

A Critical Study on Harnessing the Power of Artificial Intelligence in Stock Market Trading

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ABSTRACT

Artificial Intelligence is the replica of human intelligence operations by machines, particularly computer systems. Special applications of AI is inclusive of expert systems, natural language processing, speech identification & machine vision. Stock trading engages in buying & selling of shares of a certain company. AI Trading is the utilization of Artificial Intelligence in the trading arena to examine market data, obtain investment notions & construct portfolios. AI Trading touches on the application of algorithms & machine learning strategies to dissect large amounts of data & pinpoint patterns & trends in the market. The current statistics have clearly shown that the India AI market size will reach \$680 Million in 2022 & further it is predicted to grow to about \$ 3,935.5 Million by 2028, showing a growth rate (CAGR) of 33.28% during 2023-2028. The advantages of AI Trading are risk management, algorithmic trading, better forecasting, fraud detection & lower costs. The top AI stocks to invest in are Affle, Bosch, Cyient, Nifty 50, Tata Elxsi & Persistent Systems. My objective is to evaluate the current AI Technologies in stock market trading, To examine the impacts of AI on market efficiency, To understand the percentage of people who are purchasing AI stocks in the trading market. To identify the initiatives taken by the government to safeguard AI Trading & To address the key challenges & limitations on the use of AI trading in the stock market. The author has collected 202 samples. The researcher undertaken the empirical research method. The scope of having a strict & good AI trading platform for investors & traders is purely in the hands of the government. AI Trading is very complex since there are high chances of fraud to occur & other problems are inevitable in nature in this type of stock trading.

KEYWORDS: Artificial Intelligence, Stock Market Trading, Government, Data, AI Trading Algorithms.

INTRODUCTION

Let me start my research paper with a fantastic quote on harnessing the power of AI in stock market trading “With ML & Deep Learning, we can now look at all these unstructured data sets & mine lots of trading insights which we would not do before”. AI Trading refers to wide usage of artificial intelligence, prognostic analysis & machine learning to break down historical market & stock statistics, obtain investment ideas, construct portfolios & automatically buy & sell stocks. There are various impacts of AI on market efficiency are information processing & study, Trading decision-making & Risk Management & Portfolio development. The key challenges & limitations on the use of AI trading in the stock market are Human interference & judgment, market changing-environment, operational confrontations. The Historical background of AI power on stock market trading as early as 1960-1970s with the introduction

of computers financial markets began to change as computational models were utilized for easy figuring & record-keeping as in mid-1970s establishment of Black-Scholes models for various option pricing, as that marked a very important step in quantitative finance. This period also saw the emergence of electronic trading systems like NASDAQ, which entered the market in 1971. The Government Initiatives & acts are SEBI Act, 1992 as this act gives powers to SEBI to control the securities market in India. SEBI also formulates various policies to be applied to AI & algorithmic trading in order to see to it that fair practices & safeguard investors interests & National Strategy on AI. The factors affecting the power of AI on the stock market trading are data accessibility & quality, algorithmic intricacy, risk management & regulation & ethics & bias. The current trends with regard to power of AI on the stock market trading are Deep Learning & Neural Networks, Natural Language Processing, Explainable AI & Robotic Process Automation etc. The comparison between different countries with regard to the power of AI in stock market trading is in United States the regulatory framework is Securities & Exchange Commission as it closely watches AI use in trading, concentrating on transparency & fairness & creation center as there is silicon valley & other technology hubs foster innovations in AI Technologies for trading where as in United Kingdom the government regulations are the Financial Conduct Authority controls & maintains AI in stock market trading, highlighting risk management, lucidity & shielding investors concern. **AIM:** The Aim of my research is to have a critical study on harnessing the power of Artificial Intelligence in stock market trading.

OBJECTIVES

1. To evaluate the current AI Technologies in stock market trading.
2. To examine the impacts of AI on market efficiency.
3. To understand the percentage of people who are purchasing AI stocks in the trading market.
4. To identify the initiatives taken by the government to safeguard AI Trading.
5. To address the key challenges & limitations on the use of AI trading in the stock market.

LITERATURE REVIEW

(Guo, J., Cao, J., & Wang, J 2020) This review suggested a hybrid deep learning model for stock price forecasting. The model mixes the strengths of diverse deep learning approaches to intensify prediction precision. **(Zhang, W., Wang, L., & Ma, L. 2020)** This review concentrated on stock market trend prophecy utilizing pile up autoencoders & LSTM. The study used the power of deep learning & consecutive modeling to capture earthly patterns & forecast market craze. **(Chen, M., Li X., & Du, Z. 2020)** This review established a smart stock trading system based on enhanced deep shaft learning. The model harnessed brace learning algorithms to make trading decisions & maximize investment proposed action. **(Qiu, T., Wang, Z., Cao, J., & Liu, J. 2021)** This review dispensed a deep learning-based stock choice model by utilizing financial news sentiment analysis. This study unified sentiment analysis of financial news to enhance stock selection examination. Stock Forecasting aims at assessing the future price shifting in a stock, which is normally comprehended as a challenging task because of the motionless & volatility of the stock data. Changing stock market price differentiation & its messy behavior have raised the price prediction problem where the extreme non-linear, changing, convoluted domain knowledge inherent in the stock market has hiked the complexity level for investors in building correct investment decisions. **(Esfahanipour, Akbar, and Werya Aghamiri. 2010).** There are two conventional theories to take into consideration when appraising the stock price, namely, effective market hypotheses (EFH) &

