IMPACT OF AI TOOLS ON INVESTMENT DECISIONS OF AN INDIVIDUALS

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Abstract

The integration of Artificial Intelligence (AI) tools into investment decision-making processes has revolutionized the financial industry. This paper explores the transformative effects of AI technologies, such as algorithmic trading, robo-advisors, predictive analytics, and sentiment analysis, on investment strategies and behaviors. Through the analysis of primary and secondary data, my findings indicate that AI tools account for a substantial portion of the variation in investment behavior, highlighting their potential to enhance data analysis, risk management, and personalized investment recommendations. The study underscores the need for financial institutions, regulators, and investors to understand and adapt to the evolving landscape shaped by AI technologies. The study also shows the need for spreading awareness about the available tools and their uses to the individual. The implications of this research extend to improving investment performance, optimizing portfolio management, and fostering innovation in financial services.

Keywords: Investment, Artificial intelligence, financial industry, data analysis, risk management.

INTRODUCTION

Term AI refers to Artificial Intelligence. An Artificial Intelligence means making the technology or computer capable of doing the task which previously can be done by humans only. There are many tools of AI which helps human being in various task such preparing excel sheet, ppt, analyzing data, drafting letters and so on which makes the work of the human being easy and quick. It also ensures the accuracy of the information provided.

As per our investment type we can use AI tools which will help us to do analysis of the data provided by corporates and improve our decisions (Allen) regarding investment in securities. They are namely algorithmic trading, robo-advisors, predictive analytics, and sentiment analysis, on investment strategies and behaviors. My article is to understand the effect of AI technology driven tools on the decisions of individuals for their investment.

LITERATURE REVIEW

Artificial intelligence algorithms are designed to make decisions, often using real-time data AI is not a futuristic vision, but rather something that is here today and being integrated with and deployed into a variety of sectors. This includes fields such as finance, national security, health care, criminal justice, transportation, and smart cities. There are numerous examples where AI already is making an impact on the world and augmenting human capabilities in significant ways. (Allen)

Investments in financial AI in the United States tripled between 2013 and 2014 to a total of $12.2 billion. According to observers in that sector, "Decisions about loans are now being made by software that can take into account a variety of finely parsed data about a borrower, rather than just a credit score and a background check." In addition, there are so-called robo-advisers that "create personalized investment portfolios, obviating the need for stockbrokers and financial advisers." These advances are designed to take the emotion out of investing and undertake decisions based on analytical considerations, and make these choices in a matter of minutes. (Allen)

Following are some of the AI tools available for investment decisions:

Portfolio management: AI can analyse market conditions and economic indicators to help investors make better decisions and optimize their portfolios.

Predictive analytics: AI can enable predictive modelling, which can help financial organizations anticipate market trends, potential risks and customer behaviour. (Matthew Finio)

Machine Learning: Machine learning is one of the subsets of AI technology which develops algorithm to allow computer to learn from and make prediction based on data. Algorithm trading develops code which assess market situation dynamically and saves time.

Robo-advisor: A robo-advisor (sometimes without the hyphen, as robo-advisor) is a digital platform that provides automated, algorithm-driven financial planning and investment services with little to no human supervision. A typical robo-advisor asks questions about your financial situation and future goals through an online survey. It then uses the data to offer advice and automatically invest for you.

Fraud detection and prevention: Deep learning can be used to analyse customers' buying behaviour and will and trigger an alert when unusual spending patterns are identified.

Trading: Investment firms use AI for algorithmic trading—trades made at high-speed based on real-time data and market trends. (Asere Gbenga Femi)

Financial industry witnessing a wave of innovation that empowers the investors with better tools to navigate the complexities of the market. (Khanna)

OBJECTIVES

The Primary objective of this paper is to study and analysis the awareness about AI tools and impact of this tools on the investment decision of the individual who do their investment by self-research without intervention of any portfolio managers, Brockers etc.

On the basis of above objectives following are the hypothesis

H1 - AI tools positively impact the investment decisions of individuals conducting self-guided research, reducing human error and enhancing efficiency.

H0 - The use of AI tools has no significant impact on the investment decisions of individuals conducting self-guided research, nor does it reduce human error or enhance efficiency.

H1 - Individuals are aware and proficient enough in utilizing AI tools which significantly affect their ability to harness the full potential of these technologies in decision-making processes.

H0 - Individuals demonstrate a lack of awareness and proficiency in utilizing AI tools effectively, which limits their ability to harness the full potential of these technologies in decision-making processes.

LIMITATIONS

As the data is collected through google form the sample is little lower.

