



# A STUDY ON THE ROLE OF ARTIFICIAL INTELLIGENCE IN INVESTMENT MANAGEMENT

Mrs. K. Prashanthi, Assistant Professor, Department of MBA

Sridevi Women's Engineering College

P. Sri Lalitha, MBA<sup>2nd</sup> Year

Sridevi Women's Engineering College

## ABSTRACT

The modern times are seeing almost everyone heading towards investments to boost their finances. Artificial Intelligence has revolutionized the fields of data analysis. Chatbots and content generation has also entered Investment Industry. With the introduction of Artificial Intelligence in investment the task of investors to make right investment decisions has become a lot easier. AI driven Systems help in analyzing the data, optimizing the portfolios, and also provide stock market trends. The data for this study is collected through surveys, articles and journals. The findings of the study suggest that many people felt the necessity for investment, keeping in view the current scenario. Most felt that AI helps in making investment decisions and Investment apps are very helpful. This paper aims to highlight the role of AI in investment management and common man's perception on investment. Blending AI technologies in Investment management offers immense benefits which could restructure the financial industry.

**Key Words:** Artificial Intelligence (AI), Investment, Investment Management, Portfolio, Stock Market.

## INTRODUCTION

With the turbulent fluctuating financial circumstances faced by the world, the investors are more leaning towards long term investments. These transitional times are presenting investors with numerous investment options like bonds, mutual funds, saving schemes, stocks, gold etc. Many people have no idea about how to invest and where. The advanced technology i.e., Artificial Intelligence, provides valuable information about various stock options, previous years' investment performances etc., which will help the investors to identify potential investment opportunities.

With the arrival of several Artificial Intelligence investing apps venturing into lucrative investments has become easy, but Many people don't know about it. Mainly these apps are used by the company investors. The analysis of voluminous data, arriving at right decisions, deducing the trends have become easier with Artificial Intelligence investing apps. Hence Investment firms are employing the Artificial Intelligence tools to make their decisions on their potential portfolios and investments.

## LITERATURE REVIEW

1. Arvind Ashta, Heinz Herrmann (10 May 2021) Researched on "Artificial intelligence and fintech: An overview of opportunities and risks for banking, investments, and microfinance". This paper studied the integration of AI in Financial sector. The authors noted that the use of AI is more appealing to the Fintech firms because of reduced costs and differentiated data. The paper asserted the necessity to be aware of the risks involved in using AI as there may be a lack of human involvement in decision making.

2. Narendra Rao Tadapaneni (9 May 2019) A study on "Artificial Intelligence in Finance and Investment". The paper observed the spread of AI into varied human activities. The study acknowledged the role of AI as a significant tool in data analysis and financial services. The study recommended that use of AI will give good results when one uses it with focus and caution.

3. Elena Beccalli, Viktor Elliot & Francesco Virili (16 September 2020) A study on "Artificial Intelligence and Ethics in Portfolio Management". The paper aimed at the ethical dilemmas that arise from the use AI in financial portfolio management. The paper studied the performance of portfolio managers vice versa AI enhanced algorithms and recommended for better evaluation and incentives for the AI software developers.

4. Hazem Y. Abdelazim and Khaled Wahba (May 4, 2006) Research on "An artificial intelligence approach to portfolio selection and management". The paper studied about Markowitz efficient frontier and Modern portfolio theory. The paper acknowledged the success of the genetic algorithms technique (GAs) in solving complex optimization problems.

5. GuoRong Hu and Hui Liu, A study on "Development Strategy of Securities Investment Industry under the Background of Artificial Intelligence". The study aimed at highlighting the role of AI in the development strategy of securities investment industry. The author analysed the contribution of AI in reduction of service cost and the investment tools employed to overcome the difficulties faced by customers.

## OBJECTIVES

1. To Analyse the perception of public on different investment options.
2. To Assess the role of Artificial Intelligence in Investment management.
3. To Study the Opportunities of using Artificial Intelligence in investment.

