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Original Research Article

ROLE OF ARTIFICIAL INTELLIGENCE ON DECISION- MAKING SPEED AND ACCURACY AMONG FINANCE PROFESSIONALS

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Abstract:

Artificial Intelligence (AI) is a branch of computer science. Here, machines are designed in such a way that they can perform tasks which normally require human intelligence such as problem solving, analyzing, decision making etc. Finance is the lifeblood of business. Decisions taken by finance professionals have a significant impact on future prospects of business. AI helps in analyzing huge volume of financial data in just few minutes. Due to advent of AI, the traditional decision-making process has been replaced by AI tools (Machine Learning, Natural Language Processing and Predictive Analysis). This study tries to analyze the impact of AI on enhancing the speed and accuracy of decision making. It tries to find how much finance professionals are dependent on AI for decision making. The study finds that AI tools have helped to reduce human bias and errors, but they can never replace human beings. Just that the roles of finance professionals will evolve from doing manual or routine tasks to being strategic advisors, AI ethic officers, AI product managers, AI auditors, Risk analysts, etc.

Keywords: *Artificial Intelligence, Machine Learning, Natural Language Processing, Predictive Analysis, Financial Decision – making*

Introduction:

Artificial Intelligence (AI) are computational systems that enable machines to process huge volumes of data in few minutes and do tasks such as learning, reasoning, problem solving, etc which usually require human intelligence. AI is widely used in finance, pharmacy, logistics, and customer services.

Today, the financial sector is undergoing a significant shift by technological advancements, particularly in AI. AI applications such as Machine Learning (ML), Natural Language Processing (NLP) and Predictive Analysis (PA) have transformed how professionals interpret and act upon financial data. Traditional decision making often suffers from cognitive biases, human fatigue, and data overload phenomenon. Also, the volume of global financial data exceeds human processing capacity. Thus, AI applications assists to solve these problems faced in traditional decision making. This study aims to analyse the role played by AI in enhancing decision making among finance professionals such as Chartered accountants, Tax consultants, Auditors, Risk Analysts, Accountants, etc.

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Objectives of Study:

1. To understand the extent of usage of AI amongst finance professionals.
2. To evaluate the impact of AI based tools on the speed of decision making.
3. To analyze the role of AI in improving accuracy in decision making.
4. To identify the challenges faced by the finance professionals while using AI.

Hypotheses:

1. H_O: AI tools have no impact on the speed of decision making among finance professionals
   H_1: AI tools have improved the speed of decision making among finance professionals.
2. H_O: AI tools do not lead to improvement in forecasting accuracy.
   H_1: AI tools have significantly improved accuracy in forecasting.

Scope and Limitations of Study:

This study is undertaken only to find out AI adoption in the finance industry. This study is undertaken in Mumbai which is the financial capital of India. Sample size were 52 finance professionals. This study helps in contributing to the growing body of empirical research on AI in finance sector.

Despite its contributions, the study has certain limitations as explained below:

- The sample size is limited to 52 respondents which may restrict the generalizability of findings to entire finance sector in India.
- This study was conducted in Mumbai city and there maybe variations in results in other cities of India.
- This study focuses only on selected aspects of AI in finance and not focuses on all applications of AI in finance sector.

Research Methodology:

This study is descriptive- exploratory in nature. The researcher aims to collect data through primary and secondary sources.

Primary Data:

The primary data is collected through structured set of questions asked from finance professionals across the banking, investment, and corporate finance sectors. The data was collected from 52 respondents in Mumbai City through Google forms. The sampling technique used to conduct research was Stratified Random sampling technique.

Secondary Data:

The secondary data was derived from published research papers, financial reports, AI industry analysis, and professional surveys.

Review of Literature :

Reserve Bank of India Economic Survey 2025-26 published in January 2026 has revealed that AI adoption in India is still in nascent stages with only 21% of surveyed banks and financial institutions are actively developing or implementing AI. This is because there is still lack of skilled workforce who know how to use AI.

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According to Ernst & Young report in March 2025 titled "How much productivity can Gen AI unlock in India" AIdea of India:2025" reveals that

- 74% of firms have started Generative AI proof of concepts.
- 42% of financial organizations are actively allocating budgets for AI implementation.
- 46% productivity gains are projected for banking operations by 2030 due to Generative AI integration.

Thus, we see that AI will be used extensively in the long run. So, it is important to have empirical evidence from finance professionals as to how their decision-making speed and accuracy has improved due to AI implementation.

