



To Study the Investor Awareness About Algo Trading with AI in the Ahmedabad

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ABSTRACT

This research examines the level of investor awareness of Algo trading based on AI in Ahmedabad and their relationship between age and several factors that may influence trading behavior. Using statistical analysis, the research establishes the existence or nonexistence of correlations between age and various motives, including speed of execution, type of trading instruments used, sources of data relied on, and programming tools. The findings indicate weak relationships across all hypotheses, suggesting that age alone is not a significant determinant in Algo trading adoption or preferences. Key results indicate that age has a very minor influence on motivations such as faster execution and the choice of trading instruments, namely stocks and crypto currencies. The same weak correlations were found for age and the use of programming languages, including Python and C++, as well as reliance on social media trends and real-time market data. Other challenges, like access to quality data, have been found to be independent of age, implying that systemic changes are needed and not demographic-specific solutions. The inferences drawn from this research are that inclusive and universal features need to be encouraged within the Algo trading platforms so that diverse audiences can easily access them. Adoption should be further investigated into broader demographic, behavioral, and technological factors that will influence its adoption. Significant contributions to this research would help financial institutions, policymakers, and technology developers design strategies that promote efficiency and accessibility by AI systems for trading purposes

INTRODUCTION

The incorporation of Artificial Intelligence (AI) into algorithmic trading signifies a major transformation in the finance sector. In recent decades, advancements in technology, particularly AI, have significantly altered financial markets and the investment process. The conventional approach to stock trading, which heavily depended on human judgment, analysts, and media narratives, has transitioned to a more automated, data-centric methodology. This change is primarily driven by the emergence of AI-enhanced trading platforms that utilize sophisticated algorithms to analyze extensive datasets and accurately forecast stock market trends. This evolution has resulted in new opportunities and challenges for investors, particularly in Indian markets, and specifically in the city of Ahmedabad, where awareness and engagement with AI-based trading are vital.

One of the most notable changes AI has introduced to stock markets is the democratization of trading. Traditionally, stock investment was primarily accessible to wealthy individuals or institutional investors who could afford high brokerage fees and obtain proprietary analyses. The rise of online trading platforms has disrupted this model by removing numerous barriers, allowing broader access to the stock market for everyday investors. These platforms enable individual traders to operate from home, thus facilitating unprecedented participation levels. Nevertheless, human intuition and conventional analysis continued to play a role in trading until AI's capacity to handle and interpret vast data sets transformed the landscape.

AI in stock trading employs advanced algorithms that process extensive real-time market information, identifying patterns and forecasting future price changes. These algorithms are adept at detecting market trends, assessing company financial health, and measuring investor sentiment. This capability to anticipate market shifts and execute trades at incredible speeds has made AI-driven trading systems appealing to both institutional and retail investors. AI can function at a scale and speed unattainable by humans, allowing traders to exploit transient market inefficiencies and arbitration prospects.

The development of algorithmic trading, propelled by AI, has significantly enhanced the efficiency, liquidity, and general stability of financial markets. Initially rooted in rule-based systems that executed trades according to set conditions, algorithmic trading has evolved with AI integration, which allows algorithms to adapt and learn from previous transactions while refining their tactics based on new information. This has marked a pivotal change, as AI now has the capability to modify its strategies according to market conditions and emerging data.

One primary benefit of AI-driven trading is its enhancement of market efficiency. AI systems can conduct trade analyses and executions far more rapidly than human traders, enabling them to exploit minor price changes before they vanish. This swift and precise action fosters more efficient markets, where prices reflect real-time information. Furthermore, AI systems can bolster market liquidity by ensuring trades are executed efficiently, with fewer delays, leading to better prices for investors.

Despite the substantial advantages presented by AI, it has also raised new challenges and risks. The implementation of advanced algorithms has sparked worries about potential market manipulation, unfair investor advantages, and increased volatility. High-frequency trading (HFT), where thousands of trades occur per second, exemplifies the impact of AI on market dynamics. Critics contend that HFT strategies can induce "flash crashes" and create an uneven playing field, favoring institutional investors with access to advanced AI systems while disadvantaging smaller retail investors.