random walk (RW) theory. EMH states that a stock price soaks up all known market knowledge at any time. Since market participants ideally use all familiar information, price variations are capricious as new information happens casually. **(Fama 1970)**. Whereas according to the random walk theory, stock prices steer a random walk, which means that all the forthcoming prices do not heed any trends or patterns, & are an impulsive divergence from the past prices, & an investor cannot perhaps predict the market. **(Cheng, Pao L., and M. King Deets. 1971)** According to which, given all accessible information, the current prices are the finest forecasters of an event's results. The only important predictor of the eventual result, in specific, should be the most new observed-value. **(Richard, Mark, & Jan Vecer, 2021)**. The Cogency of the EMI & RW Theory have been argumentative. Therefore, with the arrival of the arithmetical & smart finance, & behavioral finance, economists have tried to demonstrate another theory referred to as the incompetent market hypotheses, which states that financial markets are not always said to be effective markets. Market futility has life due to market psychology, transaction amount, information asymmetries, & human emotions. **(Asadi et al. 2012)**. Precise modeling needed taking into account external factors that is inclusive of recession or expansion periods & high or low volatility durations influenced by cyclical & other short-term differentiations in combined demand. **(Atsalakis, George S, 2009b)**. According to the FMH, markets are balanced by matching the demand & supply of investors' investment range, whereas the EMH supposes that markets are in stasis. **(Dar et al, 2017)**. Our study is advantageous to stock traders, brokers, corporations, investors, & the government, as well as financial institutions, depositors, and banks. Victorious AI-Based models can guide stock traders, brokers & investors in accomplishing huge gains that formerly appeared unfeasible. When financial markets become more anticipated, more investors will invest with high confidence, permitting businesses to raise extra funds to repay debts, pioneer new goods, & expand operations. As a consequence, consumer & corporate confidence will multiply, which will ameliorate the boarder economy. **(Muller Sebastian, 2019)**. This review designed a deep reinforcement learning based stock trading system by usage of technical evaluation indicators. The model embodied technical barometers to assist trading decisions & enhance profitability. **(Choudhury, B., Shamsuddin, A., & Sarkar, S. 2021)**. This review aimed at deep learning-based stock market forecasts by making use of financial news & social media. The study investigated the application of news & social media data in blending with deep learning techniques to increase forecasting exactness. **(Neuhierl Andreas and Michael Weber, 2017)** Depositories will also see an accelerate in business as a result of the enlarged investors base. Enhanced investment in financial markets results in raised tax collections, which aid the government. The bulk of active traders & investors are scared of trading & investing in financial markets because they are shortfall of the ability to properly forecast stock values because of market volatility. **(Smales, 2017)**. As a consequence, they need to cultivate an outstanding forecasting model to inculcate investor trust & make huge profits. **(Hao and Gao, 2020)**. In Addition, the literature on the utilization of artificial intelligence & soft computing strategies for stock market forecasting is yet to grow a pinpoint predictive model. **(Zhou et al, 2019)**. This review gave a stock market forecast approach based on deep learning ensemble techniques. The study integrated multiple deep learning models to make an ensemble for improvised forecasting performance. **(Peng, J., Li, D., & Haung, D. 2022)**. This review put forward a novel deep learning design called Deep Training for stock market trading. The model intended to upgrade trading decisions by combining different deep learning strategies. **(Li, Y., Wu, Z., & Wang, Q, 2023)**.

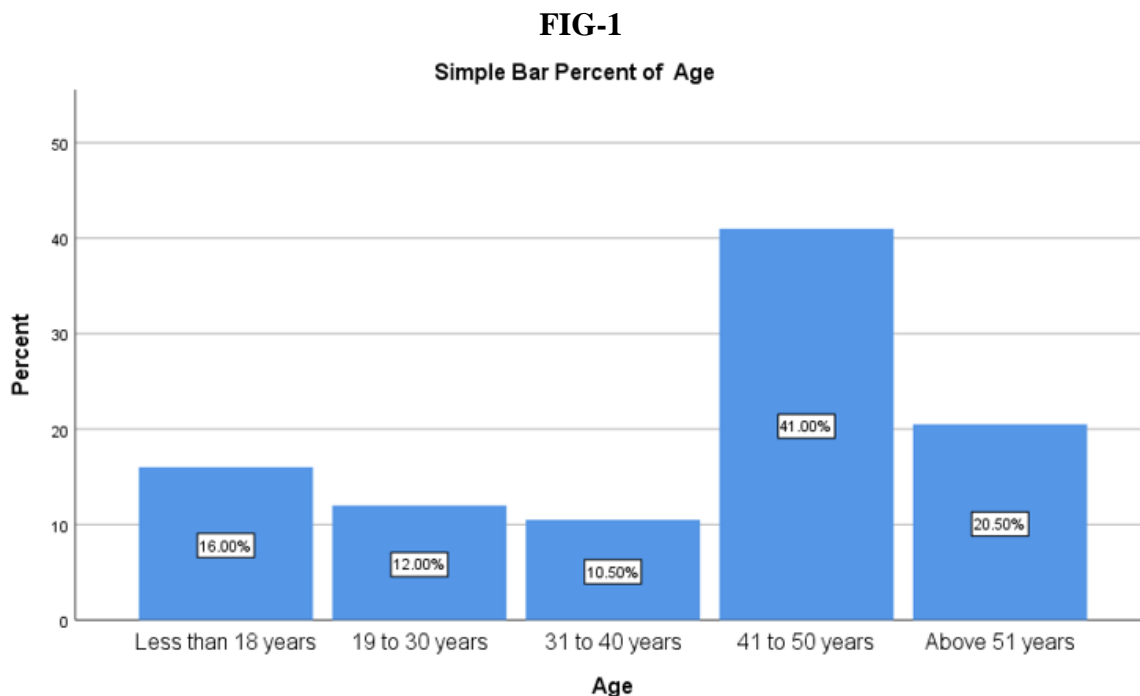
METHODOLOGY

The Research Method used here is the Empirical Research Method. A total of **200** responses are collected.

A Questionnaire was prepared in the Google Forms & it was emailed to my Friends, Relatives & Families. They are requested by the researcher to forward the link to their closest ones. The responses were collected from the people living inside Tamil Nadu such as Poonamallee, Anna Nagar etc as well as other parts of India. The Questions are AI Techniques are only used to analyze data in stock market trading, AI has the potential to be a valuable tool for stock market analysis, AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions, The Potential downside of using AI in stock Trading or market & Rate the Scale 1-10 “The use of AI in stock market trading has the potential to significantly improve market efficiency & trading outcomes”. Their responses were collected by the researcher by using the SPSS Software. The Independent variables are Age, Gender, Place of Residence, Educational Qualification, Occupation & Marital Status & the Dependent variables are AI Techniques are only used to analyze data in stock market trading, AI has the potential to be a valuable tool for stock market analysis, AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions, The Potential downside of using AI in stock Trading or market & Rate the Scale 1-10 “The use of AI in stock market trading has the potential to significantly improve market efficiency & trading outcomes”. The tools used in this research are Simple Bar Graph, Clustered Bar Graph, One-Way Anova, Chi-Square, Means Plot & Independent Sample T-Test respectively.