Data Analysis and Interpretation:

Research was conducted using Google forms from 52 finance professionals. Out of which, 7 respondents were Manager, 10 respondents were Executives, 12 were Risk analyst, while remaining 23 respondents were auditors or accountants.

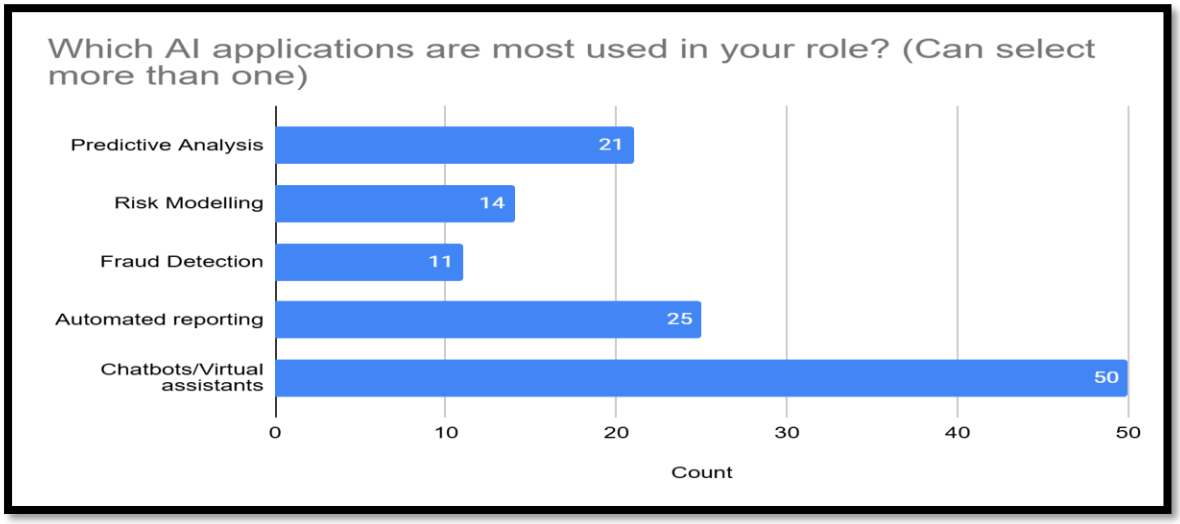

Figure 1

Out of 52 respondents, 96% of respondents use Chatbots/ Virtual assistants such as ChatGPT making it the most widely used applications. 48.1% of respondents use AI tools such as Tally Prime, Zoho Books, Vyapar for automated reporting indicating AI tools used predominantly for repetitive and routine tasks. This is followed by 40.4% of respondents using AI tools for predictive analysis reflecting moderate usage of AI tools for forecasting and decision making. 26.9% of respondents use AI Tools for risk modelling and 21.2% of respondents use AI tools for Fraud detection. This indicates that AI is extensively adopted for communication and automation and repetitive work but used cautiously for risk analysis and fraud detection.

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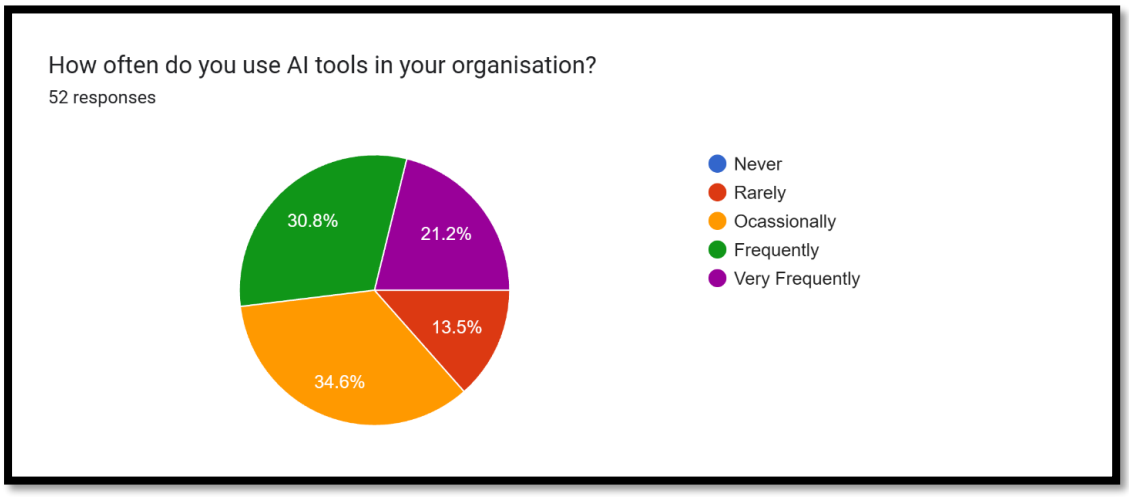

