



# Impact of Artificial Intelligence (AI) and Technology on Investment and Marketing

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<https://doi.org/10.55041/ijst.v2i4.471>

**Cite this Article:** Singh, A. & Singh, A. (2026). Impact of Artificial Intelligence (AI) and Technology on Investment and Marketing. International Journal of Science, Strategic Management and Technology, 02(04). <https://doi.org/10.55041/ijst.v2i4.471>

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## ABSTRACT

In this article, the researcher explains how the existing digital environment has had an impact on how investment and marketing processes are carried out through the use of Artificial Intelligence (AI) and the latest technology. With technologies, such as machine learning, big data analytics, and automation, rapidly developing, AI has become a powerful tool that can influence the financial decision-making process and marketing strategy. The application of AI-based systems has interfered with the traditional investment processes by providing information-supportive insights, predictive analysis, and automatic trading, minimizing human bias, and maximizing performance. The research is aimed at various demographic groups in terms of investor and consumer behaviour, awareness, perceived benefits and concerns related to the utilization of AI. Primary data was gathered among 50 respondents and indicates that awareness of AI-based application in investment, such as robo-advisors and automated trading systems, and personalized marketing methods used by businesses, is growing. These results indicate that AI and technology can not just facilitate the accuracy and efficiency of investments, but also considerably increase the customer engagement owing to the easy and customized marketing techniques. However, such concerns as the privacy of data, the addiction to technology, mistrust toward automated systems remain. All in all, the results indicate that AI and technology may be called the new and the transformative technologies that will determine the future of investment and marketing.

**Keywords:** AI, Investment Decision-Making, Marketing Strategy, Machine Learning, Robo-Advisors, Consumer Behaviour, Big Data Analytics, Algorithmic Trading.

## 1.INTRODUCTION

The digital era has altered the fields, especially investment and the marketing sphere, greatly, due to the influence of Artificial Intelligence (AI) and high-tech technologies. Use of AI in businesses and financial system has resulted in increased speed in decision making, increased accuracy and satisfaction by customers. Investment AI applications involve big volumes of financial information, predict market trends, and automatically trade markets with algorithms. Some of the technologies that do allow investors to make informed choices are machine learning, big data analytics, and robo-advisors that could be made with fewer risks. Similarly, within the marketing industry, AI will assist a company to

understand consumer behaviour, personalisation, and optimisation of campaigns. Data analytics and online platforms allow reaching targeted audiences, increasing the conversion rate and customer satisfaction. This paper will discuss the role and influence of AI and technology in investment decisions and marketing strategies, its benefits, shortcomings and future of the industry. The study is founded on the primary survey information of 50 respondents of different demographic characteristics and the critical review of the existing academic literature.

## 2. RESEARCH OBJECTIVES

The research aims are:

Purpose:

To explore the potential of Artificial Intelligence (AI) and technology to improve the process of making investment decisions by investors.

- To explore awareness and perception of the users regarding AI-based tools in investment and marketing.

To test the effectiveness of automation and data analytics and machine learning on investment performance and marketing performance.

[human]>The successful implementation of AI technologies can be affected by the behaviour of investors and consumers, which should be evaluated.

To understand the mutual dependency of AI-driven practices and long-term financial growth and customer engagement.

## 3. LITERATURE REVIEW

### 3.1 AI in Investment Decision-Making.

The efficiency of AI-based financial systems was reviewed by Lee and Shin (2020), who found that AI can be used to assist investors to process large volumes of financial information with greater accuracy and in a shorter time. The study revealed that artificial intelligence applications such as machine learning algorithms and predictive analytics can assist investors to identify the market trends and make efficient investment decisions. The technologies reduce the involvement of human judgment and the influence of emotions, making investments more effective in general.

The research also points out that AI stimulates responsible investment behaviour. Systematic and regular investment is achieved through the use of robo-advisors and other automated investment platforms in the removal of human intervention to enable investors to amass wealth without taking risks as a result of market volatility.

### 3.2 Marketing and Consumer Behaviour AI.

Several researches have emphasized the augmented applicability of Artificial Intelligence in modern day marketing strategies. According to Kumar et al. (2021), businesses can know about the customer behaviour, through data analytics with the assistance of AI and offer them personal marketing experience. The AI-based recommendation systems can considerably influence consumer purchasing habits as it offers a recommendation on whether to buy the product, basing on the preferences and the history of reading.