RESULTS & INTERPRETATIONS

SIMPLE BAR GRAPH

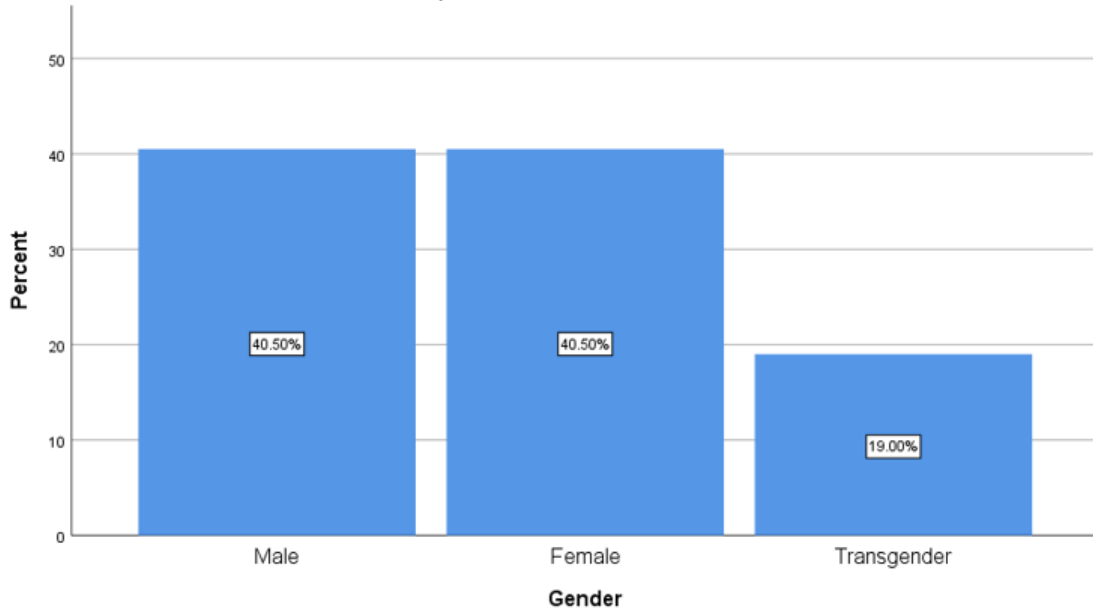


LEGEND: Fig 1 clearly shows about the % of people who have responded to the Questionnaire in relation to their respective age.

SIMPLE BAR GRAPH

FIG-2

Simple Bar Percent of Gender

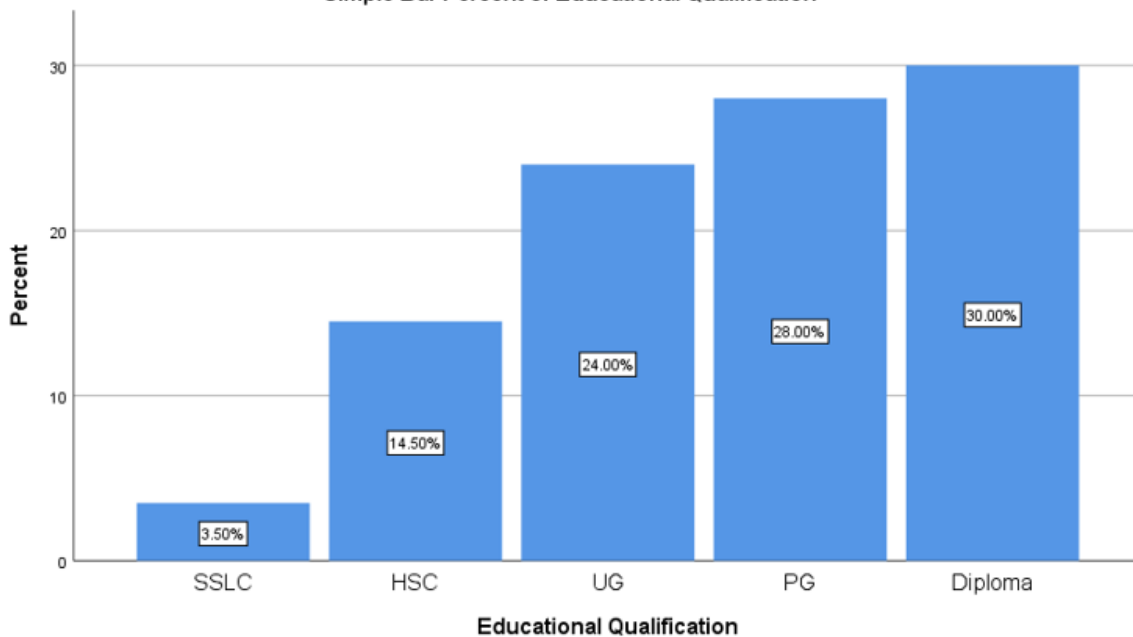


LEGEND: Fig 2 clearly shows about the % of people who have responded to the Questionnaire in relation to their respective gender.

SIMPLE BAR GRAPH

FIG-3

Simple Bar Percent of Educational Qualification

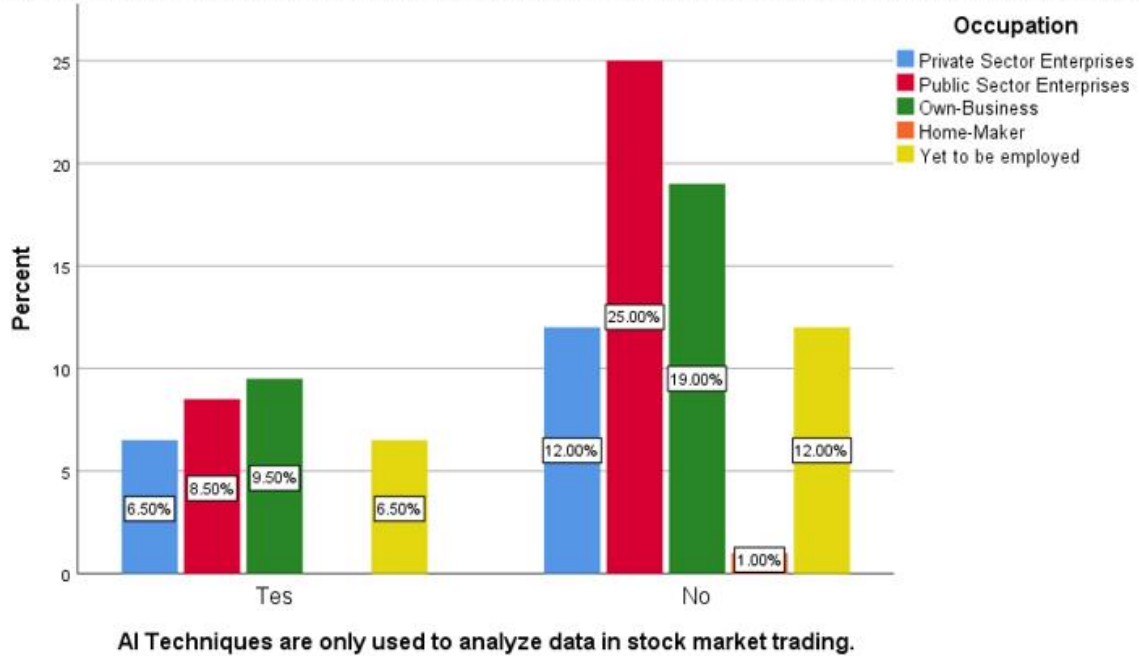


LEGEND: Fig 3 clearly shows about the % of people who have responded to the Questionnaire in relation to their respective educational qualification.

