

Role of Artificial Intelligence in Financial Decision Making

Deekshitha S, Dinesh Prasad G, Karthik P

B.COM, CMR UNIVERSITY, Bengaluru, India

s.deekshitha@cmr.edu.in, dinesh.prasad@cmr.edu.in, Karthik_p@cmr.edu.in

Abstract: *AI in Finance, The role of AI in decision-making by financial firms is gradually increasing. Financial institutions today are faced with large volumes of data, and human evaluation alone can no longer provide adequate speed and accuracy of data analysis. With the use of AI, firms can analyze large amounts of data, forecast results, and assist lower-quality decisions with improved outcomes regarding investments, risk, credit, and fraud detection. The purpose of this research is to identify how AI can assist in financial decision-making clearly and practically. The research collected primary data through surveys and interviews of individuals studying or working within the finance sector, as well as by reviewing secondary data from reports. The results of this study indicate that AI increases the speed and accuracy of financial decisions, but that these outcomes should always be complemented by the judgment of humans.*

Keywords: Artificial Intelligence, Financial Decision-Making, Data Analytics, Risk Management

I. INTRODUCTION

Financial decision-making entails assessing a variety of options regarding money, investments, saving, borrowing, and risk. In the past, such decisions were often made based on past experiences, manual calculations, and limited amounts of information. However, the financial world is now much faster paced and more complicated than ever before.

Artificial Intelligence (AI) addresses this issue by allowing users to process massive volumes of data in seconds. AI tools are able to analyze patterns, project future trends, and provide recommendations that assist managers and investors with their decision-making. The banking industry, the insurance industry, and many fintech companies have been increasingly utilizing AI to support the approval of loans, the identification of fraud, and/or to support the management of funds for company investments.

While AI provides powerful support, it can never completely replace the necessity of human thought processes. Understanding emotions, exercising ethical judgment, and using past experiences remain essential in the financial services industry. As a result, this research examines the role of AI in finance as a decision-support system, not as a decision-maker.

II. REVIEW OF LITERATURE

They say earlier research has shown that Artificial Intelligence enhances financial decision-making by decreasing human error and saving time. The research has shown that an Artificial Intelligence system makes market data available much faster than any human being could do and can provide better accuracy in predictions.

Other research states that although Human Specialist Work is enhanced through the additional ability of Artificial Intelligence to operate swiftly, problems can result from the increased efficiency of this type of work (lack of transparency or data privacy issues). Some researchers feel that an Artificial Intelligence system is more effective when used in conjunction with human skills. In summary, the literature shows that AI can help in finance, however, there should be caution before using AI in finance.

III. OBJECTIVES OF THE STUDY

- To find out what Artificial Intelligence does to help with finance



- To find out whether AI has made finance more accurate or quicker to make
- To determine how AI is beneficial and negative for finance
- To find out how people feel about AI's effect on their finances

IV. RESEARCH METHODOLOGY

Research Design

For this research study, a descriptive and analytical design was utilized. In order to analyze how AI will affect making financial decisions today, both primary and secondary data sources were gathered.

Data Collection

Primary Data: A structured questionnaire was administered and responses were collected from two hundred respondents, which included individuals in finance, students studying finance, and executives in business.

Secondary Data: Journals; research papers; industry reports; and financial websites.

Sample Selection

To ensure a representative sample of people in the financial industry (who are most affected by AI being introduced to the finance industry), a random sampling method was used to select people from all different segments of the financial industry.

Data Analysis Tools

The collected data were analyzed using both percentage analysis and correlation analysis.

V. THEORETICAL FRAMEWORK

Both of these models support a framework that is utilized in this research, with each model providing insight into two key aspects of understanding and utilizing AI tools in making decisions.

Decision Theory

Rational decision-making can be achieved through evaluating available alternatives and outcomes. The use of AI assists this process through analyzing large sets of data to produce predictions that are useful to the user.

Technology Acceptance Model (TAM)

This model provides an explanation for user acceptance of AI technology. Key components used to explain user acceptance are perceived usefulness and ease of use. The TAM model is useful to understand why users of financial services choose to utilize the AI tool for their decision-making.

VI. DATA ANALYSIS

Table 1: Awareness of AI in finance

| Awareness level | Number of respondents | Percentage |
|-----------------|-----------------------|------------|
| High | 62 | 41% |
| Moderate | 58 | 39% |
| Low | 30 | 20% |
| Total | 150 | 100% |

Source: Primary data collected through questionnaire survey, following standard research methodology guidelines (Kothari, 2004).

Table 2 : Areas where AI is used in finance

| Areas | Respondents % |
|------------------------|---------------|
| Investment Decision | 30% |
| Fraud Detection | 25% |
| Credit Risk Assessment | 22% |



| | |
|-----------------------|-----|
| Financial Forecasting | 23% |
|-----------------------|-----|

Source: Primary data compiled and analyzed by the researcher based on respondent opinions, as per survey research methods (Creswell, 2014).

Table 3 : Challenges in AI in finance

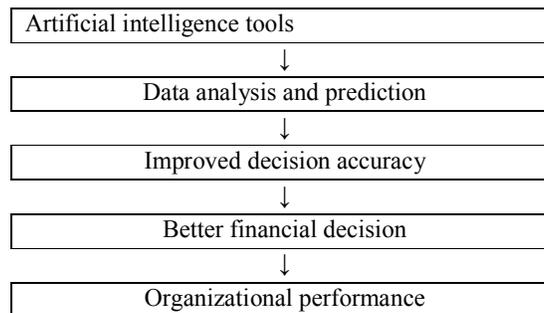
| Challenges | Percentage % |
|--------------------------|--------------|
| Data Privacy Issue | 32% |
| Lack of Human Judgement | 28% |
| High implementation cost | 25% |
| Technical Complexity | 15% |

Source: Primary data collected using structured questionnaire and analyzed using descriptive research techniques (Scribbr Research Methodology, 2023).

VII. CONCEPTUAL MODEL

AI in financial decision making

Table 4:



Data driven Analysis will give the ability to analyze financial data and produce predictions. When this happens, your degree of accuracy will increase hence making a much more informed financial decision. The end result is improved performance from financial institutions.

VIII. DISCUSSION

This study has demonstrated that AI plays a supporting role assisting with financial decision making. By providing faster analysis of the data and requiring less manual labour, it has the ability to enhance all aspects related to financial decision making. However, the respondents did indicate they do not believe AI can fully replace human judgement, specifically in instances where extremely sensitive decisions around finances are being made.

IX. CONCLUSION

Artificial Intelligence has become a valuable support system for Financial Decision Making. It has and will continue to enhance speed, accuracy, and efficiency in the analysis of financial data. Artificial Intelligence must be used appropriately and supervised by people. To produce the best results, Financial Institutions must create a balance between AI and Human Expertise.

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