## Types of Investments

1. **Stocks:** “Stocks” are shares or equities that represent a part of ownership in a company. A publicly traded company sells stocks or shares to the general public who become shareholders in the company and become partial owners.
2. **Bonds:** They are debt Securities issued by companies and governments to raise funds for their growth. Corporate bonds issued by companies do not give ownership rights.
3. **Mutual Funds:** It is a trust which pools money from various investors and invests in different securities such as bonds, stocks etc.
4. **Derivatives:** It is a financial instrument whose value is derived from an underlying-assets such as oil, gold, copper etc. There are four types of financial derivatives i.e., Forwards, Futures, Options, Swaps.
5. **Fixed Deposits:** It is a popular investment option where we can deposit a lumpsum of money for a fixed period of time which grows and offers interests at regular intervals. It is less risky and the money can be withdrawn after the completion of the maturity period only.

## AI Investing Apps

1. **Groww:** Groww app provides all the information about various mutual funds schemes and shows the expected return ratios one will get after the mutual funds period.
2. **Icicidirect markets:** It is a Share Market Mobile Trading App which allows traders to invest in Stocks, Futures & Options (F&O), Commodities and Currency. By using this app users can also invest in Initial Public Offerings (IPO).
3. **Upstox:** Upstox is a well-known discount broker offering its services at an economical price. It has a flat brokerage fee of Rs. 20 and zero brokerage fee for the equity delivery.
4. **Paytm money:** It has a scheme called National Pension Scheme (NPS). With the help of this scheme if one invests their money now, they can get a pension after retirement. It helps one save their tax. One can also invest in mutual funds and the stock markets through this app.
5. **Sharekhan:** This is a free mobile trading app which is designed for traders and investors. Through this app investors can invest in derivatives, mutual funds and equities.
6. **Kotak securities (Kotak neo):** The Mobile App is a user-friendly trader. It allows the trader to continue trading in domains like equities, currency derivatives, and derivatives and helps the trader get real updates from the market through live streaming.
7. **TradeCred:** TradeCred is an acronym for Trade Credit. It is a platform for deploying private capital into curated invoices.
8. **Piggy- Mutual Fund app:** Easiest platform to make mutual fund investments in India. One can make investments without paying any middlemen commissions and make more returns.

## **Role of Artificial Intelligence in Investment management.**

To build a perfect investment strategy a thorough analysis has to be made. With the help of data AI Systems can analyse and predict the stock market movement, risk assessment, financial report, price fluctuations and market trends. AI can handle huge amount of data, identifies trends which cannot be determined by humans, gives an added advantage to investment which also identifies possible frauds at initial stages. This data can help the investors to select potential investment portfolio as it provides best blend of investments which maximizes the return and minimizes the risk and helps in making better decisions whether to buy or sell his/her stocks. AI analyses the risks and comes up with an accurate solution about how to minimize or eliminate the risk and it provides an opportunity to compare the risk and returns etc. With various AI tools like chatbots, virtual assistants etc. helps the customers to answer their inquiries about different investment opportunities.

## **Opportunities of using Artificial Intelligence in investment.**

The new trend of AI is Generative Pre-Trained Transformer (GPT). It interprets the human language. In recent times ChatGPT has taken over various fields like educational sector, financial sector etc. ChatGPT provides valuable and insightful advice on investment choices. However, ChatGPT information must be used with caution. The voice recognition systems is a convenient method for security purposes. The investing firms can utilize this technology to set a voice automated password along with their PIN numbers. It provides more security to the investors to protect their information. Using the AI algorithms huge amount of financial data and market trends can be analysed to create better investment strategies. It gives guidance to the wealth managers in offering the optimized portfolios according to each customer's risk appetite, financial objectives and expected returns.