CLUSTERED BAR GRAPH

FIG-4

Clustered Bar Percent of AI Techniques are only used to analyze data in stock market trading. by Occupation

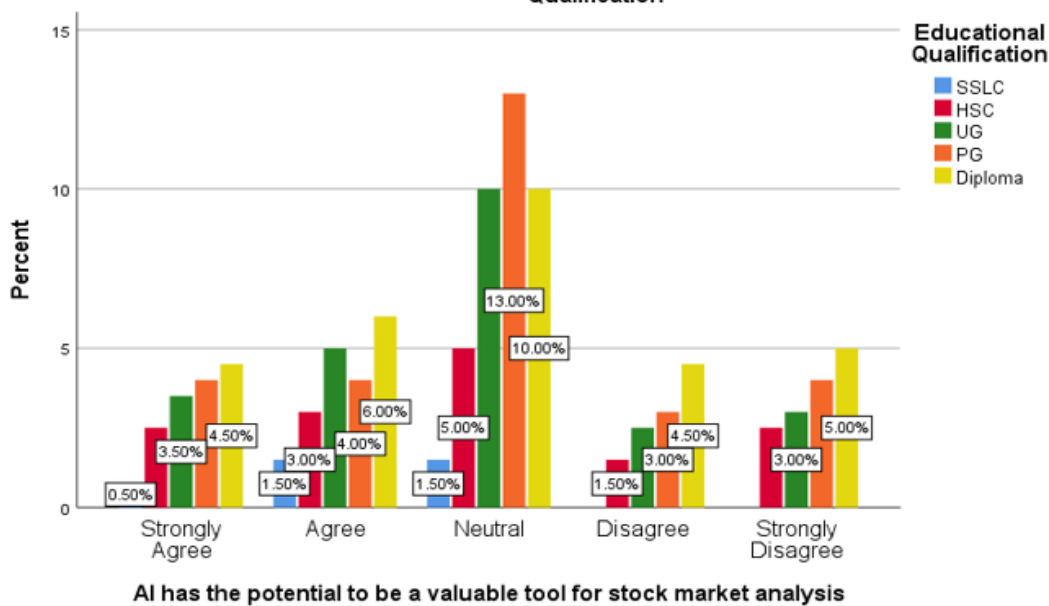


LEGEND: Fig 4 clearly shows about the % of people who have responded to the question of AI Techniques are only used to analyze data in stock market trading in relation to their respective Occupation.

CLUSTERED BAR GRAPH

FIG-5

Clustered Bar Percent of AI has the potential to be a valuable tool for stock market analysis by Educational Qualification

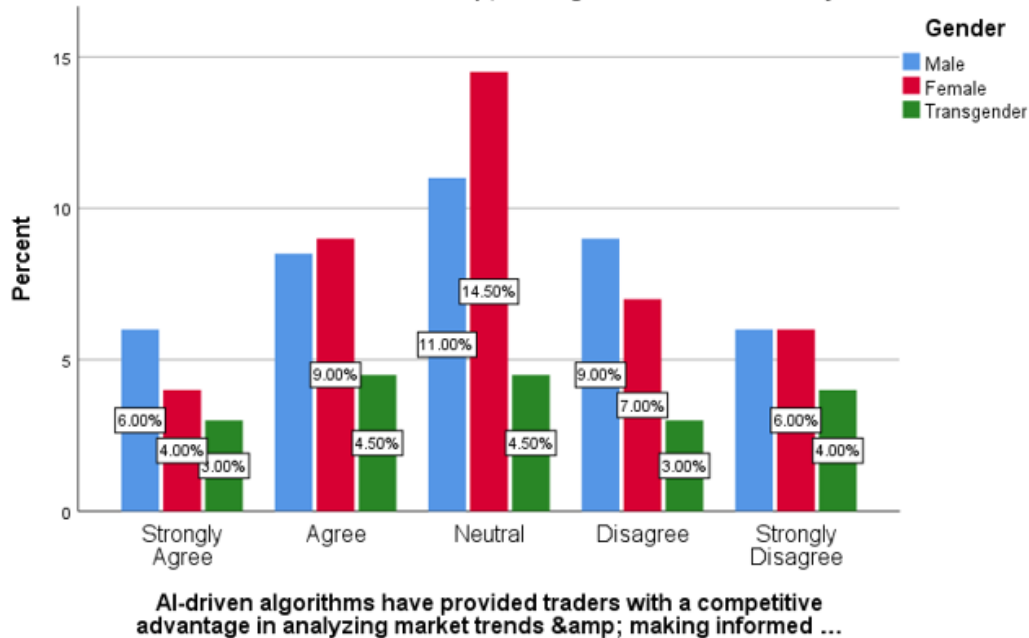


LEGEND: Fig 5 clearly shows about the % of people who have responded to the question of AI has the potential to be a valuable tool for stock market analysis in relation to their respective Educational Qualification.

CLUSTERED BAR GRAPH

FIG-6

Clustered Bar Percent of AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions. by Gender