The introduction of algorithmic trading also raises ethical concerns. Algorithmic biases might lead to inequitable market outcomes if algorithms are unintentionally trained on historically biased data. Additionally, the often opaque nature of many AI algorithms, regarded as proprietary information, raises issues regarding the transparency and accountability of these systems. These challenges underscore the pressing need for strong regulations and protections to prevent systemic risks and unfair market practices resulting from AI in trading.

The significance of AI in trading is particularly pronounced in emerging markets like India, where investor awareness of the advantages and risks associated with algorithmic trading is growing. Investors in cities like Ahmedabad are becoming increasingly tech-savvy, and AI-driven trading platforms are gaining traction. However, compared to more established markets, the level of understanding about AI and algorithmic trading among Indian investors remains relatively limited. Despite the rising participation in the stock market, many investors in India are still unfamiliar with the complexities of algorithmic trading and the potential enhancements AI can offer to their trading strategies.

The objective of this research is to examine investor awareness of algorithmic trading and AI in Ahmedabad, a key commercial and financial centre in India. As interest in AI-powered financial tools expands, it is essential to evaluate how well investors in Ahmedabad are prepared to make informed choices. By analyzing the level of awareness regarding algorithmic trading strategies, this study aims to highlight gaps in investor education and the challenges investors encounter in this evolving landscape.

This research will also assess the strategies investors apply when utilizing AI-driven trading tools. While many investors are eager to integrate advanced technologies into their trading, they often lack a comprehensive understanding of how these tools function or the associated risks. Although AI can significantly augment an investor's forecasting abilities concerning market trends, it necessitates a solid understanding of both technology and market dynamics. This knowledge gap can lead to poor decision-making and potential financial losses.

To address this gap, the study will investigate various factors influencing investor awareness and adoption of AI-driven trading strategies in Ahmedabad, including the availability of information, the educational role of financial institutions, and the regulatory environment. Moreover, the research will explore the perceived benefits and risks associated with AI in trading from the perspective of investors in Ahmedabad, identifying areas where additional education and regulatory measures might be warranted.

AI-driven trading platforms, such as robot-advisors and algorithmic trading systems, are becoming increasingly prevalent in global financial markets. Nevertheless, there is a scarcity of research concerning their utilization in Indian markets. By focusing on investor awareness in Ahmedabad, this research aims to enrich the existing literature on AI in financial markets and offer valuable insights into how Indian investors interact with this technology. The outcomes will not only reveal the level of awareness but also propose strategies for enhancing investor education and the overall efficacy of AI-driven trading systems in India.

In summary, AI and algorithmic trading are significantly shaping the financial landscape, equipping investors with sophisticated tools to improve their trading strategies and enhance market efficiency. However, the heightened complexity of these systems necessitates a deeper understanding of how investors perceive and leverage these technologies. In cities like Ahmedabad, where investor awareness is still maturing, there is an urgent need for educational initiatives and regulatory frameworks to ensure that AI-enhanced trading remains accessible, equitable, and transparent. By examining investor awareness of AI in trading, this research aspires to provide insights that can facilitate better adoption and effectiveness of algorithmic trading in India.

Research Objectives

- Examine the evolution of algorithmic trading and the integration of AI in financial markets.
- Analyze the benefits and challenges associated with AI-driven algorithmic trading strategies.
- Explore the types of strategies used in AI-driven algorithmic trading, such as trend following, statistical arbitrage, and sentiment analysis.
- Evaluate the impact of AI-driven algorithmic trading on market efficiency, liquidity, and price discovery.
- Investigate the risks and ethical considerations associated with algorithmic trading, including algorithmic bias and market manipulation.
- Assess the regulatory challenges and considerations in managing AI-driven trading systems.
- Identify future trends and advancements in AI and their potential influence on algorithmic trading.
- Provide recommendations for responsible and transparent use of AI in financial trading.

LITERATURE REVIEW

- *Introduction to Algorithmic Trading and AI in Financial Markets*

Algorithmic trading, which leverages mathematical models and algorithms for trading decisions, has notably reshaped financial markets over the past few decades. The fusion of finance and technology has led to innovative developments that have transformed market operations. The incorporation of Artificial Intelligence (AI) into algorithmic trading represents the forefront of financial technology, allowing for the automation of complex tasks and decision-making. AI improves the efficiency of algorithmic trading systems by analyzing vast amounts of data, forecasting market trends, and executing trades more swiftly than human traders. This literature review explores the progress of algorithmic trading, the significance of AI in its advancement, the diverse strategies utilized in AI-driven algorithmic trading, and the impact of these technologies on financial markets.