## **RESEARCH METHODOLOGY**

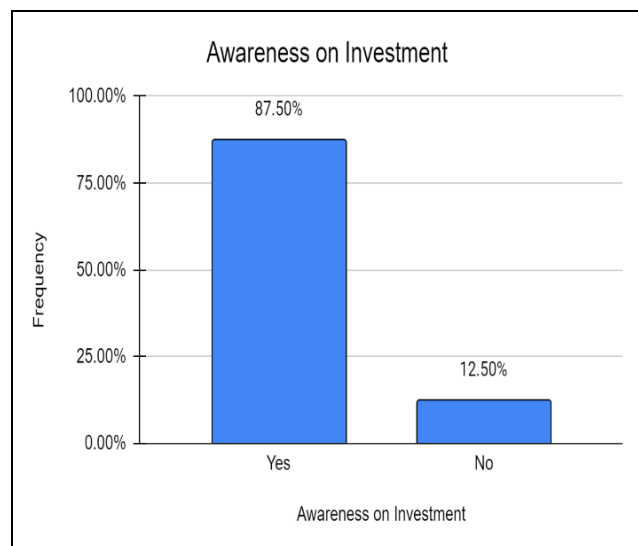
- \* Research Design: The research design used in this study was a “descriptive study”
- \* Research Approach: The study uses quantitative approach
- \* Sampling: Purposive Sampling was used in the study.
- \* Sample Size: 80
- \* Data Sources: Primary data and Secondary data sources were utilized for the study.
  - a) Primary Data: The data was collected through an online questionnaire circulated among the general public
  - b) Secondary Data: The data is collected from already published journals and articles.

## DATA ANALYSIS AND INTERPRETATION

### 1. Table Showing: Awareness on Investment

Awareness on Investment		
Options	Frequency	Percent
Yes	70	87.50%
No	10	12.50%
<b>Total</b>	<b>80</b>	<b>100</b>

### Graph Showing: Awareness on Investment

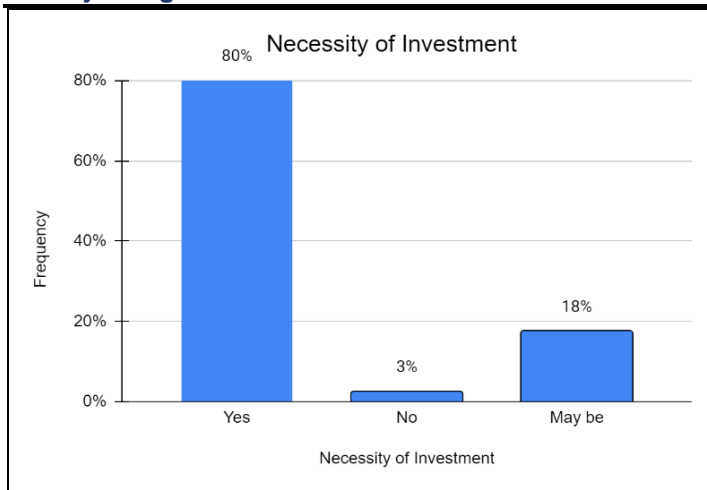


**Analysis:** Out of the total respondents i.e., 87.5% are aware of concept of investment. But only 12.5% do not have awareness.

### 2. Table Showing: Necessity of Investment

Necessity of Investment		
Options	Frequency	Percent
Yes	64	80%
No	2	2.50%
May be	14	17.50%
<b>Total</b>	<b>80</b>	<b>100</b>

### Graph Showing: Necessity of Investment

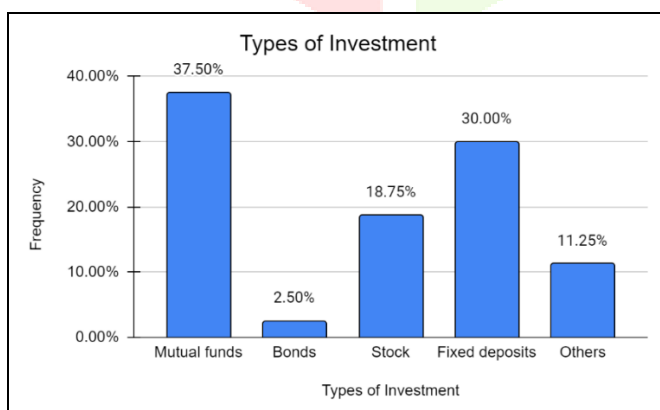


**Analysis:**Most of the respondents i.e.80% think that there is a necessity of investment. About 18% are not sure about it. And only 3% respondents feel that Investment is not necessary.

