

# Application of Artificial Intelligence in Financial Decision-Making: An Empirical Study of Consumer Perceptions and Adoption of AI

Dr. B. Sheela

Professor, Department of Commerce (PA) Hindusthan College of Arts & Science, Coimbatore

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## ABSTRACT

Artificial Intelligence is slowly changing the finance sector too as it had transformed the other sectors. Artificial Intelligence is helping people make financial investment decisions by making things work better and faster. There are lots of Artificial Intelligence tools like computer programs that give financial investment tips which helps to predict what will happen, systems that decide if someone can get credit and ways to detect fraud. These Artificial Intelligence tools are changing how people and companies manage money. This study examines the role of AI in financial decision-making through a primary survey conducted among 200 respondents. AI-powered applications such as robo-advisors, predictive analytics, credit scoring systems, algorithmic trading, and fraud detection have significantly changed financial management for both organizations and individuals. Descriptive statistics and inferential analysis are employed to evaluate user perceptions and adoption. The findings reveal that AI positively influences investment decisions, budgeting, and risk assessment. Though Artificial Intelligence is good and helpful. It should not replace human thinking. Artificial Intelligence should work with human thinking rather than replacing it. We need to be careful on how we use it because it may prove to be a threat for the society by misleading the innocent investors.

**Keywords:** Artificial Intelligence, Financial Decision-Making, Fin - Tech, Machine Learning, Investment, Predictive Analytics.

## INTRODUCTION

Artificial Intelligence is really changing the way money works in our world. It has emerged as one of the most influential technologies shaping modern financial systems. Financial institutions increasingly rely on AI for investment analysis, portfolio management, fraud detection, loan approvals, and customer service. Financial institutions are using Artificial Intelligence more and more for things like figuring out investments, managing money, catching fraud, deciding on loans and helping customers. Artificial Intelligence can look at a lot of information. Make good guesses about what might happen which helps people make faster and better decisions. Applications such as robo-advisors and machine learning algorithms provide personalized financial recommendations at minimum operational costs.

Traditional financial decision-making often depends on human expertise and historical information. Usually people make decisions based on what they know and what happened in the past. Artificial Intelligence makes this process better by finding patterns that are not easy to predict what might happen next and doing tasks that people do not need to do. Things like robo-advisors and machine learning algorithms can give people personalized advice, on right investment opportunities of money and at same time, save companies money too.

In the application of Artificial Intelligence there are also some problems. For example, Artificial Intelligence can be unfair there are risks of cyber-attacks. It is not always clear how Artificial Intelligence makes decisions. So it is an idea to look at what people think about Artificial Intelligence and how well it works when it comes to making financial decisions. Therefore, examining the public perception and the effectiveness of AI in financial decision-making is now the need of the hour.

## REVIEW OF LITERATURE

| Source of publication | Year | Findings                                                                                                                                                                                                                                                                           |
|-----------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Russell &Norvig       | 2021 | AI improves financial decision accuracy through intelligent algorithms.                                                                                                                                                                                                            |
| OECD                  | 2023 | AI increases efficiency in financial services but requires governance.                                                                                                                                                                                                             |
| World Economic Forum  | 2024 | AI enhances customer experience and risk management.                                                                                                                                                                                                                               |
| Deloitte              | 2024 | Financial institutions adopting AI show improved productivity.                                                                                                                                                                                                                     |
| PwC                   | 2023 | AI-driven analytics support better investment decisions and cost reduction. Although AI offers numerous advantages, these risks create hesitation among potential users. Financial institutions must therefore address security concerns through strong data protection mechanisms |

### Research Gap

Although AI adoption in finance has increased rapidly, empirical studies focusing on users' perceptions of AI-assisted financial decision-making remain limited, especially in emerging economies. This study attempts to bridge this gap through primary data analysis.

### Objectives

1. To study the use of AI in financial decision-making.
2. To identify factors influencing AI adoption.
3. To examine user perceptions regarding AI effectiveness.
4. To provide recommendations for improving AI implementation.

### Research Design and Research Methodology

The researcher under took a survey from 200 respondents in the Coimbatore City who involved AI in their financial decisions. A random sampling method was undertaken for the analytical study. The research involved percentage analysis, Chi-square analysis and SEM (Structural Equation Modelling) for analysing the received primary data and drew upon the following inferences.