- *Historical Development of Algorithmic Trading and the Role of AI*

The inception of algorithmic trading dates back to the early 1970s with the establishment of the first electronic exchanges, enabling automatic trade execution through computer systems. However, it gained widespread adoption in the late 1990s and early 2000s, primarily due to significant advancements in computational technology and the rise of electronic trading platforms. Early algorithmic trading relied on straightforward rules – such as price movements or technical indicators – to execute trades, functioning without adjustments to fluctuating market conditions.

The integration of AI into algorithmic trading represents a major turning point. Technologies like machine learning (ML) and deep learning (DL) have introduced advanced sophistication to trading algorithms. Machine learning equips algorithms with the ability to learn from past data, modify their strategies in response to real-time market conditions, and adapt to new data inputs. This inherent adaptability of AI algorithms has greatly enhanced the effectiveness of algorithmic trading systems. Deep learning has further improved these capabilities by allowing models to interpret unstructured data, such as news articles and social media sentiments, alongside traditional market data.

- *The Symbiotic Relationship Between AI and Algorithmic Trading*

AI and algorithmic trading are mutually beneficial, resulting in sophisticated trading strategies that surpass traditional approaches. AI drives many advanced strategies in algorithmic trading, enabling systems to handle extensive data, recognize intricate patterns, and make predictions unattainable for human traders.

One of AI's key contributions to algorithmic trading is its ability to improve predictive accuracy. Machine learning algorithms can scrutinize historical market data to identify patterns predictive of future price movements. This empowers traders to make better-informed decisions and capitalize on short-term market discrepancies. AI systems also continuously refine their predictions by learning from new data, enhancing their forecasting performance over time. Consequently, AI-powered trading systems often outperform

traditional trading methods, especially in high-frequency trading (HFT), where speed and precision are paramount.

Additionally, AI's capability to analyze large volumes of unstructured data has opened new possibilities for algorithmic trading. Sentiment analysis, for example, employs natural language processing (NLP) techniques to evaluate social media, news articles, and other text sources to assess market sentiment. By integrating sentiment analysis into trading algorithms, AI offers insights beyond traditional data sources like financial statements and technical indicators. This multidimensional data analysis approach strengthens algorithmic trading strategies, making them more resilient to market fluctuations and unforeseen events.

Research Gap

While algorithmic (Algo) trading powered by artificial intelligence (AI) is becoming increasingly popular worldwide, there remains a significant gap in research regarding investor awareness of these technologies, especially in specific regions like Ahmedabad, India. Most existing studies concentrate on the technical and financial outcomes of Algo trading systems, overlooking the essential factors of investor understanding, perceptions, and the challenges to adoption. Ahmedabad, as a fast-growing financial centre, provides a unique environment where traditional trading methods still prevail, which may impact the uptake of AI-based Algo trading. Additionally, there is limited research on how demographic factors, investor education, and market dynamics influence awareness and adoption in this area. This gap underscores the necessity for localized, data-driven research to connect technological progress with investor preparedness.

Hypothesis

- **H1** : There is a significant relationship between Age and the motivation of faster execution in algorithmic trading.
- **H2** : There is a significant relationship between Age and the primary trading of stocks using algorithmic trading.
- **H3** : There is a significant relationship between Age and the primary trading of crypto currency using algorithmic trading.
- **H4** : There is a significant relationship between Age and the evaluation of algorithm performance based on the profit/loss ratio.
- **H5** : There is a significant relationship between Age and the use of Python for developing trading algorithms.
- **H6** : There is a significant relationship between Age and the use of C++ for developing trading algorithms.
- **H7** : There is a significant relationship between Age and the reliance on real-time market data for algorithmic trading.
- **H8** : There is a significant relationship between Age and the reliance on social media trends as a data source for algorithmic trading.
- **H9** : There is a significant relationship between Age and the use of stop-loss/take-profit levels in algorithmic trading.

- **H10** : There is a significant relationship between Age and the challenge of access to quality data in algorithmic trading.