### 3. Table Showing: Types of Investment

Types of Investment		
Options	Frequency	Percent
Mutual funds	30	37.50%
Bonds	2	2.50%
Stock	15	18.75%
Fixed deposits	24	30%
Others	9	11.25%
<b>Total</b>	<b>80</b>	<b>100</b>

### Graph Showing:Types of Investment

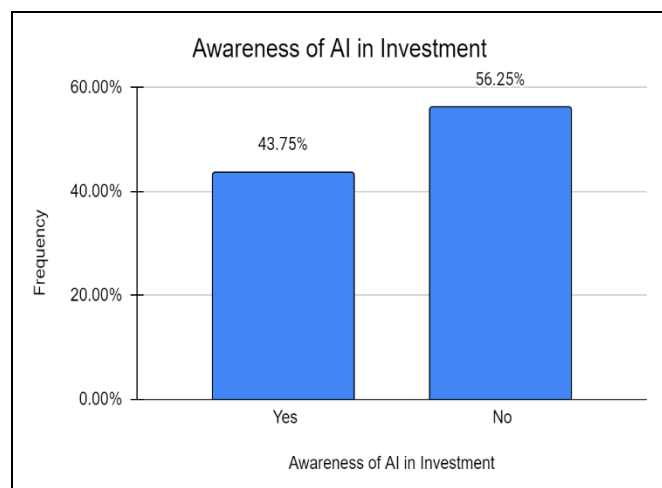


**Analysis:**The graph indicates that 37.5% are aware of Mutual Funds. Around 30% know about Fixed deposits, 18.75% are aware of stocks. Only 2.5%are aware of bonds.11.25%are aware of other investment types.

#### 4. Table Showing: Awareness of AI in Investment

Awareness of AI in Investment		
Options	Frequency	Percent
Yes	35	43.75%
No	45	56.25%
<b>Total</b>	<b>80</b>	<b>100</b>

#### Graph Showing: Awareness of AI in Investment

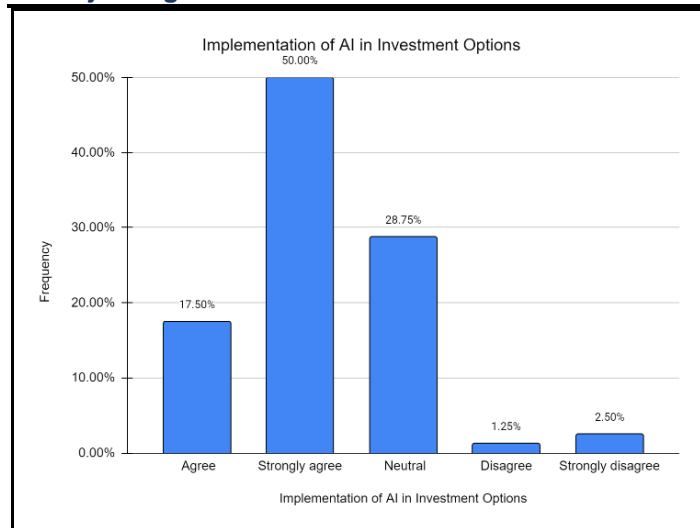


**Analysis:** More than half of the people i.e., 56.25% are not aware of use of AI in Investment. Only 43.7% of people are not aware it.

