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AI in Finance: Exploring Ethical and Legal Implications from the Viewpoint of Individual Investors

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ABSTRACT :

In the rapid growth of advancement Artificial intelligence is playing a crucial role in all the aspects. The financial decision-making is a complex and most important aspect. The changes brought by Artificial intelligence (AI) which started to influence the financial organizations and individual investors in making financial decisions, like performance evaluation, investment management, risk assessment and considering all financial goals and strategic elements.

Artificial intelligence (AI) makes use of technology such as machine learning and data analytics to convert large amounts of data quickly, helping organizations identify trends and to make better decisions. Which may result in greater profit margins, better investment and competitive position in the market. On the other side, there are risks too. Ai systems can be biased and it can be hacked by anyone which results in harmful outcomes. These harmful outcomes becomes problematic in decision making process.

This study examines the effects of AI on investment decisions. The study also focuses on knowing that AI is helpful for improving investment strategies, but human oversight is still necessary to ensure responsible use.

Keywords: Financial Decision Making, Artificial Intelligence, Investment Management

INTRODUCTION:

Ethics play a key role in how we use Artificial Intelligence (AI) in financial decision making. As AI upgrades decision-making, automates tasks, and manages money. We need to conscientiously consider the moral responsibilities that come with it. AI could lead to problems like bias, lack of transparency and accountability, which elevate serious questions about the fairness of our financial systems.

Artificial intelligence (AI) has been used in finance since the late 1900s, with initial computer models helping to analyze data for trading and risk management. Over the years, advancements in AI, especially in knowing from where computers get data and natural language processing (which helps machines understand human language) have significantly changed how finance works.

Today, AI is used in many parts of finance, like managing investments, financial decisions making, determining who can acquire loans, detecting frauds, and improving trading strategies. For instance, hedge funds use AI to analyze patterns in the stock market and predict future trends. In addition, AI-powered tools like chatbots and robo-advisors are now helping individuals by providing customised investment advice and making customer interactions simpler.

In general, as financial institutions carry on to adopt AI, this technology is expected to bring even more changes and innovation in the decisions of individual investors.

The evolution of financial systems has been shaped by the unique contexts in which they have emerged and thrived. In the past, economies were operated on barter system, then evolved to using things like gold and silver as money. Over the years, money became more abstract, moving to paper and eventually digital forms. This change happened because of both social and advances in technology.

IMPORTANCE AND NEED OF THE STUDY:

With the rapid growth of technology, AI has become an important part of financial systems, helping to analyze large amounts of data and make decisions. However, this raises concerns about accountability—who is responsible when AI makes a mistake? In traditional finance, human experts make decisions, so accountability is clear. But with AI, it becomes harder to determine responsibility if something goes wrong, such as an unfair credit decision or an inaccurate risk assessment. This challenge, known as "algorithmic accountability," means we need new rules and systems to ensure AI-driven financial decisions are fair, ethical, and transparent. Financial institutions and tech companies must work together to create guidelines that protect consumers and maintain trust in financial systems.

The use of Artificial Intelligence (AI) in finance is bringing major improvements in speed, accuracy, and security. AI can analyze large amounts of data quickly, helping banks and financial institutions make better decisions in real-time. For example, AI can track market trends, customer behavior, and risks, allowing financial systems to adapt to changes efficiently. This makes money flow more smoothly through the economy, reducing errors and ensuring financial resources are used effectively. AI also improves security by detecting fraud and unusual activities that humans might miss, making banking safer and more trustworthy. Additionally, AI increases transparency by providing clear data and reports, helping people understand their investments and savings better. This builds trust and allows businesses and individuals to make informed financial choices. Overall, AI is not only improving how financial systems work today but is also shaping a smarter, more secure, and more efficient financial future.

SCOPE & LIMITATIONS OF THE STUDY:

- The scope of the study is extended to legal & ethical implication of AI only.
- It does not cover the other aspects like non legal implication etc.
- It only considers the perception of Individual Investors.
- This study is limited only to the area of Hyderabad and has the responses from only 147 respondents.

