendations aligned with investor risk profiles.

While FinTech adoption offers efficiency and accessibility, challenges remain regarding **trust**, security, privacy, and technology acceptance. Understanding these behavioural factors is critical for advancing AI-enabled financial services.

2. Problem Statement

Despite the efficiency and personalization offered by AI-based financial technologies, many investors hesitate to adopt them. Concerns about data privacy, cybersecurity, reliability of AI recommendations, and perceived risks hinder widespread acceptance. This study analyzes the behavioural and psychological factors influencing adoption and their impact on investment decision-making.

3. Objectives

- To assess investor awareness of AI-based financial technologies.

- To analyse the relationship between AI adoption and investment behaviour.
- To examine the influence of **financial literacy** on FinTech adoption.
- To identify the role of trust and risk perception in AI-based investment decisions.
- To provide policy and institutional recommendations for enhancing adoption.

4. Research Hypotheses

- **H1:** AI-based financial technology adoption positively impacts investment decision-making behaviour.
- **H2:** Financial literacy significantly influences adoption of AI-based financial services.
- **H3:** Trust in AI technology positively affects investors' willingness to use FinTech platforms.
- **H4:** Perceived risk negatively influences AI-based financial technology adoption.

5. Methodology

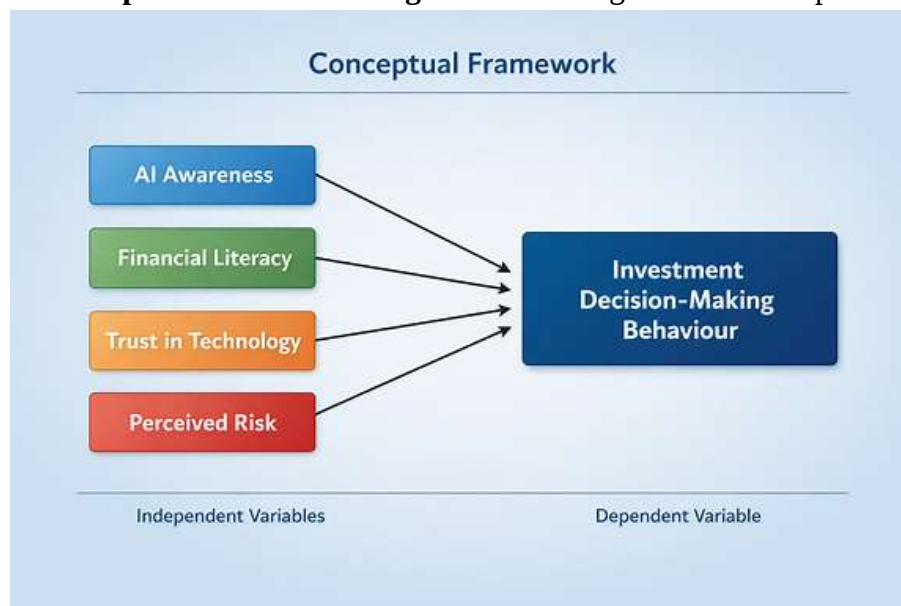
- **Design:** Descriptive and analytical.
- **Data Collection:**
 - *Primary:* Structured questionnaire survey of individual investors.
 - *Secondary:* Academic journals, financial reports, and industry publications.
- **Sample Size:** 150–300 investors.
- **Sampling Method:** Random or stratified sampling to ensure demographic diversity.
- **Statistical Tools:** Percentage analysis, Cronbach's Alpha, correlation, regression, ANOVA, t-test, and potentially Structural Equation Modelling (SEM).

6. Conceptual Framework

Independent Variables: AI Awareness, Financial Literacy, Trust in Technology, Perceived Risk

Dependent Variable: Investment Decision-Making Behaviour

Below is the **visual conceptual framework diagram** illustrating the relationships:



7. Expected Findings

The study anticipates that AI-based financial technologies enhance investment efficiency, accessibility, and decision quality. However, adoption will be moderated by trust, cybersecurity concerns, financial

literacy, and perceived risk. Findings are expected to underscore the importance of investor education and secure, transparent AI-driven platforms.

8. Conclusion

AI and FinTech are reshaping financial management by improving speed, accuracy, and personalization in investment decisions. Understanding investor behaviour toward AI-enabled services is essential for institutions and policymakers to design effective adoption strategies. Building trust, addressing risk concerns, and enhancing financial literacy will be critical to the sustainable growth of digital finance.

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