Figure 2

Out of 52 respondents, 11 (21.2%) respondents use AI tools very frequently and 16 (30.8%) of respondents use it frequently. While 18(34.6%) respondents use AI tools occasionally and 7(13.5%) respondents use AI tools. It is to be noted that not even one respondent reported that they never use AI tools. So, all respondents are using AI tools to some extent.

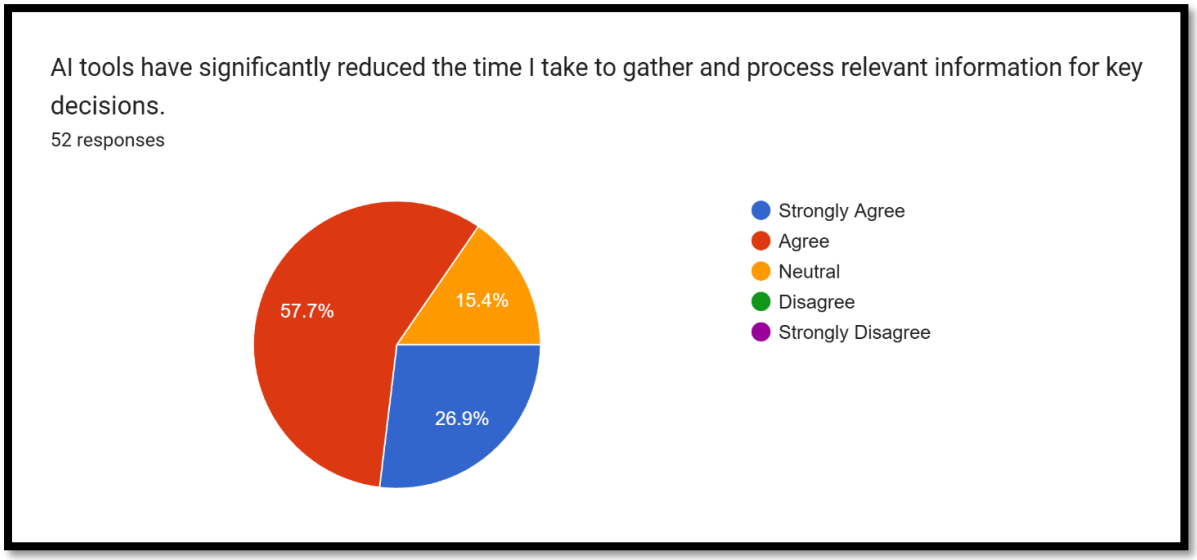

Figure 3

Out of 52 respondents, 30(57.7%) respondents agreed, 14(26.9%) strongly agreed and 8 (15.4%) were neutral when asked whether AI tools have reduced their time in gathering and processing information for key decisions. Notably, none of the respondents disagreed or strongly disagreed. This indicates the overall perception that AI tools do help in saving time and improve decision making efficiency.

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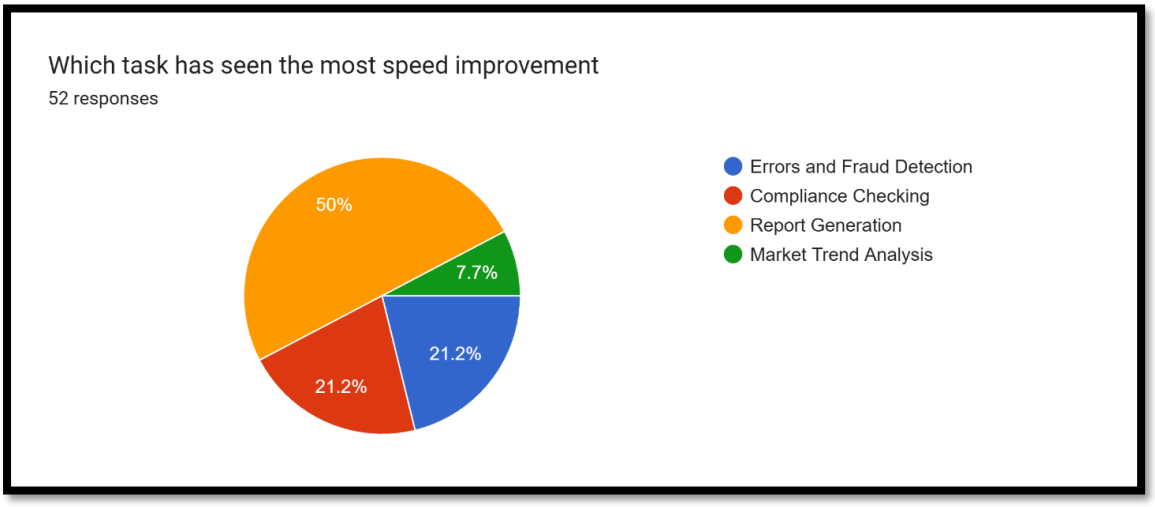