Furthermore, AI helps marketers to categorize customers into segments more effectively and be more accurate when targeting specific customers. This leads to heightened customer interaction levels, improved conversion rates and customer relations since relevant and timely customer content is delivered.

### 3.3 The impacts of Big Data and Analytics. Big data analytics usage has been a major factor in investment and marketing.

As Chen et al. (2019) have emphasized, big data and AI technologies may allow companies to process and analyze large volumes of structured and unstructured data, which will improve their predictive capabilities and allow them to make improved strategic decisions. In the front of investment, big data assists in making predictions about the trends of the market and evaluating financial risks; in the marketing front, it assists businesses to monitor the trends of consumer behaviour, and optimise the marketing campaigns.

### 3.4: Financial Markets and Algorithmic Trading.

According to Smith (2020), the algorithmic trading systems are high-speed and high-frequency, making them more efficient and liquid in the market. They are automated trading systems based on the pre-defined rules and mathematical models to make decisions related to trading without human intervention and reduce emotional biases and enhance consistency in the investment policies. However, the paper also suggests the problems of market volatility and technical risk of completely automated systems.

### 3.5 Issues and risks of AI implementation.

Davis (2022) writes that the main concerns that go hand in hand with AI systems are data privacy and data security. The increasing use of personal information in AI-driven applications is an ethical issue and a risk of abusing data. Other factors that can impact user trust are excessive dependence on technology and the lack of transparency surrounding AI algorithms. The study suggests that responsible AI use must be controlled and there must be ethical frameworks that will guide responsible AI use.

### 3.6 Future perspectives of AI in Investment and Marketing.

Studies show that over and above the current technological advancements, automation, personalization and efficiency would also be enhanced. As the AI is integrated and the future of technologies such as blockchain and cloud computing is introduced, AI will become the new frontier of innovation and growth, and will become a fundamental source of change in both directions (Kaplan and Haenlein, 2019; Brynjolfsson and McAfee, 2017).

## 4. RESEARCH HYPOTHESES

Hypothesis	Statement
H <sub>1</sub>	<b>AI and technology features positively influence investment performance and decision-making.</b>
H <sub>2</sub>	<b>User behaviour positively mediates the relationship between AI adoption and outcomes in investment and marketing.</b>
H <sub>3</sub>	<b>Technological and economic factors significantly affect the effectiveness of AI in investment and marketing.</b>
H <sub>4</sub>	<b>User discipline and trust in AI systems have a direct positive impact on investment success and marketing outcomes.</b>

## 5. RESEARCH METHODOLOGY

### 5.1 Research Approach

The current research has adopted the mixed research method which involves the use of quantitative and qualitative techniques. The quantitative part gathers numerical data using structured questionnaires, allowing the use of statistical analysis of the investment patterns, the level of AI adoption, trust in technology, and consumer reaction to the marketing strategy based on AI.

### 5.2 Research Design

The research design employed is descriptive and analytical. The descriptive component identifies and describes the trends of user demographic data, awareness levels, the usage of AI tools, patterns of investment and response to AI-based marketing strategies. The analytical section examines the correlations of variables such as adoption of AI, trust of the users, efficiency of investments, and effectiveness of marketing.

### 5.3 Data Collection

The structured questionnaire (see Appendix A) was used to gain primary data that would assist in gaining first hand information about the respondents. The questionnaire is going to comprise both closed ended and multiple choice questions, so as to be able to gain both quantitative and qualitative answers. The respondents numbered 50 people, representatives of the following age groups: 1825, 2635, 3650, and 50 and above.

### 5.4 Variables of the Study

Variable Type	Description
Independent Variable	Artificial Intelligence & Technology (Automation, Machine Learning, Data Analytics, AI-based Platforms)
Dependent Variable	Investment Performance & Efficiency; Marketing Effectiveness & Customer Engagement
Mediating Variable	User Behaviour (Investor Decision-Making and Consumer Preferences)
Moderating Variable	Economic Conditions; Technological Environment; Level of Digital Literacy

### 5.5 Tools and Techniques

The data were tabulated and were analyzed with the help of Microsoft Excel. The methods used in the analysis are; percentage analysis to appreciate the distribution of the answers, comparative analysis of the demographics and graphical analysis of the results in pie charts and bar graphs.