RESEARCH METHODOLOGY

This study employs mixed approach of research. This research includes primary data collected through questionnaire which collects the information from individuals about their awareness and uses of AI driven tools for investment decisions. This research also analyses the qualitative information sources through secondary data. Secondary data includes research articles, books, blogs, websites etc.

The responses are as follows:
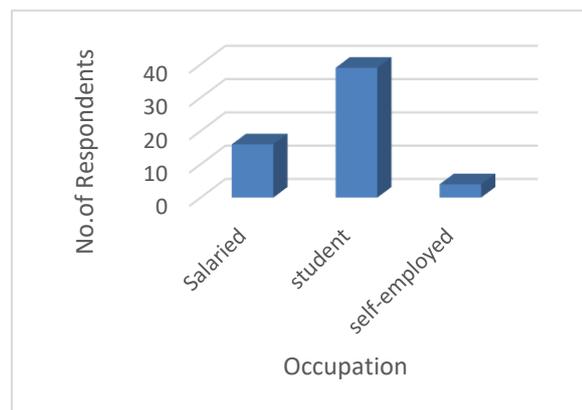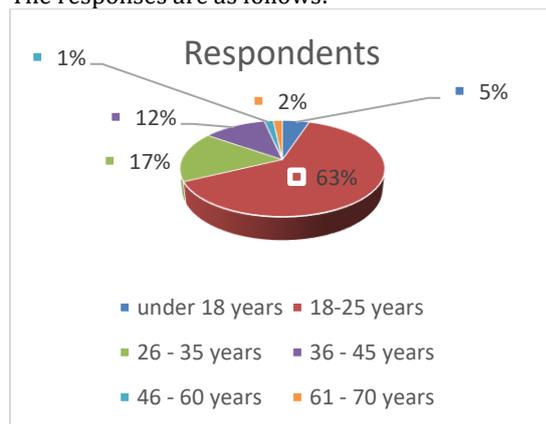
FINDINGS

I have conducted the survey for the purpose of research and the objective of this was to find the awareness about AI driven tools of investment decision and its impact on the investment decisions of self-directed investors. Total 59 responses were collected from the analysis of the responses I found that individuals including youngsters of the age above 18 are interested in making investment the main goal of investors is wealth maximization. The popular way of investment are Gold, Stocks and Mutual fund most of the investors invest in Mutual Fund.
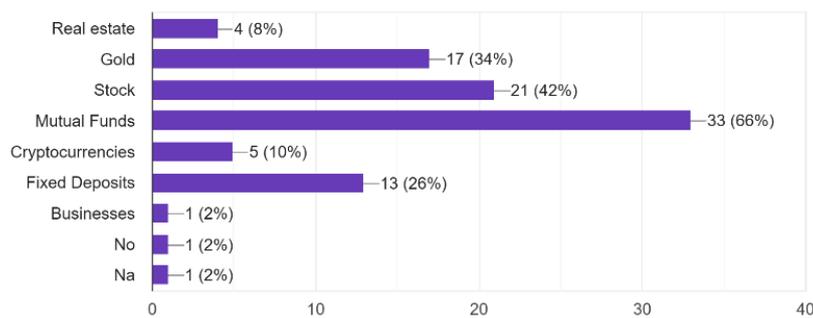
What is your primary goal of Investment ?
59 responses
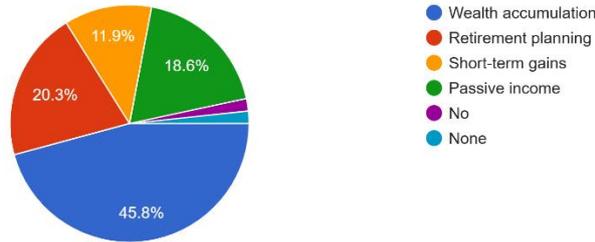
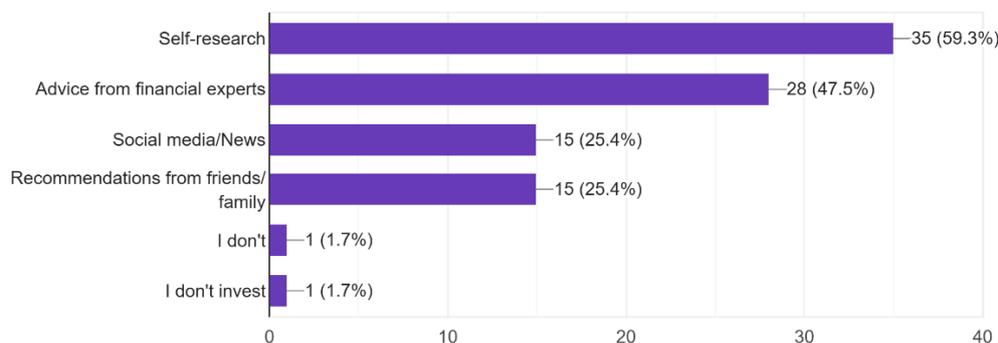If yes, what type of investments do you hold? (Select all that apply)
50 responses