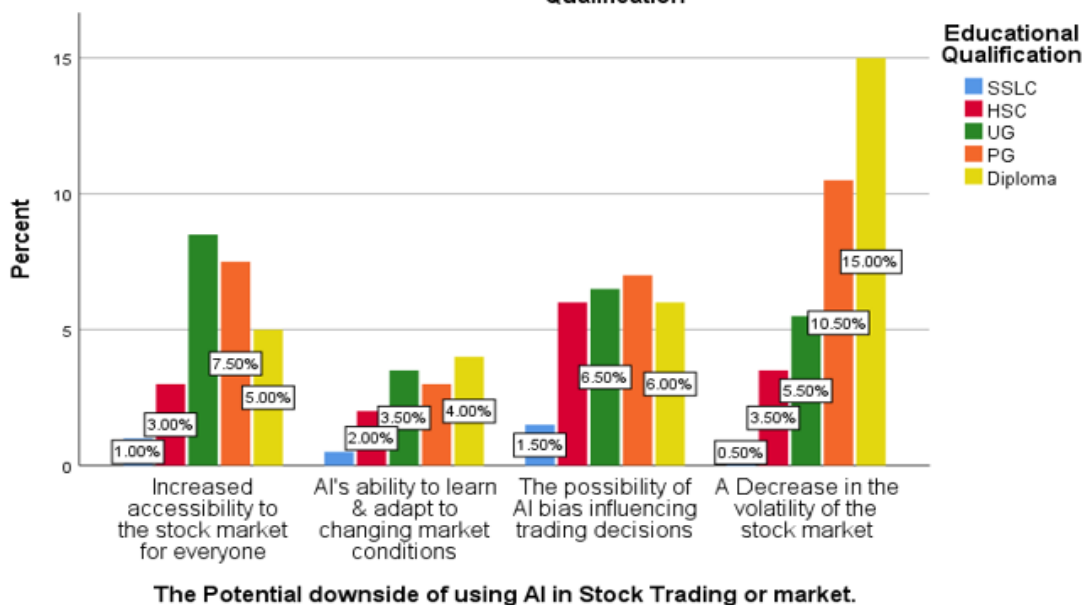


LEGEND: Fig 6 clearly shows about the % of people who have responded to the question of AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions in relation to their respective Gender.

CLUSTERED BAR GRAPH

FIG-7

Clustered Bar Percent of The Potential downside of using AI in Stock Trading or market. by Educational Qualification



LEGEND: Fig 7 clearly shows about the % of people who have responded to the question of The potential downside of using AI in stock trading or market in relation to their respective Educational Qualification.

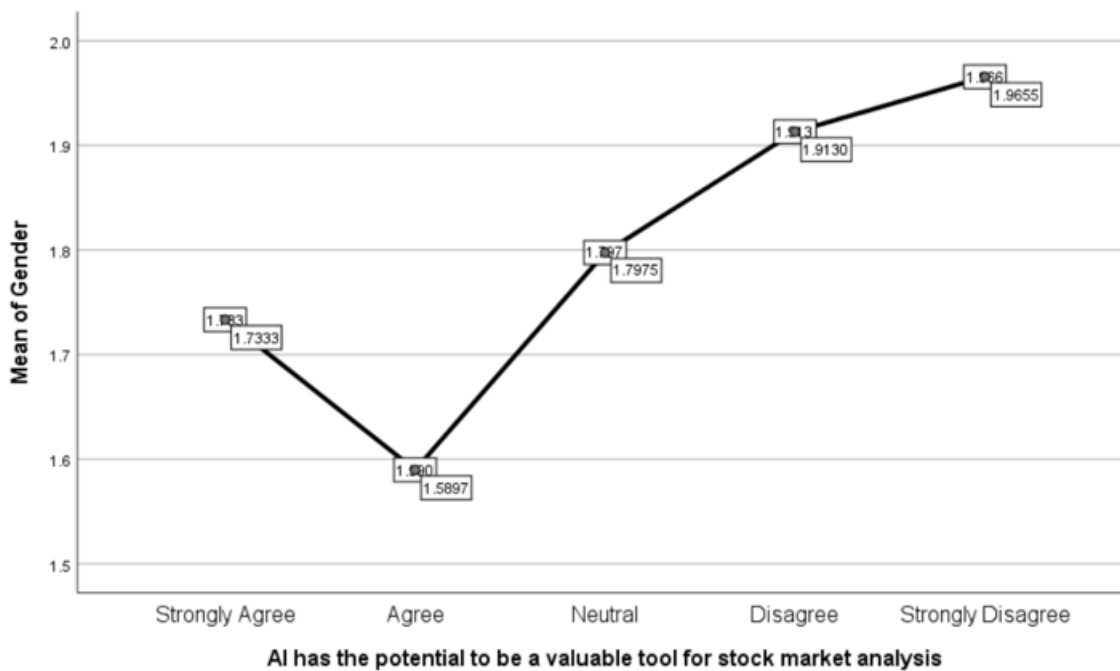
ONE-WAY ANOVA

FIG-8

AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.174	4	.543	.340	.851
Within Groups	311.646	195	1.598		
Total	313.820	199			

MEANS PLOT



INFERENCES: The Null Hypothesis is Rejected. So, there is a difference between the question of AI has the potential to be a valuable tool for stock market analysis & people’s respective gender. So, there is a significant relationship between the two variables.

CHI-SQUARE TESTS

FIG-9

AI Techniques are only used to analyze data in stock market trading. * Age

		Age					Total
		Less than 18 years	19 to 30 years	31 to 40 years	41 to 50 years	Above 51 years	
AI Techniques are only used to analyze data in stock market trading.	Tes	12	10	6	24	10	62
	No	20	14	15	58	31	138
Total		32	24	21	82	41	200

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.919 ^a	4	.571
Likelihood Ratio	2.874	4	.579
Linear-by-Linear Association	2.317	1	.128
N of Valid Cases	200		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.51.

Null Hypothesis (H0): There is a significant association between the Age & AI Techniques are only used to analyze data in stock market trading.

Alternate Hypothesis (H1): There is no significant association between the Age & AI Techniques are only used to analyze data in stock market trading.

RESULTS

In **Fig 1**, From the Above Simple Bar Graph, we can understand that the people who are between the age group of 41 to 50 years have responded more to the questionnaire in more numbers than people belonging to other age groups. Since, the % of people who are less than 18 years is 16.00%, % of people who are in between 19-30 years is 12.00%, % of people who are in between 31-40 years is 10.50%, % of people who are in between 41-50 years is 41.00% & % of people who are above 51 years is 20.50% respectively. In **Fig 2**, From the above simple bar graph, we can understand that both male & female have responded to the questionnaire equally than transgender gender. Since, the % of people who are males are 40.50%, % of people who are females are 40.50% & % of people who are transgender are 19.00% respectively. In **Fig 3**, From the above Simple Bar Graph, We can understand that the people whose educational qualification is Diploma have responded to the questionnaire in more numbers than people with other educational qualifications. The % of people whose educational qualification is SSLC is 3.50%, % of people whose educational qualification is HSC is 14.50%, % of people whose educational qualification is UG is 24.00%, % of people whose educational qualification is PG is 28.00% & % of people whose educational qualification is Diploma is 30.00% respectively. In **Fig 4**, From the above Clustered Bar Graph, we can understand that many people had said no as a majority opinion to the question of AI Techniques are only used to analyze data in stock market trading than other opinions. The % for option yes as people whose occupation is private sector enterprises is 6.50%, % for option yes as people whose occupation is public sector enterprises is 8.50%, % for option yes as people whose occupation is own-business is 9.50%, % for option yes as people whose occupation is home-maker is 0.0% & % for option yes as people whose occupation is yet to be employed is 6.50% respectively & % for option no as people whose occupation is private sector enterprises is 12.00%, % for option no as people whose occupation is public sector enterprises is 25.00%, % for option no as people whose occupation is own-business is 19.00%, % for option no as people whose occupation is home-maker is 1.00% & % for option no as people whose occupation is yet to be employed is 12.00% respectively. In **Fig 5**, From the above Clustered Bar Graph, we can understand that many people had a neutral opinion with regard to the question of AI has the potential to be a more valuable tool for stock market analysis than other opinions. The % for strongly agree as people whose educational qualification is SSLC is 0.50%, % for option strongly agree as people whose educational qualification is HSC is 2.00%, % for option strongly agree as people whose educational