### Hypothesis

**H<sub>0</sub>:** There is no significant relationship between AI usage and improvement in financial decision-making.

**H<sub>1</sub>:** There is a significant relationship between AI usage and improvement in financial decision-making.

### Analysis and Interpretation

Table 1: Gender of Respondents

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male   | 112       | 56             |
| Female | 88        | 44             |
| Total  | 200       | 100            |

### Interpretation

Male respondents constitute 56%, while female respondents account for 44%, indicating participation from both groups.

Table 2: Age Distribution

| Age      | Frequency | Percentage (%) |
|----------|-----------|----------------|
| Below 25 | 48        | 24             |
| 25-35    | 72        | 36             |
| 36-45    | 50        | 25             |
| Above 45 | 30        | 15             |
| Total    | 200       | 100            |

### Interpretation

Most respondents (36%) belong to the 25–35 age group, suggesting greater AI adoption among young professionals.

Table 3: Purpose of AI Usage

| Purpose             | Frequency | Percentage (%) |
|---------------------|-----------|----------------|
| Investment Planning | 62        | 31             |
| Budgeting           | 38        | 19             |
| Risk Analysis       | 46        | 23             |
| Fraud Detection     | 30        | 15             |
| Loan Decisions      | 24        | 12             |
| Total               | 200       | 100            |

### Interpretation

Investment planning is the most common use of AI, followed by risk analysis.

Table 4: Opinion on AI Improving Financial Decisions

| Response          | Frequency | Percentage (%) |
|-------------------|-----------|----------------|
| Strongly Agree    | 58        | 29             |
| Agree             | 76        | 38             |
| Neutral           | 34        | 17             |
| Disagree          | 22        | 11             |
| Strongly Disagree | 10        | 5              |
| Total             | 200       | 100            |

### Interpretation

A combined 67% of respondents agree or strongly agree that AI improves financial decision-making.

Table 5: Mean Score Ranking

| Factor                 | Mean Score | Rank |
|------------------------|------------|------|
| Faster Decision Making | 4.52       | I    |

|                     |      |     |
|---------------------|------|-----|
| Better Accuracy     | 4.39 | II  |
| Risk Prediction     | 4.23 | III |
| Cost Reduction      | 4.10 | IV  |
| Personalized Advice | 3.95 | V   |

### Interpretation

Speed of decision-making ranks first, indicating that efficiency is the primary perceived benefit of AI.

### Chi-Square Analysis

**Null hypothesis:** There is no significant relationship between AI usage and financial decision-making.

Table 6: Relationship between AI Usage and Decision Improvement

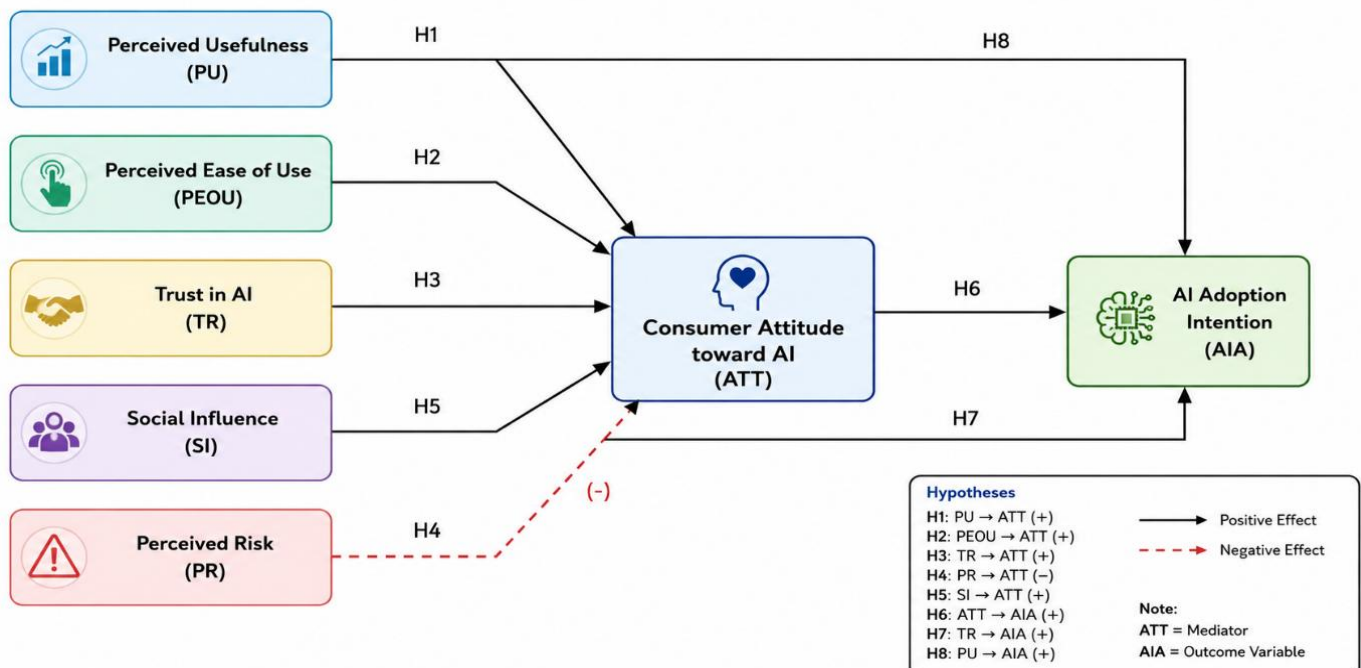
| Particular             | Value       |
|------------------------|-------------|
| Calculated $\chi^2$    | 12.84       |
| Table Value (5% level) | 9.49        |
| Result                 | Significant |