Figure 4

Around 26 professionals believe that generation of financial statements and other financial reports can be processed much faster using AI tools. 11 professionals believe that AI tools such as Clear, Winman, CA GPT and Taxmann AI have helped in compliance with Indian Taxation system. 11 professionals say that speed of errors and fraud detection has improved the most using AI Tools and only 4 professionals observed significant improvement in market trend analysis.

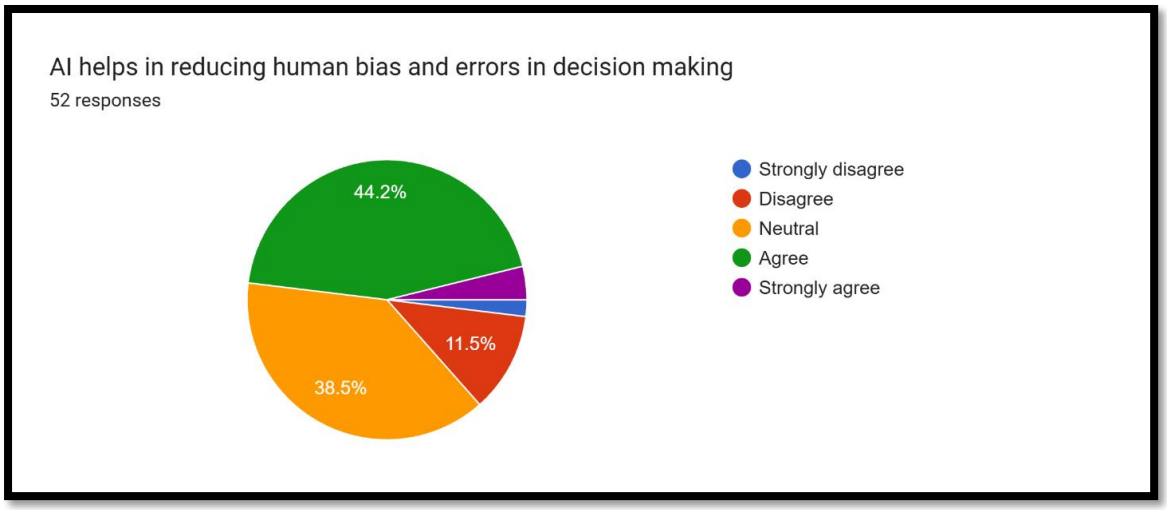

Figure 5

Out of 52 respondents, 23(44.2%) agreed and 2(3.8%) strongly agreed that AI helps in reducing human bias and errors in decision making. However, 20(38.5%) respondents maintained a neutral opinion. This may be due to limited practical experience or due to concerns regarding reliability of AI tools. In contrast, 1(1.9%) strongly disagreed and 6(11.5%) disagreed with the statement.