qualification is UG is 3.50%, % for option strongly agree as people whose educational qualification is PG is 4.00% & % for option strongly agree as people whose educational qualification is Diploma is 4.50% respectively. The % for option agree as people whose educational qualification is SSLC is 1.50%, % for option agree as people whose educational qualification is HSC is 3.00%, % for option agree as people whose educational qualification is UG is 5.00%, % for option agree as people whose educational qualification is PG is 4.00% & % for option agree as people whose educational qualification is Diploma is 6.00% respectively. The % for option neutral as people whose educational qualification is SSLC is 1.50%, % for option neutral as people whose educational qualification is HSC is 5.00%, % for option neutral as people whose educational qualification is UG is 10.00%, % for option neutral as people whose educational qualification is PG is 13.00% & % for option neutral as people whose educational qualification is Diploma is 10.00% respectively. % for option disagree as people whose educational qualification is SSLC is 0.00%, % for option disagree as people whose educational qualification is HSC is 1.50%, % for option disagree as people whose educational qualification is UG is 2.50%, % for option disagree as people whose educational qualification is PG is 3.00% & % for option disagree as people whose educational qualification is Diploma is 4.50% respectively. The % for option strongly disagree as people whose educational qualification is SSLC is 0.00%, % for option strongly disagree as people whose educational qualification is HSC is 2.50%, % for option strongly disagree as people whose educational qualification is UG is 3.00%, % for option strongly disagree as people whose educational qualification is PG is 4.50% & % for option strongly disagree as people whose educational qualification is Diploma is 5.00% respectively. In **Fig 6**, From the above Clustered Bar Graph, we can understand that many people have said a neutral opinion with regard to the question of AI-Driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions than other opinions. The % for option strongly agree as people whose gender is male is 6.00%, % for option strongly agree as people whose gender is female is 4.00% & % for option strongly agree as people whose gender is transgender is 3.00% respectively. The % for option agree as people whose gender is male is 8.50%, % for option agree as people whose gender is female is 9.00% & % for option agree as people whose gender is transgender is 4.50% respectively. % for option neutral as people whose gender is male is 11.00%, % for option neutral as people whose gender is female is 14.50% & % for option neutral as people whose gender is transgender is 4.50% respectively. % for option disagree as people whose gender is male is 9.00%, % for option disagree as people whose gender is female is 7.00% & % for option disagree as people whose gender is transgender is 3.00% respectively. The % for option strongly disagree as people whose gender is male is 6.00%, % for option strongly disagree as people whose gender is female is 6.00% & % for option strongly disagree as people whose gender is transgender is 4.00% respectively. In **Fig 7**, From the above Clustered Bar Graph, we can understand that many people have said a decrease in the volatility of the stock market with regard to the question of the potential downfall of using AI in stock trading or market than other opinions. The % for the question of increased accessibility to the stock market for everyone as people whose educational qualification is SSLC is 1.00%, % for the question of increased accessibility to the stock market for everyone as people whose educational qualification is HSC is 3.00%, % for the question of increased accessibility to the stock market for everyone as people whose educational qualification is UG is 8.00%, % for the question of increased accessibility to the stock market for everyone as people whose educational qualification is PG is 7.50% & % for the question of increased accessibility to the stock market for everyone as people whose educational qualification is Diploma is 5.00% respectively. The % for the question of AI's ability to learn & adapt to changing market conditions as

people whose educational qualifications is SSLC is 1.50%, The % for the question of AI's ability to learn & adapt to changing market conditions as people whose educational qualifications is HSC is 2.00%, The % for the question of AI's ability to learn & adapt to changing market conditions as people whose educational qualifications is UG is 3.50%, The % for the question of AI's ability to learn & adapt to changing market conditions as people whose educational qualifications is PG is 3.50% & The % for the question of AI's ability to learn & adapt to changing market conditions as people whose educational qualifications is Diploma is 4.00% respectively. The % for the question of the possibility of AI bias influencing trading decisions as people whose educational qualification is SSLC is 1.50%, The % for the question of the possibility of AI bias influencing trading decisions as people whose educational qualification is HSC is 6.00%, The % for the question of the possibility of AI bias influencing trading decisions as people whose educational qualification is UG is 6.50%, The % for the question of the possibility of AI bias influencing trading decisions as people whose educational qualification is PG is 7.00% & The % for the question of the possibility of AI bias influencing trading decisions as people whose educational qualification is Diploma is 6.00% & The % for question of a decrease in the volatility of the stock market as people whose educational qualification is SSLC is 0.50%, The % for question of a decrease in the volatility of the stock market as people whose educational qualification is HSC is 3.50%, The % for question of a decrease in the volatility of the stock market as people whose educational qualification is UG is 5.50%, The % for question of a decrease in the volatility of the stock market as people whose educational qualification is PG is 10.50% & The % for question of a decrease in the volatility of the stock market as people whose educational qualification is Diploma is 15.00% respectively. In **Fig 8**, The Null Hypothesis is Rejected. So, there is a difference between the question of AI has the potential to be a valuable tool for stock market analysis & people's respective gender. So, there is a significant relationship between the two variables. In **Fig 9**, **Null Hypothesis (H0)**: There is a significant association between the Age & AI Techniques are only used to analyze data in stock market trading.

Alternate Hypothesis (H1): There is no significant association between the Age & AI Techniques are only used to analyze data in stock market trading.