REVIEW OF LITERATURE:

(challoumis, 2024)In his study Challoumis emphasis on the legal and ethical aspects of individual investors using AI to make financial decisions have been researched elaborately and brought out the advantages as well as negatives of an AI-driven financial system. One of the biggest challenges in using AI in finance is making sure it is used ethically and fairly. AI has the power to improve financial decisions, but it can also create problems if it is not carefully managed. Ethical guidelines are important to ensure that AI benefits everyone, not just a few. Since financial systems already reflect social and economic inequalities, AI should not make these gaps even worse. If an AI system is trained on biased data, it might unfairly deny loans to certain groups of people. To prevent such issues, financial institutions must focus on fairness, accountability, and transparency. This means ensuring AI decisions are clear, unbiased, and do not harm vulnerable people. By promoting diversity and inclusivity in AI development, we can build trust and create a financial system where both humans and machines work together for the good of society.
Concerns have raised about ethics such as bias, transparency, privacy, and reliability concerning AI algorithms.
(Barocas, 2023)Barocas, Hardt, and Narayanan (2019) argue that investment opportunities offered through AI models are biased due to investment history data used to train them, which is discriminatory.
In addition, (Ribeiro, 2016)Ribeiro, Singh, and Guestrin (2016) state that explainable AI XAI should be used to improve transparency and trust in the system because most AI systems are black boxes where users are not privy to how decisions are made.
(zarsky, 2016) Zarsky(2016) has focused on privacy concerns of unauthorized information utilization through financial AI surveillance.
(Agrawal, 2018) Agarwal (2018) have argued the complete dependency on AI makes one susceptible while making financial decisions as impeccable automation is likely to result in bad investments when the market is turbulent.

OBJECTIVES: -

- To understand the investors perception & awareness towards legal & ethical implications of AI in finance.
- To know the ethical & legal implications & Challenges faced by Individual Investors while using AI in financial decision making process.

THEORETICAL FRAMEWORK:

(challoumis, 2024) Managing risk is a crucial part of any financial system, and AI has greatly improved how this is done. The key to effective risk management is identifying potential problems early and taking steps to prevent them from harming the economy. AI helps by analyzing past data, spotting trends, and predicting possible financial risks. This allows financial institutions to prepare better strategies for unexpected events. According to the Cycle of Money theory, keeping money circulating in the economy is important for financial stability. AI supports this by helping businesses focus on preventing risks rather than just saving money to escape financial problems later.

But AI's role in risk management goes beyond just making predictions. It also helps create flexible strategies that can quickly adjust to changes in the market. By using advanced algorithms, financial institutions can continuously update their risk assessments in real-time, ensuring that their strategies remain effective. This helps protect investments and encourages businesses to use their resources in ways that keep the economy strong. Additionally, AI can analyze different types of risks—both numerical data and qualitative factors—leading to better decision-making and stronger financial stability.

As AI becomes more involved in financial decision-making, the need for transparency and accountability becomes more important than ever. AI algorithms control financial transactions that impact millions of people, but the way they work is often unclear. Many financial institutions use complex AI models that are difficult for consumers and even experts to understand. This lack of clarity can lead to problems, especially if AI systems make mistakes or unfair decisions. When things go wrong, it's not always clear who is responsible—was it the AI, the developers, or the financial institution using it? This uncertainty can weaken public trust in financial systems.

To prevent such issues, strong oversight and clear reporting are essential. If financial AI operates without regulation, there is a higher risk of poor investment decisions, economic instability, or even misuse of public funds. That's why transparency should be a key focus from the beginning, not just an afterthought. Regulators, businesses, and consumers all need better visibility into how AI makes decisions and what data it uses. This will help ensure fairness and prevent AI from benefiting only certain groups while harming others.

At the same time, financial regulations must evolve to keep up with AI advancements. Many existing laws were created before AI became so influential, so they may not be effective in addressing today's challenges. Both industry leaders and policymakers must work together to create rules that prioritize ethical AI use. If AI continues to grow without proper checks and balances, there is a risk of losing public confidence and misusing financial resources. In the long run, ensuring that AI is transparent and accountable will help create a financial system that is both efficient and fair for everyone.

As financial systems increasingly rely on AI, concerns about data privacy and security have become more serious. AI needs a large amount of personal information to function effectively, but this data can be at risk of hacking and misuse. If a financial institution's system is breached, sensitive information like bank details, credit card numbers, or personal identities could be stolen, leading to fraud, identity theft, and a loss of trust in financial services. While banks and financial firms have strict security measures, cybercriminals are always finding new ways to exploit weaknesses in AI-driven systems.