Table 1. Validation of Questionnaire

Statements	Citation from JV citation file
H1 : There is a significant relationship between Age and the motivation of faster execution in algorithmic trading.	(Vidani, 2015)
H2 : There is a significant relationship between Age and the primary trading of stocks using algorithmic trading.	(Vidani & Solanki, 2015)
H3 : There is a significant relationship between Age and the primary trading of cryptocurrency using algorithmic trading.	(Solanki & Vidani, 2016)
H4 : There is a significant relationship between Age and the evaluation of algorithm performance based on the profit/loss ratio.	(Bhatt, Patel, & Vidani, 2017)
H5 : There is a significant relationship between Age and the use of Python for developing trading algorithms.	(Pradhan, Tshogay, & Vidani, 2016)
H6 : There is a significant relationship between Age and the use of C++ for developing trading algorithms.	(Vidani, 2016)
H7 : There is a significant relationship between Age and the reliance on real-time market data for algorithmic trading.	(Sukhanandi, Tank, & Vidani, 2018)
H8 : There is a significant relationship between Age and the reliance on social media trends as a data source for algorithmic trading.	(Singh, Vidani, & Nagoria, 2016)
H9 : There is a significant relationship between Age and the use of stop-loss/take-profit levels in algorithmic trading.	(Mala, Vidani, & Solanki, 2016)
H10 : There is a significant relationship between Age and the challenge of access to quality data in algorithmic trading.	(Dhere, Vidani, & Solanki, 2016)

*Source: Author's Compilation

METHODOLOGY

Table 2. Research Methodology

Research Design	Descriptive
Sample Method	Non-Probability - Convenient Sampling method
Data Collection Method	Primary method
Data Collection Method	Structured Questionnaire
Type of Questions	Close ended
Data Collection mode	Online through Google Form
Data Analysis methods	Tables
Data Analysis Tools	SPSS and Excel
Sampling Size	176
Survey Area	Ahmedabad
Sampling Unit	Students, Private and government Job employees, Businessmen, Home maker, Professionals like CA, Doctor etc.

*Source: Author's Compilation

Demographic Summary

The demographic summary of the sample reveals that the majority of respondents are male (76.7%), with females comprising 23.3%. In terms of age, the largest group falls within the 18-25 age range (54.5%), followed by those aged 25-32 (16.5%). The sample also includes respondents from various occupational backgrounds, with students representing 41.5%, business professionals 40.3%, and a smaller proportion in jobs (10.2%) and other professions. Regarding education, most participants hold a post-graduate degree (51.1%), while 35.2% have completed their undergraduate studies. In terms of income, nearly half of the participants earn below 3 laths annually (48.3%), while smaller groups fall into higher income brackets, with 18.8% earning between 6-10 lakhs.

RESULTS

Table 3. Cronbach Alpha

Cronbach Alpha Value	No. of items
0.979	29

*Source: SPSS Software

The Cronbach's Alpha value of 0.979 for the 29 items in this study indicates excellent internal consistency. This high value suggests that the items used in the measurement are highly reliable and consistently measure the intended construct. Generally, a Cronbach's Alpha value above 0.9 is considered excellent, reflecting a strong degree of correlation among the items and a high level of reliability for the scale used in the research. Therefore, the scale can be regarded as a reliable instrument for assessing the underlying variables in this study.

Table 4. Results of Hypothesis Testing

Sr. No	Alternate Hypothesis	Result p =	>/< 0.05	Accept/Reject Null hypothesis	R value	Relationship
H1	There is a significant relationship between Age and the motivation of faster execution in algorithmic trading.	0.112	>	H01 Accepted (Null hypothesis rejected)	0.266	Weak
H2	There is a significant relationship between Age and the primary trading of stocks using algorithmic trading.	0.233	>	H02 Accepted (Null hypothesis Accepted)	0.444	Weak
H3	There is a significant relationship between Age and the primary trading of cryptocurrency using algorithmic trading.	0.404	>	H03 Accepted (Null hypothesis rejected)	0.033	Weak
H4	There is a significant relationship between Age and the evaluation of algorithm performance based on the profit/loss ratio.	0.666	>	H04 Accepted (Null hypothesis rejected)	0.267	Weak
H5	There is a significant relationship between Age and the use of Python for developing trading algorithms.	0.649	>	H05 Accepted (Null hypothesis rejected)	0.428	Weak
H6	There is a significant relationship between Age and the use of C++ for developing trading algorithms.	0.431	>	H06 Accepted (Null hypothesis rejected)	0.153	Weak
H7	There is a significant relationship between Age and the reliance on real-time market	0.557	>	H07 Accepted (Null hypothesis rejected)	0.842	Weak