DISCUSSIONS

In **Fig 1**, The people who are between 41-50 years have responded to the questionnaire in more numbers than other age group people. This is because the people who are between 41-50 years have more knowledge about stock market trading & AI power in it. As these people are those who like to invest more for the future needs & they are also aware of the current price of a company in stocks etc & The AI tools knowledge will also be more in them as they try their best to find out the real & quick success in stock trading arena as compared to other age groups. Since, people who are less than 18 years have very less time in knowing about the AI & stock market as parents also restrict them from knowing these at that age as they also will be burdened with so many pressure especially the education & school pressure & people of other age groups also face the difficulty of stress in the form of jobs, colleges which keeps them always busy in that in order to cement a better future for themselves & their families which leaves with no scope of investing their money in stock market trading. In **Fig 2**, As a surprising outcome both male & female have responded in equal manner as these genders now know better about the use & the impact of artificial intelligence on stock market trading since the working women nowadays starts to invest to get additional income & for the future of their children. But on the other hand, transgenders have no say in this because they are finding it very difficult to live in this society because of their certain hormonal changes. So, for

them the concept of the stock market is very far from even being imagined. In **Fig 3**, The people who are pursuing Diploma as their educational qualification have responded to the questionnaire more than other people with different educational qualifications. This is because the people who are pursuing Diploma are under a circumstance that they have to earn income to run the family. As of now there is that much value given to the diploma or to the person who has completed the diploma. In other cases the scenario is quite different as the people who are studying the SSLC, HSC or UG will get enough money from their parents pocket to live a sophisticated life & also get some additional benefits. But, it is very unique as they will be forced to get their things done with their own money. That is the time where people start investing in stocks & shares to get better returns. In **Fig 4**, Most people have responded to the question that AI techniques are only used to analyze data in stock market trading by stating no option since according to them the AI techniques even though they have the capacity to analyze the data in stock market trading. There are also chances for obtaining erroneous data which may lead to loss of lakhs of money being invested by the people within a minute & one more reason is that AI is not used only in stock trading but also in other fields but it is very sensitive to being utilized in stock market trading since there are lots of big players involved in the game of stock trading. In **Fig 5**, Most people have responded to the question that AI has the potential to be a valuable tool for stock market analysis by stating a neutral opinion as according to them Artificial Intelligence is a valuable tool but has its own impacts in examination. Since, there is no any written guarantee it goes through stock market data very well because there is a heavy chance of fraudulent activities being conducted by the companies itself by the way of advertisements & other mediums to influence the investors to invest in their companies. Moreover the data quality & availability as AI models majorly depend on the quality & amount of data they are taught on. Inconsistent, insufficient data can also lead to false predictions. Historical data may not always be symbolic of future performances, particularly in fast changing markets. In **Fig 6**, Most people have responded to the question that AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions by stating a neutral opinion because many people think that privacy concerns a major concern since AI Algorithms often need huge volume of data, which has the possibility of questions regarding the privacy & data security. Misuse or mishandling of stock information can result in personal data breaches regarding the investor & spoilage of trust. In **Fig 7**, Most people said that a decrease in the volatility of the stock market with regard to the question of the potential downfall of using AI in stock trading or market. As many people said this because there will be an improved confidence in investors since lower volatility usually leads to increased investor confidence. When the prices are balanced, investors are more probably to feel protected about their investments, which can result in accelerated participation in the market & lower risk premiums as lessened volatility often results in lower risk premiums. Investors need less compensation for taking on risk when the markets are balanced, which can decrease the cost of equity for companies & reduce bond yields. In **Fig 8**, The Null Hypothesis is Rejected. So, there is a difference between the question of AI has the potential to be a valuable tool for stock market analysis & people's respective gender. So, there is a significant relationship between the two variables. In **Fig 9**, **Null Hypothesis (H0)**: There is a significant association between the Age & AI Techniques are only used to analyze data in stock market trading. **Alternate Hypothesis (H1)**: There is no significant association between the Age & AI Techniques are only used to analyze data in stock market trading.

LIMITATIONS

One of the Limitations of this survey is its size of 200 responses which is not enough to draw conclusions for the entire population of 1,30 Crores in the country & since their total population count differs drastically & in that survey 50% of the population are of young age & middle-aged people which makes it even more difficult for the researcher for extrapolation.

SUGGESTIONS

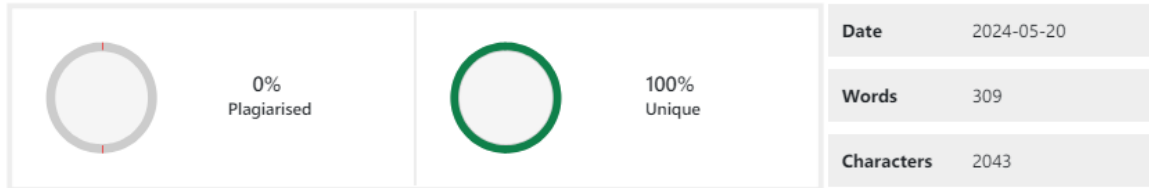
As far as this research is concerned it speaks about Artificial Intelligence & its influencing power on stock market trading. AI has a very important role to play in the field of stock market trading as AI Algorithms examine huge volumes of historical & real-time data to forecast future market trends & price motions. Machine learning models can pinpoint patterns & relationships that are visible through conventional analysis. As, the AI constantly monitors & adapts portfolios to maximize returns based on changing market demands. It can stabilize risk & reward by rebalancing assets allotment in real time. But on other hand it would create ruckus in data being provided to the people for understanding may be overfitting as AI models specifically, complex ones can overfit to historical data meaning that they perform well on previous data but poorly on new, unseen data. This reduces the efficiency in real-world trading. There is also a need for stringent rules, laws & regulations to control & regulate the AI use & impact on stock market trading outcomes as many people starting from ordinary people to big business magnets investing huge money with the aim of getting better returns. Even though society is progressing with time, new technologies arise in different fields including trade markets in order to make people's lives easy & tension-free. So, it is important for the general public to understand the risks & returns before getting into AI-based stock market trading & to use them in a proper manner to leave some investments for the future generations as everyone know that money has now become the life of every person to stand their own feet in this helpless society in which we are said to live our life. So, money should not be lost without knowledge of the said holder in any manner.

CONCLUSIONS

AI is considered to be an important tool that is being used in various industries including stock market trading. AI makes the work of humans much easier in one way but at the same time it may be difficult for the humans in the near future as there would be no employment available for them to perform. Stock market trading is a fast growing & changing business as it is purely based on various participants like individual investors, institutional investors, market makers, stock exchanges & regulatory bodies. As a conclusion, AI is deeply influencing the above-mentioned business in various domains as it helps in promoting the stock market trading by improving the market prediction, by automated trading systems, real-time analysis, complex data-blending etc. Since, this business involves huge amounts of money being invested. So, there is a need for the participants to have a better understanding of the market volatility to get better returns & to properly invest at a good point of time. The world is under the need to run after technology to get to a better stage. So, it is our general public & government responsibility to make sure that these AI & related technologies are not being misused & utilized in a wrong manner for investment which is illegal. If done so then a hefty price has to be paid by mankind as the time passes by.