Another challenge is that data privacy laws often struggle to keep up with the rapid pace of AI development. Existing regulations aim to protect consumer data, but if they are not updated regularly, they may not be effective against new risks. This could leave individuals vulnerable to AI-powered data collection practices that they don't fully understand or consent to. To address this, financial institutions must implement strong protections not only to prevent data breaches but also to give people more control over how their data is used. A well-regulated AI system can help make financial transactions more efficient and secure, benefiting both individuals and the economy.

However, many people are unaware of how much their data is collected and processed by AI. This lack of awareness makes it easier for companies to use data in ways that consumers might not expect or approve of. To fix this, financial institutions need to do more than just protect data—they must also educate customers about their rights and the risks involved with AI. By promoting transparency and ethical data practices, financial institutions, regulators, and consumers can work together to create a secure and trustworthy financial system that protects privacy while using AI to improve services.

(Ekundayo, 2024)Big Data analytics is transforming financial markets by helping businesses and investors process large amounts of information to make better predictions and decisions. By analyzing data from different sources, such as stock prices, economic trends, social media activity, and even satellite images, financial experts can understand market movements more accurately. For example, hedge funds use Big Data to predict commodity prices by studying supply chains, weather conditions, and global events.

One key application of Big Data is *sentiment analysis, where AI analyzes news articles, financial reports, and social media discussions to understand how investors feel about the market. For instance, AI can track Twitter posts to predict how people will react to financial news, helping traders make quicker decisions. Additionally, alternative data, such as credit card transactions or mobile location data, provides unique insights into consumer spending and economic trends, allowing for smarter investment strategies.

However, using real-time data in financial markets comes with challenges. The quality and accuracy of data are crucial because incorrect or incomplete data can lead to poor decisions and financial losses. Processing massive amounts of data quickly requires advanced technology and high computing power, which can be expensive and difficult for smaller companies to manage. Additionally, financial institutions must follow strict data privacy laws like GDPR, ensuring that they collect and use data ethically and legally. Balancing innovation with security and legal regulations is essential for making the best use of Big Data in financial markets while maintaining trust and transparency.

Financial institutions that utilize AI-based investment solutions are obliged to ensure proper and ethical functioning of their systems. These entities can be liable for investors' satisfaction if they promote AI-based trading without sufficient risk disclosures, or they can be held liable for AI's actions if they do not supervise its behaviour. AI developers and technology providers, for instance, are also responsible from the algorithms which make financial actions possible. If systems are built inadequately, they may possess defects which causes bears equal responsibility to the losses. Individual persons and non-institutional traders hare liable too as they need to comprehend the risks that come with investment AI tools. Many AI systems will place disclaimers such as "investment systems can never guarantee profits," therefore those investing have to be prudent. Finally, regulators and government agencies have a particular importance to define effectiveness on the jurisdiction of AI. The absence of proper mechanisms that control AI-powered trading systems in financial laws could lead to irresponsible risks which will create inequality among investors.

RESEARCH METHODOLOGY:

This research takes into consideration both primary and secondary data. For Primary data, data is collected through a structured questioner and the responses collected has been analysed for further study. The secondary data is collected through the conference proceedings and secondary sources of published data.

STATISTICAL TOOLS:

To analyse the data, this study utilizes statistical tools, including multiple regression analysis and Chi-square testing, to uncover meaningful insights.

RESEARCH GAP:

The other research papers focuses on Ethical and Legal implication of AI in financial decision making. This study therefore identifies the gap of accountability towards financial losses incurred by individual investors due to AI-driven decisions. Therefore, this study gives a scope for future researchers to explore more on practical aspects of accountability with legal implications.

DATA ANALYSIS:

Chi Square Test:

Hypothesis:

- (H_0): There is no significant association between gender and responses regarding AI ethics.(

Results						
	yes, with proper regulations	yes, but only if designed with ethical guidelines	neutral, I'm unsure	no, AI lacks moral understanding	no, ethics cannot be programmed into AI	***Row Totals***
Male	20 (19.47) [0.01]	20 (22.04) [0.19]	10 (9.18) [0.07]	3 (2.20) [0.29]	1 (1.10) [0.01]	54
Female	32 (31.73) [0.00]	39 (35.92) [0.26]	14 (14.97) [0.06]	2 (3.59) [0.71]	1 (1.80) [0.35]	88
Prefer not to say	1 (1.80) [0.36]	1 (2.04) [0.53]	1 (0.85) [0.03]	1 (0.20) [3.10]	1 (0.10) [7.90]	5
Column Totals	53	60	25	6	3	**147 (Grand Total)**

The chi-square statistic is 13.8809. The *p*-value is .084924. The result is *not* significant at $p < .05$.