## 6. DATA ANALYSIS AND INTERPRETATION

### 6.1 Age-wise Distribution of Respondents

Age Group	No. of Respondents	Percentage
18–25	28	56%
26–35	12	24%
36–50	7	14%
50+	3	6%
<b>Total</b>	<b>50</b>	<b>100%</b>

Figure 1: Age-wise Distribution of Respondents

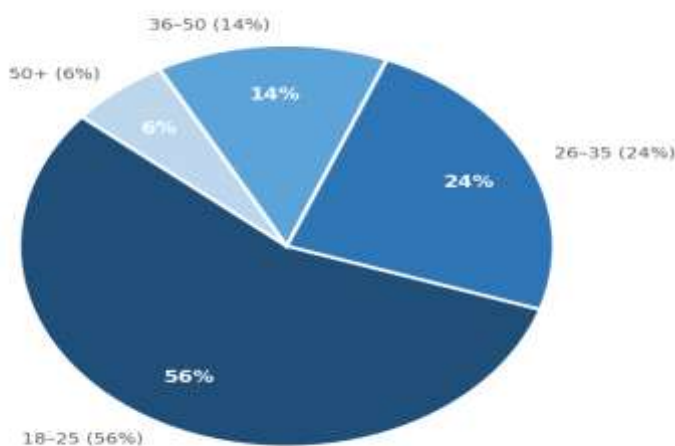


Figure 1: Age-wise Distribution of Respondents

## 6.2 Awareness of AI

Response	No. of Respondents	Percentage
Yes	45	90%
No	5	10%
<b>Total</b>	<b>50</b>	<b>100%</b>

**Figure 2: Awareness of AI Among Respondents**

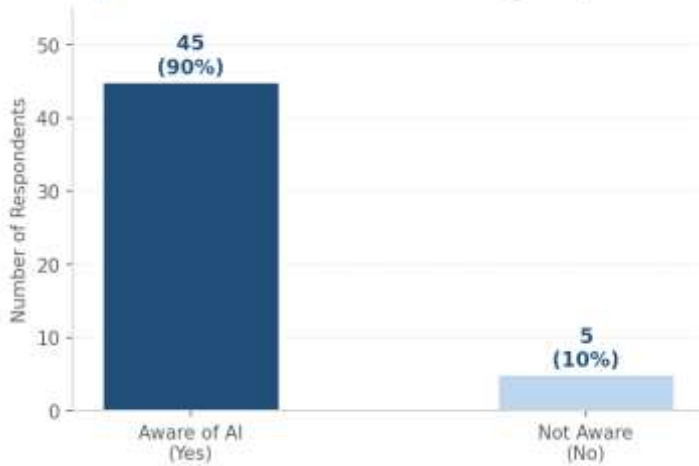


Figure 2: Awareness of AI Among Respondents

## 6.3 Use of Investment Applications

Response	No. of Respondents	Percentage
Yes	40	80%
No	10	20%
<b>Total</b>	<b>50</b>	<b>100%</b>

**Figure 3: Use of Investment Applications**

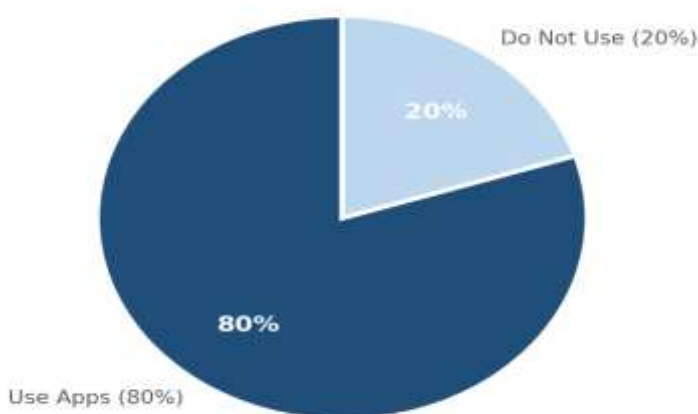


Figure 3: Use of Investment Applications

### 6.4 Trust in AI Systems

Level of Trust	No. of Respondents	Percentage
High	12	24%
Somewhat	20	40%
Neutral	10	20%
Low	8	16%
<b>Total</b>	<b>50</b>	<b>100%</b>

Interpretation: Most respondents demonstrate moderate trust in AI systems, with 40% reporting 'Somewhat' trust and 24% showing high trust. This indicates that while AI is accepted as a tool, complete reliance on automated systems is still developing. Concerns around transparency and data privacy may explain the residual skepticism.