#### 5. Table Showing: Implementation of AI in Investment Options

Implementation of AI in Investment Options		
Options	Frequency	Percent
Agree	14	17.50%
Strongly agree	40	50%
Neutral	23	28.75%
Disagree	1	1.25%
Strongly disagree	2	2.50%
<b>Total</b>	<b>80</b>	<b>100</b>

#### Graph Showing: Implementation of AI in Investment Options

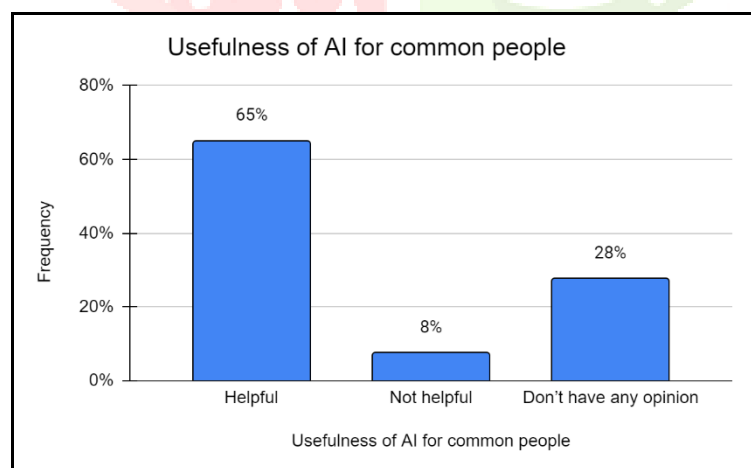


**Analysis:** From the survey conducted 50% of respondents strongly agree that AI helps in understanding investment options. Whereas 28.75% are neutral and 17.5% agree to it. Only 1.25% disagree and 2.5% strongly disagree to it.

**6. Table Showing: Usefulness of AI for common people**

Usefulness of AI for common people		
Options	Frequency	Percent
Helpful	52	65%
Not helpful	6	7.50%
Don't have any opinion	22	27.50%
<b>Total</b>	<b>80</b>	<b>100</b>

**Graph Showing: Usefulness of AI for common people**



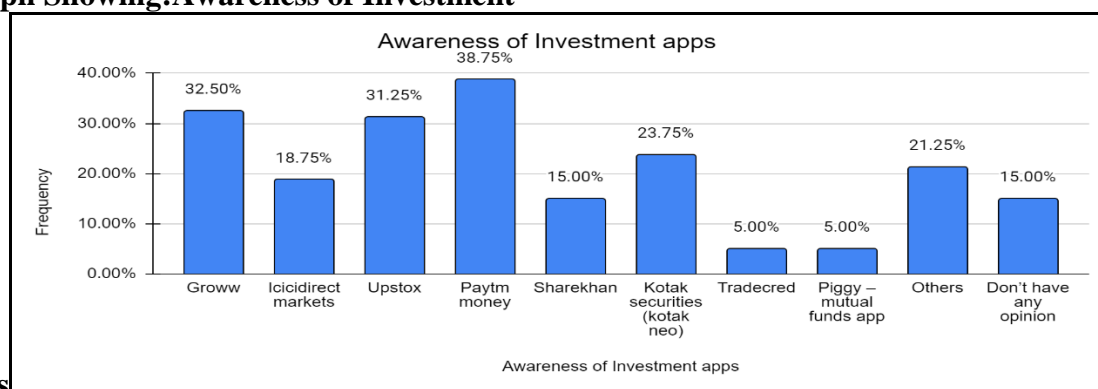
**Analysis:**Major part of respondents i.e., 65% feel that AI will be helpful for common people in investing decisions. 8% think that it is not helpful. And 28% don't have any opinion about it.