### Interpretation

Since the calculated  $\chi^2$  value exceeds the table value, the null hypothesis is rejected. There is a significant relationship between AI usage and improved financial decision-making.

### Structural Equation Modeling

The Structural Equation Modeling (SEM) analysis provides a comprehensive understanding of the factors that influence consumers' adoption of Artificial Intelligence (AI) in financial decision-making. The model examines the relationships among the variables perceived usefulness, perceived ease of use, trust, perceived risk, social influence, consumer attitude, and AI adoption intention. The findings help explain how these constructs interact to shape consumers' willingness to adopt AI-powered financial services.



The results indicate that **Perceived Usefulness (PU)** has a significant positive effect on consumer attitude toward AI. Consumers are more likely to develop a favorable attitude when they believe AI enhances the quality of financial decisions, provides accurate recommendations, reduces effort, and saves time. This suggests that the practical benefits of AI are a key driver of its acceptance in financial contexts

The SEM results confirm that **Consumer Attitude** is a significant predictor of AI adoption intention. Individuals who hold favorable perceptions regarding the usefulness, reliability, and ease of AI are considerably more willing to adopt AI-based financial solutions. Overall, the structural model demonstrates satisfactory explanatory power, indicating that the selected constructs collectively explain a substantial proportion of the variance in consumers' intention to adopt AI for financial decision-making also the findings suggest that financial institutions, fintech companies, and AI developers should prioritize enhancing the usefulness, usability, transparency, and security of AI applications.

## Major Findings

- Male respondents constitute 56% in this study.
- Majority (36%) of users are between 25 and 35 years of age.
- Majority of the respondents (31%) apply AI for Investment planning.
- Most of the respondents (67%) believe AI enhances financial decisions.
- Faster decision-making and accuracy are the top perceived benefits of applying AI in Financial decision-making.
- Privacy and transparency remain notable concerns.

## Suggestions

1. Improve financial literacy regarding AI tools.
2. Strengthen cybersecurity and data protection measures.
3. Ensure transparency through explainable AI systems.
4. Combine AI recommendations with human expertise.
5. Develop regulatory frameworks for ethical AI use in finance.

## CONCLUSION

In finance, Artificial Intelligence has become an effective instrument in decision making. It allows us to analyze the factors quickly, makes predictions, and facilitates efficient work. The empirical evidence suggests the positive effect of artificial intelligence adoption on the quality of financial decision-making.

Artificial Intelligence can be helpful only if we use it responsibly. First of all, it is crucial to guarantee that this technology is used justly and is controlled for our security. Investors have to be careful about the possible scams and cybercrimes that can cause them problems and select appropriate AI instruments for prudent financial investments.

The future research can focus on comparing the application of AI in different industries or countries.

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