For the investment investor do self-research for taking proper decision so that their wealth will maximize by getting higher returns. Fo

How do you make investment decisions?
59 responses

This research has a main motive is to find whether the investors are aware of AI driven tools for taking investment decisions and for this my Hypothesis was

H1 - Individuals are aware and proficient enough in utilizing AI tools which significantly affect their ability to harness the full potential of these technologies in decision-making processes.

H0 - Individuals demonstrate a lack of awareness and proficiency in utilizing AI tools effectively, which limits their ability to harness the full potential of these technologies in decision-making processes.

To test the above hypothesis Z test was done with the total responses of 59 distributed as 36 respondent were well aware of AI tools and 23 were not aware of the AI tools

Here are the results:

Z-score: 1.692

P-value: 0.045

Since the p-value (0.045) is less than the significance level (0.05), we **reject the null hypothesis (H0)**. This means there is sufficient evidence to support that individuals are well aware of AI Tools (H1).

https://www.gapbodhitaru.org/

The second hypothesis was

H1 - AI tools positively impact the investment decisions of individuals conducting self-guided research, reducing human error and enhancing efficiency.

H0 - The use of AI tools has no significant impact on the investment decisions of individuals conducting self-guided research, nor does it reduce human error or enhance efficiency.

And by employing z test got the result as follows

With a Z-value of 2.99, we compare it to the critical Z-value for a one-

tailed test at $\alpha = 0.05$, which is approximately 1.645. Since 2.99 > 1.645, we **reject the null hypothesis**. This means there is significant evidence to conclude that AI tools have improved investment decisions.

Effectiveness of AI driven tools on investment decisions
- Improved: 79.50%
- not affected: 20.50%
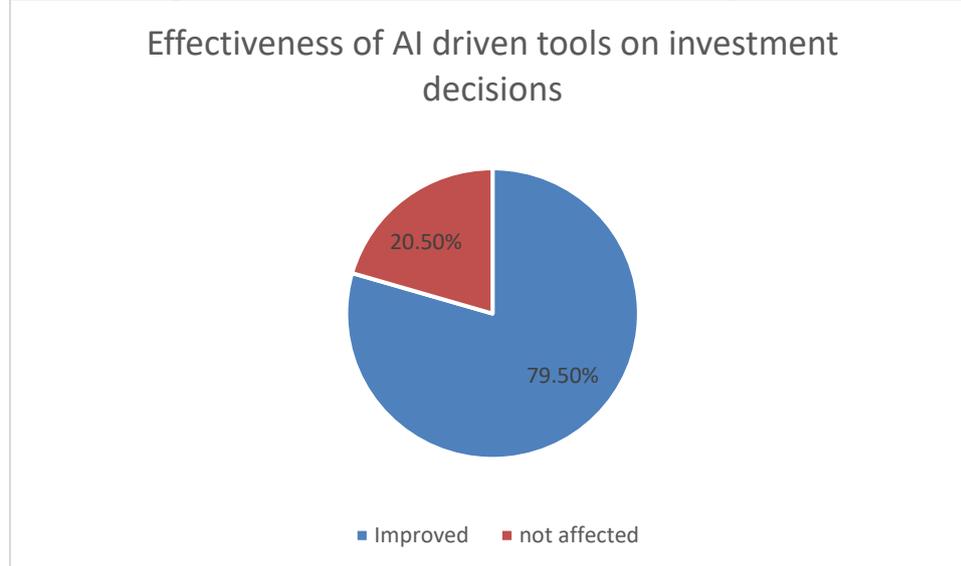
CONCLUSION

The exploration of the impact of AI tools for investment decision of individuals given a conclusion that in today's modern and technological era the youths are also updating them self with emerging technology called Artificial intelligence. Most of the investors are making them proficient enough to use technology for their needs also getting benefited from the technology. Some investors do not find AI technology as a secure place due to lack of transparency. Some investors are not aware of the AI tools which helps in analyzing the data and decision making.

RECOMMENDATIONS

Financial institution should adopt awareness programs for AI tools and their uses

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