## 7. Table Showing: Awareness of Investment apps

Awareness of Investment apps		
Options	Frequency	Percent
Groww	26	32.50%
Icicidirect markets	15	18.75%
Upstox	25	31.25%
Paytm money	31	38.75%
Sharekhan	12	15%
Kotak securities (Kotak neo)	19	23.75%
Tradecred	4	5%
Piggy – mutual funds app	4	5%
Others	17	21.25%
Don't have any opinion	12	15%
<b>Total</b>	<b>80</b>	<b>100</b>

## Graph Showing: Awareness of Investment

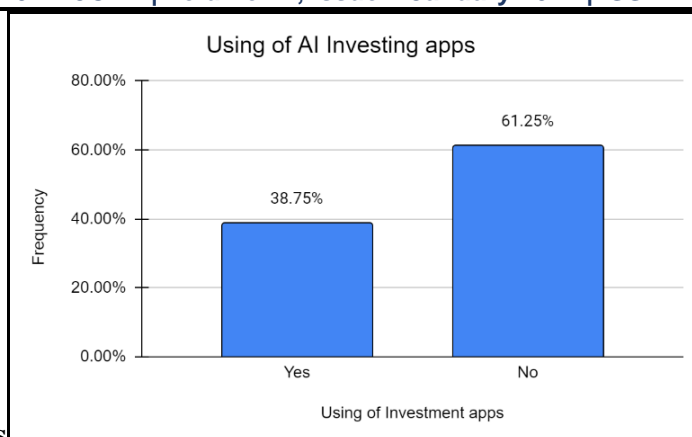


apps

**Analysis:** In the above graph 38.75% know about Paytm money. 32.5% of respondents are aware of Groww. 31.25% are aware of Upstox. 23.75% are familiar with Kotak securities (Kotak neo). 18.75% know about Icicidirect markets. 15% are aware of Sharekhan and don't have any opinion. 5% are familiar with both TradeCred and piggy-mutual funds app. And 21.25% are aware of other apps.

## 8. Table Showing: Using of Investment apps

Using of Investment apps		
Options	Frequency	Percent
Yes	31	38.75%
No	49	61.25%
<b>Total</b>	<b>80</b>	<b>100</b>



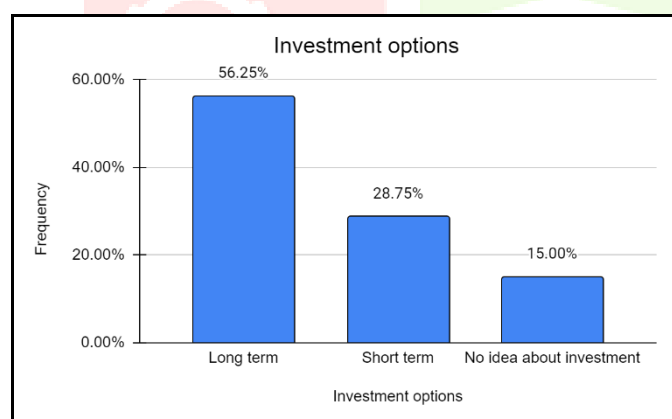
**Graph Showing:Using of Investment apps**

**Analysis:**More than half respondents i.e., 61.25% did not use AI investing apps. Whereas 38.75% used the apps.

### 9. Table Showing: Investment options

Investment options		
Options	Frequency	Percent
Long term	45	56.25%
Short term	23	28.75%
No idea about investment	12	15%
<b>Total</b>	<b>80</b>	<b>100</b>

**Graph Showing:Investment options**

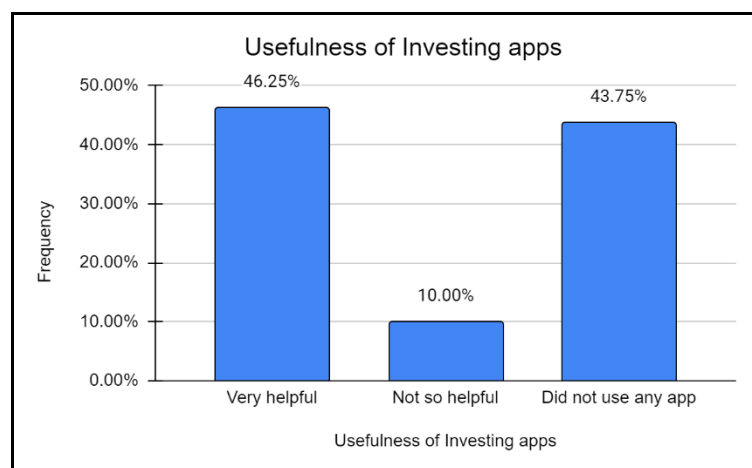


**Analysis:**The survey suggests that majority of respondents i.e., 56.25% would like to invest in long term investment. While 28.75% want to invest in short term investment. And 15% have no idea about investment.