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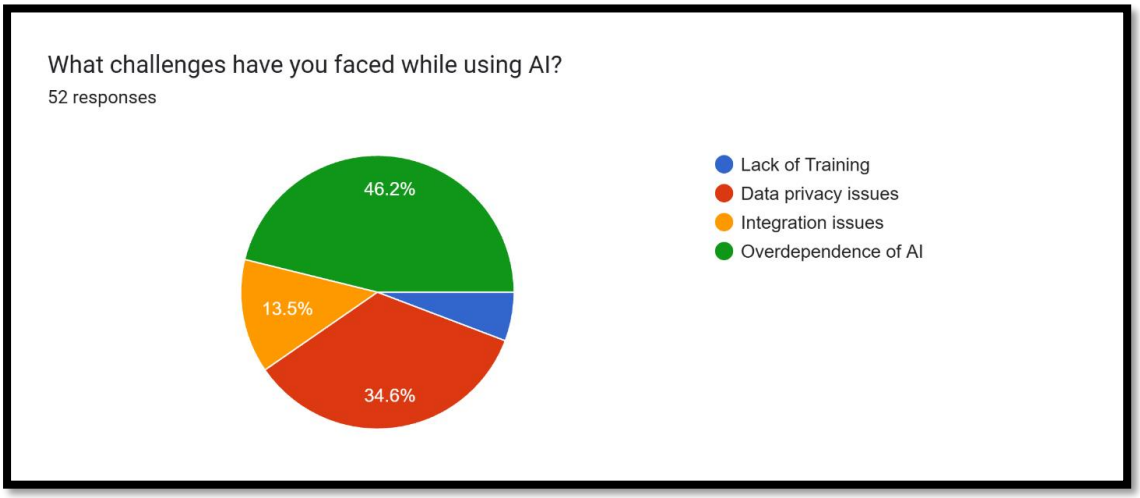

Figure 6

Challenges faced while using AI:

Out of 52 respondents, 24 identified that overdependence of AI as the major challenge whereas 18 reported data privacy and security issues as the major challenge as there are still concerns regarding confidentiality about sensitive financial and personal data. 7 respondents faced integration issues suggesting difficulties in using AI tools with existing systems. Only 3 respondents stated lack of training as a major challenge indicating that majority are confident in using AI tools.

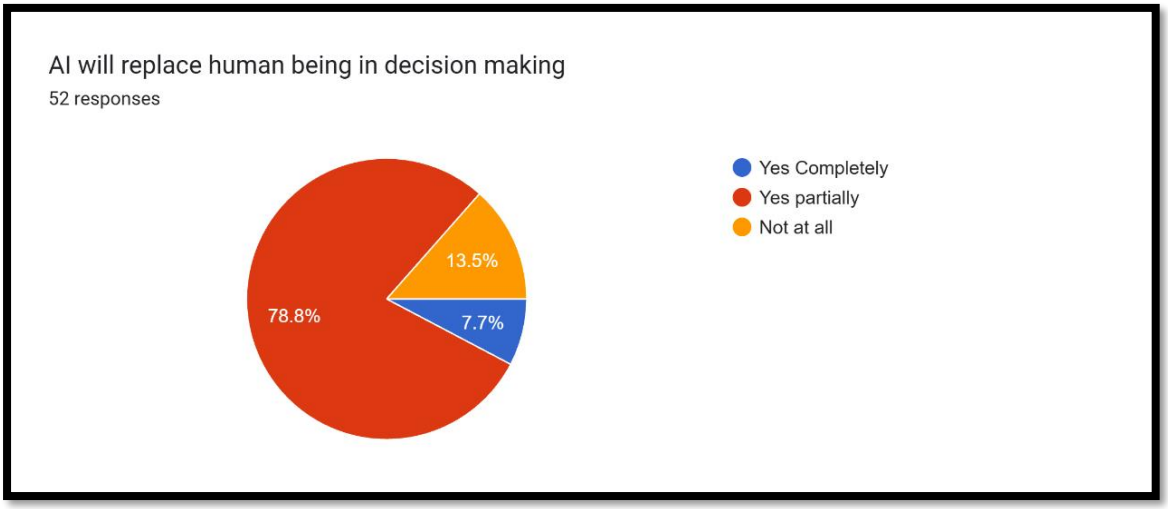

Figure 7

Most respondents believe that AI cannot completely replace human beings in decision making. Partially it can help humans in making decisions. So, it is complementary and not a substitute for human judgement.

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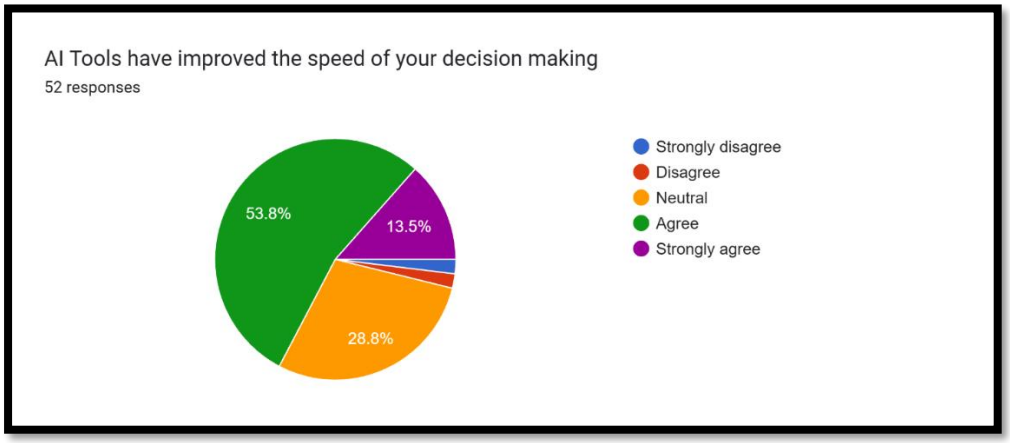