	data for algorithmic trading.					
H8	There is a significant relationship between Age and the reliance on social media trends as a data source for algorithmic trading.	0.446	>	H08 Accepted (Null hypothesis rejected)	0.090	Weak
H9	There is a significant relationship between Age and the use of stop-loss/take-profit levels in algorithmic trading.	0.563	>	H09 Accepted (Null hypothesis rejected)	0.134	Weak
H10	There is a significant relationship between Age and the challenge of access to quality data in algorithmic trading.	0.885	>	H010 Accepted (Null hypothesis rejected)	0.654	Weak

*Source: Author's Compilation

DISCUSSION

The study aimed to examine the awareness of algorithmic (Algo) trading with artificial intelligence (AI) among investors in Ahmedabad, focusing on the relationship between age and various factors influencing their trading decisions. The findings revealed several interesting insights, though the relationships across all hypotheses were weak, as evidenced by low R-values.

1. For H1, the relationship between age and the motivation of faster execution in algorithmic trading was explored. With a p-value of 0.112 (greater than 0.05), the null hypothesis was rejected, indicating no significant relationship. However, the R-value of 0.266 suggests a weak correlation, implying that age marginally influences the motivation for faster execution in trading.
2. In H2, which examined the relationship between age and the preference for trading stocks using algorithmic trading, the p-value was 0.233 (greater than 0.05). The null hypothesis was accepted, indicating no significant relationship, and the R-value of 0.444 further confirms a weak correlation. This finding implies that stock trading through Algo trading is not strongly age-dependent.
3. For H3, the study investigated the relationship between age and the preference for cryptocurrency trading using algorithmic trading. A p-value of 0.404 led to rejecting the null hypothesis, but the weak R-value of 0.033 suggests a negligible correlation. This result indicates minimal variation in cryptocurrency trading preferences across age groups.

4. The relationship between age and evaluating algorithm performance based on profit/loss ratio (H4) revealed a p-value of 0.666. The null hypothesis was rejected, but the R-value of 0.267 highlighted a weak association. This implies that while profit/loss evaluation is essential, it is not significantly impacted by the trader's age.
5. For H5, the use of Python for developing trading algorithms showed a p-value of 0.649, resulting in the null hypothesis being rejected. The R-value of 0.428 indicates a weak correlation, suggesting that Python's utility in trading algorithm development is slightly influenced by age, but the effect is minimal.
6. Similarly, H6, which focused on the use of C++ for developing trading algorithms, had a p-value of 0.431 and an R-value of 0.153. The null hypothesis was rejected, and the weak correlation implies that age has a minimal influence on the choice of C++ for algorithm development.
7. In H7, the reliance on real-time market data for algorithmic trading yielded a p-value of 0.557. Although the null hypothesis was rejected, the R-value of 0.842, though weak, suggests a slightly higher but still limited correlation compared to other hypotheses.
8. The exploration of reliance on social media trends (H8) yielded a p-value of 0.446, leading to rejecting the null hypothesis. However, the R-value of 0.090 reflects a negligible correlation, emphasizing minimal age-related differences in this aspect.
9. For H9, the use of stop-loss and take-profit levels in algorithmic trading had a p-value of 0.563. The null hypothesis was rejected, but the R-value of 0.134 confirms a weak association.
10. Lastly, H10, examining the challenge of access to quality data in algorithmic trading, had the highest p-value (0.885). The null hypothesis was rejected, and the R-value of 0.654 shows a slightly higher but still weak correlation, indicating that age has a minor role in perceiving data accessibility challenges.

In summary, while age has weak correlations with various factors influencing Algo trading, the study underscores the need for further research to explore other demographic and behavioral aspects that might have stronger impacts.

- ***Theoretical Implications***

This research finding has various theoretical implications that advance understanding of investor behavior and awareness regarding algorithmic trading, powered by AI. This work is contributing to the body of literature within financial technology, investor psychology, and age-based decision-making in trading environments.