## 10. Table Showing: Usefulness of Investing apps

Usefulness of Investing apps		
Options	Frequency	Percent
Very helpful	37	46.25%
Not so helpful	8	10%
Did not use any app	35	43.75%
<b>Total</b>	<b>80</b>	<b>100</b>

### Graph Showing: Usefulness of Investing apps



**Analysis:** Around 46.25% of respondents felt that use of AI apps was helpful in making right investment choice. Only 10% felt that it was not so helpful. Nearly half respondents i.e., 43.75% did not use any investing apps.

## FINDINGS

- Most of the respondents i.e., 87.5% are aware of investment.
- Many respondents i.e., 80% think that there is a need for investment.
- Respondents are mostly aware of Mutual funds. And only 2.5 % are aware of bonds
- More than half i.e., 56.25% of respondents are familiar with AI in Investment.
- Half of the respondents i.e., 50% strongly agree that AI helps in understanding investment options. And 2.5% strongly disagree.
- 65% people feel that AI helps common people in making investment decisions.
- Paytm money is mostly known i.e., 38.75%. Least known apps are Tradecred and Piggy-mutual funds with 5%.
- 61% of respondents did not use any investment apps.
- 56.25% of people prefer long term investments.
- 46.25% felt investment apps were helpful and 43.75% did not use any apps.

## SUGGESTIONS

Further research can be made to identify the drawbacks of using AI in Investment. The investment app making companies have to increase their efforts to educate the people about AI in Investment. The Investment firms need to work out the problems that may occur regarding security issues while using AI. The AI Investment apps have to be user friendly. For the smooth functioning of AI systems any bugs in the algorithms have to be eliminated.

## CONCLUSION

AI technology has been entering into various fields. Now it has transformed the financial industry. From the study it can be understood that many people are aware of AI in Investment and they feel that AI Investment apps help them in making better decisions. AI systems help both the common people and the firms in choosing right portfolios and arriving at accurate decisions. Slowly with these systems there will be a transformation in decision making which will be more based on the data available. With the widespread use of smart phones and devices AI apps are at the finger tip of people which could encourage them to invest. AI has started to take a firm place in Investment management and may get deeply entrenched in the financial sector.

## REFERENCES

- Arvind Ashta, Heinz Herrmann (10 May 2021) Researched on “Artificial intelligence and fintech: An overview of opportunities and risks for banking, investments, and microfinance”.
- Narendra Rao Tadapaneni (9 May 2019) A study on “Artificial Intelligence in Finance and Investment”.
- Elena Beccalli, Viktor Elliot & Francesco Virili (16 September 2020) A study on “Artificial Intelligence and Ethics in Portfolio Management”.
- Hazem Y. Abdelazim and Khaled Wahba (May 4, 2006) Research on “An artificial intelligence approach to portfolio selection and management”.
- GuoRong Hu and Hui Liu, A study on “Development Strategy of Securities Investment Industry under the Background of Artificial Intelligence”.

## WEBSITES

- <https://onlinelibrary.wiley.com/doi/abs/10.1002/JSC.2404>
- <https://philpapers.org/rec/TADAI-2>
- [https://link.springer.com/chapter/10.1007/978-3-030-47355-6\\_2](https://link.springer.com/chapter/10.1007/978-3-030-47355-6_2)
- <https://www.inderscienceonline.com/doi/abs/10.1504/IJFSM.2006.009629>
- <https://iopscience.iop.org/article/10.1088/1742-6596/1533/3/032057/meta>
- <https://smartasset.com/investing/types-of-investment>