PLAGIARISM REPORT

PLAGIARISM SCAN REPORT



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ABSTRACT

Artificial Intelligence is the replica of human intelligence operations by machines, particularly computer systems. Special applications of AI is inclusive of expert systems, natural language processing, speech identification & machine vision. Stock trading engages in buying & selling of shares of a certain company. AI Trading is the utilization of Artificial Intelligence in the trading arena to examine market data, obtain investment notions & construct portfolios. AI Trading touches on the application of algorithms & machine learning strategies to dissect large amounts of data & pinpoint patterns & trends in the market. The current statistics have clearly shown that the India AI market size will reach \$680 Million in 2022 & further it is predicted to grow to about \$ 3,935.5 Million by 2028, showing a growth rate (CAGR) of 33.28% during 2023-2028. The advantages of AI Trading are risk management, algorithmic trading, better forecasting, fraud detection & lower costs. The top AI stocks to invest in are Affle, Bosch, Cyient, Nifty 50, Tata Elxsi & Persistent Systems. My objective is to evaluate the current AI Technologies in stock market trading, To examine the impacts of AI on market efficiency, To understand the percentage of people who are purchasing AI stocks in the trading market. To identify the initiatives taken by the government to safeguard AI Trading & To address the key challenges & limitations on the use of AI trading in the stock market. The author has collected 202 samples. The researcher undertaken the empirical research method. The scope of having a strict & good AI trading platform for investors & traders is purely in the hands of the government. AI Trading is very complex since there are high chances of fraud to occur & other problems are inevitable in nature in this type of stock

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KEYWORDS

Artificial Intelligence, Stock Market Trading, Government, Data, AI Trading Algorithms.



May 20, 2024

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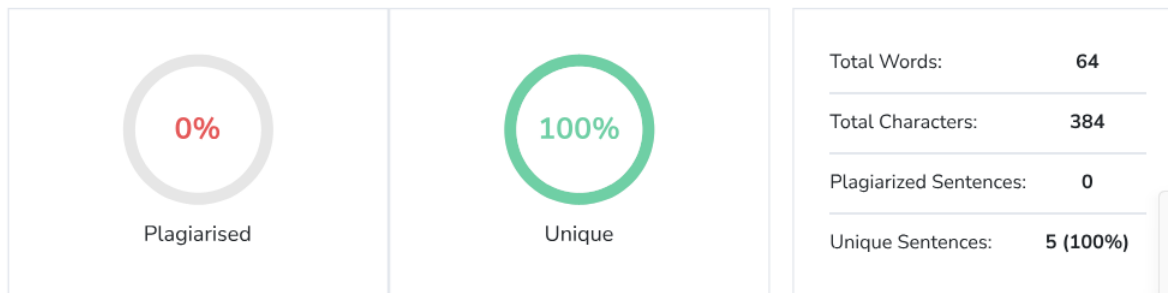
Speak Time:
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Let me start my research paper with a fantastic quote on harnessing the power of AI in stock market trading "With ML & Deep Learning, we can now look at all these unstructured data sets & mine lots of trading insights which we would not do before". AI Trading refers to wide usage of artificial intelligence, prognostic analysis & machine learning to break down historical market & stock statistics, obtain investment ideas, construct portfolios & automatically buy & sell stocks. There are various impacts of AI on market efficiency are information processing & study, Trading decision-making & Risk Management & Portfolio development. The key challenges & limitations on the use of AI trading in the stock market are Human interference & judgment, market changing-environment, operational confrontations. The Historical background of AI power on stock market trading as early as 1960-1970s with the introduction of computers financial markets began to change as computational models were utilized for easy figuring & record-keeping as in mid-1970s establishment of Black-Scholes models for various option pricing, as that marked a very important step in quantitative finance. This period also saw the emergence of electronic trading systems like NASDAQ, which entered the market in 1971. The Government Initiatives & acts are SEBI Act, 1992 as this act gives powers to SEBI to control the securities market in India.

as that marked a very important step in quantitative finance. This period also saw the emergence of electronic trading systems like NASDAQ, which entered the market in 1971. The Government Initiatives & acts are SEBI Act, 1992 as this act gives powers to SEBI to control the securities market in India. SEBI also formulates various policies to be applied to AI & algorithmic trading in order to see to it that fair practices & safeguard investors interests & National Strategy on AI. The factors affecting the power of AI on the stock market trading are data accessibility & quality, algorithmic intricacy, risk management & regulation & ethics & bias. The current trends with regard to power of AI on the stock market trading are Deep Learning & Neural Networks, Natural Language Processing, Explainable AI & Robotic Process Automation etc. The comparison between different countries with regard to the power of AI in stock market trading is in United States the regulatory framework is Securities & Exchange Commission as it closely watches AI use



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OBJECTIVES

- To evaluate the current AI Technologies in stock market trading.
- To examine the impacts of AI on market efficiency.
- To understand the percentage of people who are purchasing AI stocks in the trading market.
- To identify the initiatives taken by the government to safeguard AI Trading.
- To address the key challenges & limitations on the use of AI trading in the stock market.



May 20, 2024

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Words:286

Sentences:12

Speak Time:
3 Min

Excluded URL

None

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The Research Method used here is the Empirical Research Method. A total of 200 responses are collected. A Questionnaire was prepared in the Google Forms & it was emailed to my Friends, Relatives & Families. They are asked by the researcher to share the link to their nearest ones. The responses were collected from the people living inside Tamil Nadu such as Poonamallee, Anna Nagar etc as well as other parts of India. The Questions are AI Techniques are only used to analyze data in stock market trading, AI has the potential to be a valuable tool for stock market analysis, AI-driven algorithms

collected from the people living inside Tamil Nadu such as Poonamallee, Anna Nagar etc as well as other parts of India. The Questions are AI Techniques are only used to analyze data in stock market trading, AI has the potential to be a valuable tool for stock market analysis, AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions, The Potential downside of using AI in stock Trading or market & Rate the Scale 1-10 "The use of AI in stock market trading has the potential to significantly improve market efficiency & trading outcomes". Their responses were collected by the researcher by using the SPSS Software. The Independent variables are Age, Gender, Place of Residence, Educational Qualification, Occupation & Marital Status & the Dependent variables are AI Techniques are only used to analyze data in stock market trading, AI has the potential to be a valuable tool for stock market analysis, AI-driven algorithms have provided traders with a competitive advantage in analyzing market trends & making informed decisions, The Potential downside of using AI in stock Trading or market & Rate the Scale 1-10 "The use of AI in stock market trading has the potential to significantly improve market efficiency & trading outcomes". The tools used in this research are Simple Bar Graph, Clustered Bar Graph, One-Way Anova, Chi-Square, Means Plot & Independent Sample T-Test respectively.

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