Weak associations between hypotheses show that existing theories related to the role of demographic factors, such as age, in determining technological adoption and decision-making in Algo trading need a reevaluation. Age, an often cited key variable in the technology acceptance model, does not appear to significantly influence motivations, preferences, or challenges related to algorithmic trading. Such an impression challenges traditional assumptions and

suggests that factors other than age might play a more significant role in shaping investor behavior under the paradigm of Algo trading.

On the other hand, the study finds that AI-based trading is indeed complex and multi-layered, meaning that motivations for faster execution (H1) and the type of trading instrument, such as stocks (H2) or crypto currencies (H3), depend only marginally on age. This result goes in line with behavioral finance theories that state psychological and cognitive biases may dominate the demographic influence of trading decisions.

However, the weak age-performance evaluation-based profit/loss ratio correlation under H4 leads to the proposition that performance indicators may be valuable for all types of investors and is independent of age. Thus, this finds support in certain theories in the field of decision science, wherein the outcome-driven measures (in this case, profitability) precede demographic/personal attributes that determine financial choice.

Moreover, the fact that age does not significantly relate to preferences in programming (H5, H6) or dependency on data sources (H7, H8) indicates that technical aspects of Algo trading are beyond age-related barriers. This is supported by theories on digital literacy and skill acquisition, which state that once individuals achieve a certain level of proficiency, demographic factors like age are less relevant. These findings support the view that trading environments become more democratized, and this is greatly served through technology, bridging gaps with age groups.

The weak relationship of age with access barriers to high-quality data, as seen in H10, makes one suspect that there are weaknesses in information asymmetry theory. Perhaps all investors face problems accessing quality data and it's not particularly determined by demographics. This has resulted in the need for further work into the deeper structural and systemic issues which make quality data not readily available or of lesser quality to any investor.

In conclusion, the study contributes to theoretical advancements by challenging conventional assumptions about age as a dominant factor in technology adoption and decision-making in Algo trading. It underlines the importance of looking into more granular and behavioral determinants of investor awareness and decision-making and thus opens the way for further research to be done on alternative demographic, psychological, and structural variables in financial technology adoption. These findings could be used to improve existing models and inform policies aimed at increasing inclusive participation in AI-driven financial markets.

- ***Practical Implications***

The findings of this study have several practical implications for stakeholders involved in algorithmic (Algo) trading, including investors, financial institutions, technology providers, and policymakers. These insights can help enhance the adoption and effectiveness of AI-driven trading strategies while addressing challenges faced by investors.

First, because the weak correlations of age with most other variables that affect Algo trading, the age groups in a large demography can potentially become a broad base of target clients for Algo trading tools and platforms. Then again, financial institutions as well as technology providers can expand their user bases through clearer emphasis on features that appeal to diverse preferences such as ease of use, reliability, and customization options.

Secondly, the fact that age has a little influence on motivations such as faster execution (H1), or the choice of trading instruments such as stocks (H2) and crypto currencies (H3) shows that the platforms need to focus more on the intrinsic benefits of algorithmic trading rather than tailoring these benefits to specific age groups. Educational programs should focus on demonstrating the universal advantages of Algo trading such as speed, accuracy, and efficiency to attract a wider range of investors.

The weak relationship between age and performance assessment on profit/loss ratio-based performance measurement criteria, as represented in H4, points out the significance of universal relevance in terms of performance measures. The relevance in terms of universal analytics reporting is of crucial importance within the trading platform Algo so that traders at all ages may keep proper and optimized tracks in trading through Algo platforms.

The minimal effect of age in the use of programming languages like Python and C++ (H5, H6) has an opportunity where Algo trading platforms can embed user-friendly interfaces that require minimum coding knowledge. By offering no-code or low-code solutions, these platforms appeal to investors without a strong technical background, therefore reducing barriers to entry and raising adoption rates for all age groups.

It is also found that dependence on live market data (H7) and social media trends (H8) was not affected much by age; therefore, there is a greater need for diversified sources of data within the platforms. High-quality access to data coupled with tools that help in the analysis and timely action on them will be pivotal for enhancing investor confidence and quality of decision making.

The last is that the weak relationship between age and access to good quality data like that on the availability of good quality data for investors (H10) also indicates a call for systemic change in data provision and availability. Policymakers and regulatory agencies must engage technology vendors to avail good quality market data to investors across all walks of life.