Interpretation:
Since the p-value is greater than the common significance level of 0.05, we fail to reject the null hypothesis. This suggests that there is no strong evidence of an association between gender and opinions on AI ethics.

Regression Analysis:

Hypothesis:

- (H_0): The independent variables (Age, Gender, and Income) have no significant effect on the dependent variable (possibly a behavioural or financial outcome).
- (H_1): At least one of the independent variables (Age, Gender, or Income) has a significant effect on the dependent variable

Regression Statistics	
Multiple R	0.079465228
R Square	0.006314722
Adjusted R Square	-0.014531822
Standard Error	1.120457595
Observations	147

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	1.14085985	0.380287	0.302915	0.823249345
Residual	143	179.5258068	1.255425		
Total	146	180.6666667			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.844236579	0.339905064	5.42574	2.4E-07	1.172348891	2.516124	1.172348891	2.516124266
Age	-0.033667398	0.085717478	-0.39277	0.695073	-0.203104468	0.13577	-0.203104468	0.135769671
Gender	0.116450858	0.175462869	0.663678	0.507965	-0.230385225	0.463287	-0.230385225	0.463286942
Income(in lakhs per annum)	0.059303884	0.088005923	0.673862	0.501487	-0.114656737	0.233265	-0.114656737	0.233264504

Interpretation from the Output:

- The R-Square value (0.0063) is very low, indicating that the model explains only *0.63%* of the variance in the dependent variable.
- The F-statistic significance (0.823) is quite high, suggesting that the model as a whole is not statistically significant.
- The p-values for Age (0.695), Gender (0.507), and Income (0.501) are all greater than 0.05, meaning none of these variables are significant predictors.

FINDINGS:

The regression analysis results indicate that the model has a very low explanatory power, as reflected by the R-Square value of 0.0063, which suggests that only 0.63% of the variance in the dependent variable is explained by the independent variables. Additionally, the F-statistic significance value of 0.823 is high, indicating that the overall model lacks statistical significance. Furthermore, the p-values for Age (0.695), Gender (0.507), and Income (0.501) are all greater than the conventional threshold of 0.05, implying that none of these variables serve as significant predictors of the dependent variable. These findings suggest that the selected independent variables do not have a meaningful impact on the outcome, and further refinement of the model, including the exploration of additional variables or alternative analytical approaches, may be necessary to improve explanatory power and statistical significance.

The statistical analysis reveals that the p-value is greater than the conventional significance level of 0.05, indicating that the relationship between gender and opinions on AI ethics is not statistically significant. As a result, we fail to reject the null hypothesis, suggesting that there is no strong evidence to support an association between gender and perspectives on AI ethics. These findings imply that gender may not be a determining factor in shaping individuals' views on ethical concerns related to AI. Further research with a larger sample size or additional influencing factors may be necessary to gain deeper insights into the determinants of AI ethics opinions.

CONCLUSION:

The use of Artificial Intelligence (AI) in finance brings many benefits, like improving decision-making in areas such as trading, credit approval, and risk assessment. Although, it also raises serious ethical concerns.

One major issue is **bias in AI systems** AI learns from past data, and if that data contains unfair patterns, the AI can continue or even worsen those biases. For example, if a credit-scoring AI is trained on data that favors certain groups over others, it might unfairly deny loans to some people while approving them for others. This can create inequality, where some people benefit while others suffer.

Another big challenge is **lack of transparency**. Many AI models work like a "black box," which means we don't completely understand how they make decisions. In finance, where people need to trust systems that decide who gets loans or which investments are best, this lack of clarity can be dangerous. It could allow for mistakes, unfair treatment, or even intentional manipulation by those who control the AI.

To address these issues, we must carefully consider ethical principles like **fairness, accountability, and transparency**. Just as scientists try to understand nature through careful study, we need to examine AI systems thoroughly to ensure they are fair and responsible. While AI offers exciting possibilities in finance, we must be careful to use it in a way that benefits everyone, not just a few.

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