Figure 8

Most respondents agreed that AI tools have improved the speed of decision making. In fact, 7 respondents strongly agreed on improvement in decision making speed.

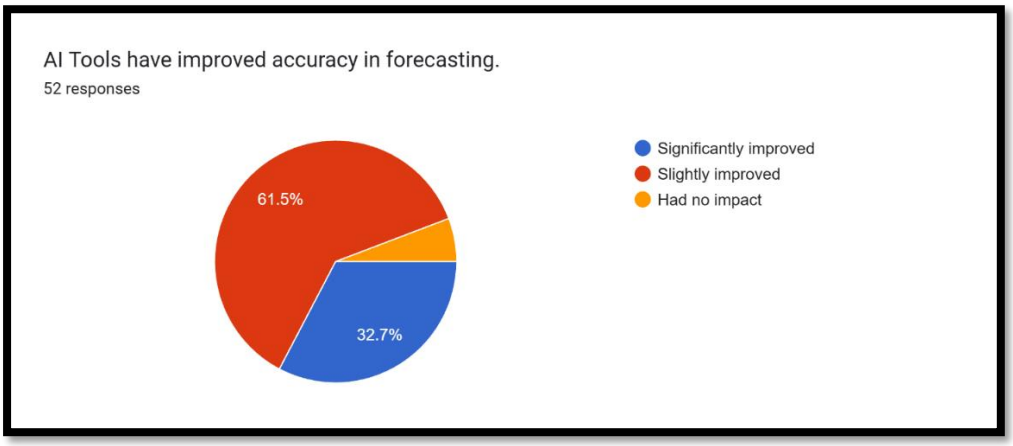

Figure 9

Around 32 respondents believe AI tools have slightly improved whereas 17 believe that they have significantly improved accuracy in forecasting.

Hypothesis Testing: One – Sample Wilcoxon Signed-Rank test was used to assess the hypothesis. Likert style scale was used to measure responses.

AI impact Variable	Scale Range	Test Value	Median	Wilcoxon W	p-value	Null Hypothesis
AI tools have improved speed of decision making	1-5	4 (Agree)	3(Neutral)	654.5	<.001	Rejected
AI tools have improved accuracy in forecasting	1-3	2(slightly improved)	1(no impact)	1225.0	<.001	Rejected

Table A

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Respondents overwhelmingly agreed more than the neutral midpoint regarding the impact of AI tools on decision-making speed. The median response was 4 (Agree), which was much greater than the neutral value of 3, $W = 654.5$, $p < .001$. Accordingly, the null hypothesis that AI tools do not improve decision-making speed was rejected.

Similarly, respondents perceived AI tools as having a positive effect on forecasting accuracy. The median response of 2 (Slightly improved) was significantly higher than the neutral value of 1 (Had no impact), $W = 1225.0$, $p < .001$. Thus, the null hypothesis that AI tools have no impact on forecasting accuracy was rejected.

Overall, the findings indicate that AI tools were perceived to significantly enhance both the decision-making speed and the accuracy of forecasting, with a stronger perceived effect observed for decision-making speed.

Conclusions :

Thus, the study concludes that AI has substantial impact on improving both speed and accuracy of financial decision making. While automation has helped in streamlining data analysis, AI applications has helped in judgments precisions. However, there are some hurdles such as skill gaps, data protection and system compatibility which must be addressed. India needs to have strong cyber security measures to protect data. Software can be developed to address integration issues. Skill gaps can be overcome by conducting continuous training and awareness programs on how to make ethical and effective use of AI.

Scope for Further Research:

This research was conducted to analyse the overall impact of AI on decision making speed and accuracy among finance professionals in Mumbai city. Further research can be conducted on impact of AI in banking, healthcare, investment, manufacturing, and logistics sector in India.

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