In conclusion, the study's findings provide actionable insights for designing and promoting Algo trading platforms. By addressing universal needs rather than age-specific concerns, stakeholders can create more inclusive, efficient, and user-friendly environments that empower a diverse group of investors to harness the benefits of AI-driven trading.

CONCLUSIONS AND RECOMMENDATIONS

The paper examines investor awareness and the age factor with several other variables of influence in Algo trading using AI in Ahmedabad. It is found that age does bear some relationship with aspects of Algo trading but these relationships are generally weak, indicating that age alone does not play a major role in determining investor behaviour or preference in this domain.

Key insights that have been realized from the research include the facts that motivations to execute faster, choice of instruments for trading purposes, whether stock or crypto currencies, and dependence on Python and C++ programming languages have a minimal age dependency. Additionally, challenges including quality data and diversity of sources of data that inform decisions also depend minimally on age. This makes clear that demographic characteristics are probably overshadowed by the influence of more specific variables like technological literacy, trading experience, or risk tolerance in forming investor behaviour.

This research suggests that the Algo trading platforms and tools must be more aligned with universal features to cater to a diverse group of users rather than focusing on particular age groups. The enhancement of user-friendliness, accessibility of data, and performance analytics will benefit all investors. The results also bring into focus the importance of education to enhance awareness and adoption of AI-driven trading strategies and to create an inclusive financial market.

Based on the conclusions here, this work contributes to making sense of dynamics in Algo trading adoption; it can build an avenue for later studies that analyze broader variables, which could then influence investor behaviours. Additionally, it will inform stakeholders of action plans and how to establish specific policies to stimulate greater participation and access AI trading benefits by even more people.

FURTHER STUDY

The result of this research has left doors open for other future research works and also provide a base line for further investigating investor awareness and behavior in an algorithmic Algo trading through AI. Few key recommendations with future research scopes are given as follows:

1. *Investigate Other Demographic Variables*

While this study focuses on age, other demographic factors that could be investigated in the future include education level, income, trading experience, and technological proficiency. These may shed more light on the determinants of the adoption of Algo trading among investors.

2. *Behavioral and Psychological Factors*

Investigating behavioral and psychological aspects, such as risk tolerance, investment goals, and cognitive biases, could yield insights into how different investor profiles approach Algo trading. This would help identify the interplay between human decision-making and AI-driven trading systems.

3. *Geographical Expansion*

Comparing the findings with other cities or regions, either in India or other countries, will allow a comparison of investor awareness and behavior. Such research might also expose cultural and market-specific differences in adopting Algo trading.

4. *Longitudinal Studies*

The longitudinal approach would, therefore, allow tracking of change in investor behavior and awareness as time progresses and the accessibility of technology is improved. In return, this provides insight into the trends and shift in adoption.

5. *Impact of Education and Training Programs*

Future studies will focus on establishing the effectiveness of education and training programs for generating awareness and gaining expertise in the area of Algo trading. Further research would prove beneficial for both policymakers and the financial institutions who want to propagate informed participation.

6. *Use of Additional Variables*

Such factors as investor familiarity with AI technologies, preferences for specific data sources, and the influence of market conditions could be incorporated into future studies. This would provide a more comprehensive picture of the determinants of Algo trading adoption.

7. *Technological Factors and Tools*

Future research could look at the impact of specific technological tools, platforms, and programming languages on investor choice. Preferences for specific tools, like low-code platforms or advanced analytics, can help inform the design of more accessible solutions.

8. *Regulatory and Ethical Considerations*

An important area of research into AI-driven trading would be its regulatory and ethical implications. Further studies can examine the investor perception of these factors and how they may affect the adoption rates of such strategies, given growing concerns over fairness, transparency, and data privacy.

9. Hybrid of AI and Traditional Trading Strategies

Research could also examine how investors integrate Algo trading with traditional trading strategies and whether hybrid approaches lead to better outcomes. This could provide valuable insights into optimizing trading practices.

10. Impact on Different Investor Types

Future research could distinguish between retail and institutional investors to explore differences in awareness, adoption, and challenges faced in Algo trading. Such segmentation could offer tailored insights for different stakeholder groups.

This way, by addressing these areas, future research can offer a more nuanced understanding of factors influencing Algo trading and contribute to the development of strategies that would facilitate wider and more effective adoption of AI-driven trading systems.

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