Figure 4: Level of Trust in AI Systems

### 6.5 AI Influence on Marketing

Response	No. of Respondents	Percentage
Agree	30	60%
Neutral	12	24%
Disagree	8	16%
<b>Total</b>	<b>50</b>	<b>100%</b>

Interpretation: It is noted that 90 percent of the respondents know about AI, which is a high percentage of technological knowledge. This indicates that AI has gained much mainstream acceptance among the surveyed population, especially among the younger ones.

Figure 5: AI Influence on Marketing Decisions

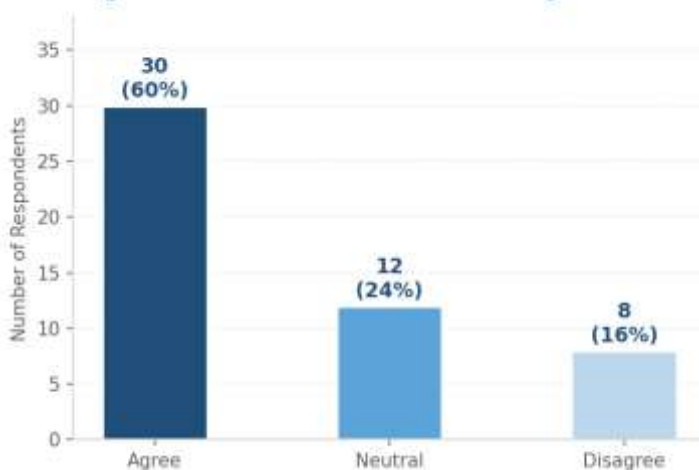


Figure 5: AI Influence on Marketing Decisions



## 7. Study findings.

According to the analysis of the primary data, 50 respondents have been analyzed, and the following main conclusions could be made:

Most of the respondents (56 percent) fall in the range of 18-25 years which means that younger users are more likely to be more digital and use AI-oriented platforms.

The respondents are very familiar with the concept of Artificial Intelligence and its use, and 90% of respondents have heard of it.

There is a high uptake of the digital financial tools as 80% of surveyed individuals are using investment platforms, which include mobile applications.

As it is known, AI simplifies the investment processes by making it more data-driven, fast, and effortless.

There is a significant impact on consumer behaviour and buying behaviour through AI-driven marketing approaches.

The trust in AI systems is moderate (64% of the participants say that they have either high or somewhat high trust) but not yet full autonomy.

Privacy concerns, loss of jobs and failure to comprehend algorithms are the primary dangers to the wider application of AI.

It appears that AI is more effective in personalizing marketing compared to making entirely automated decisions to make investment decisions.

## 8. SUGGESTIONS AND RECOMMENDATIONS

To promote the broader and more informed utilization of AI tools, banks have to take a more active role in educating and enlightening about AI tools.

Companies should improve their transparency through explainable AI (XAI) systems in order to increase user trust in AI systems.

Data protection and cybersecurity should be high and communicated to quell privacy concerns.

The application of AI is not supposed to be advanced to entirely interfere with the decision-making process of humans but to assist the human aspect in making crucial financial choices.

Training and digital literacy training should be implemented in academia and business to close the generation adoption gap.

Business and regulators should collaborate to formulate ethical principles of responsible AI usage in investment and marketing.

## 9. CONCLUSION

The present paper explains how Artificial Intelligence (AI) and technology can transform the manner in which investments and marketing are undertaken. The findings indicate that AI has increased the efficiency, accuracy and speed of decision making in investment by compelling data informed insights and reducing human biases.

In the marketing sector, AI has enhanced customer engagement through personalised advertisements, accurate campaigns and gaining insight into consumer behaviour. The use of AI to improve the marketing performance of organisations and reach the target audience is also becoming a trend.

The survey further reveals that despite the high awareness and usage of AI by the respondents, trusting AI systems is not yet established. The primary concerns that ought to be mitigated by regulation, education and open system design are issues of data privacy, security and over reliance on technology.

In total, AI and technology have a beneficial impact on investment and marketing as they have demonstrated their effectiveness in making better decisions and increasing performance. With the evolution of AI and the relevant regulatory frameworks, it is bound to gain importance in the future of the financial markets and business strategies.



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