ROLE OF TECHNOLOGY IN STOCK MARKET IN COIMBATORE CITY

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ABSTRACT

The integration of technology into the stock market has revolutionized trading, investment strategies, and market efficiency. Advanced technologies such as algorithmic trading, artificial intelligence, big data analytics, and blockchain have significantly enhanced market operations, reducing transaction costs and increasing liquidity. High-frequency trading (HFT) allows for rapid execution of trades, while AI-driven predictive analytics provide investors with data-driven insights. High-frequency trading (HFT) leverages complex algorithms to execute trades within milliseconds, significantly impacting market liquidity and volatility.

 Keywords: Technology in trading, Algorithmic trading, High frequency trading

INTRODUCTION

The stock market, as a vital component of the global economy, has undergone significant transformations over the past few decades, largely driven by the rapid advancements in technology. From the introduction of electronic trading platforms to the development of complex algorithms and artificial intelligence, technology has revolutionized the way financial markets operate. The increasing reliance on technology in the stock market has also raised important questions about market stability, security, and the ethical implications of automated decision-making. With technology continuing to evolve at a rapid pace, understanding its role and impact on the stock market has become crucial for investors, regulators, and market participants alike. This project explores the various ways in which technology is shaping the stock market, examining both the benefits and the challenges it presents.

STATEMENT OF THE PROBLEM

The integration of technology into the stock market has significantly transformed how financial markets operate, introducing new tools, systems, and strategies that enhance trading efficiency and market accessibility. However, the rapid pace of technological advancement has also raised concerns regarding its potential risks and consequences. While technologies such as algorithmic trading, artificial intelligence, and market analysis, they also bring challenges related to market volatility, security vulnerabilities, and the potential for market manipulation.

SCOPE OF THE STUDY

The scope of the study on the role of technology in the stock market will focus on examining how technological advancements have influenced trading practices, market efficiency, and investor behaviour. The study will explore key areas such as the adoption of algorithmic trading, high-frequency trading, and artificial intelligence in decision-making processes. It will also investigate the role of online trading platforms, mobile applications, and data analytics in democratizing access to the stock market for individual investors.

OBJECTIVE OF THE STUDY

1. To promote awareness of technology's role in share market.

2. To identify the role of technology in creating an accessible stock market environment.

3. To enhance decision-making by examining investors' investment patterns through technological tools.

RESEARCH METHODOLOGY

The research methodology for exploring the role of technology in the stock market involves a systematic approach to gather and analyse data, ensuring a comprehensive understanding of the topic.

SOURCE OF DATA

1. **Primary data:** Primary data is collected through questionnaires, where groups are asked to share their opinions how it impacts their daily routines.
2. **Secondary data:** Secondary data is collected through academic journals and research papers.

AREA OF STUDY: The study was conducted in Coimbatore City, Tamilnadu.

SAMPLE SIZE: The sample size for this study is 150 respondents.

SAMPLE TECHNIQUE: The sampling technique used in this study is selective sampling technique.

LIMITATION OF THE STUDY

1. Research is conducted only in coimbatore city.
2. Limited amount of samples.
3. Advanced trading algorithms can create artificial demand, leading to price distortions.
4. Trading platforms are prime targets for cyberattacks, leading to data theft.

REVIEW OF LITERATURE

Manali Chatterjee, Titas Bhattacharjee, and Bijitaswa Chakraborty (2023)[1], in their study on **"Indian IPO: Systematic review and future research agenda"** the authors conduct a comprehensive review of 111 papers published between 2002 and 2021, focusing on the Indian Initial Public Offering (IPO) market. The authors find that majority of the research has focused on IPO performance whereas post-IPO performance needs critical attention as well. The authors develop a comprehensive framework and future research agenda based on their discussion.

Rashmi Ranjan Panigrahi, Meenakshee Dash, Zakir Hossen Shaikh, and Mohammad Irfan (2023)[2], explore the **"Advanced machine learning learning algorithms for complex financial application"** the transformative impact of technology, particularly machine learning (ML), on supply chain management (SCM) within the Indian industrial context. The authors highlight that the advent of the fourth industrial revolution has ushered in an era marked by digitization, artificial intelligence (AI), robotics, and advanced communication technologies. ML, as a subset of AI, offers automated systems capable of learning from historical data, thereby enhancing decision-making processes across various SCM functions.

Samriddhi Dhasmana and Sandeep Goel (2023)[3], in their study on **"The insidious hyperreality in financial markets"** indicate a significant disconnect between market valuations and actual company performance, suggesting that market prices are frequently unsubstantiated and do not accurately reflect true corporate value. This misalignment

underscores the necessity for investors to critically evaluate market information and for policymakers to implement regulations that enhance transparency and align market prices more closely with fundamental values.

Athul Kuriakose and Sajoy Pb (2022)[4], in their studious survey on **"Digital trans formation in the stockbroking industry and it's role in strong retail investors participation in the Indian stock market"** shows the proliferation of mobile investment applications has made stock market participation more accessible, offering user-friendly interfaces and real-time data, resulting in a significant increase in Demat accounts. The adoption of digital platforms has also reduced investment costs, with discount brokers leveraging technology to minimize operational expenses. The shift from traditional, telephone-based trading to digital trading platforms has further empowered retail investors with real-time trading capabilities and market analysis tools.

ANALYSIS AND INTERPRETATION

TABLE 4.1.1

Demographic factor of the Respondents

Category	Factors	No. of Respondents	Percentage
Gender	Male	84	56
	female	66	44
Age	18-25	91	60.7
	26-35	40	26.7
	36-45	13	8.7
	46-55	6	4
Education qualification	High school	10	6.7
	Under graduate	78	52
	Post graduate	52	34.7
	Other	10	6.7
Occupational status	Student	44	29.3
	Employee	53	35.3
	Self-employee	45	30
	Retired	6	4
	Others	2	1.3

Monthly income	Below 20000	38	25.3
	20000-50000	54	36
	50000-100000	40	26.7
	Above 100000	18	12
Total		150	100

Source: Primary Data

Interpretation

The table indicates that 56% of the respondents are male, 60.7% of the respondents are from the age group of 18-25 years, 52% of the respondent's educational qualification is up to Under graduate level, 35.3% of the respondents are employee, 36% of the respondent's monthly income is between 20000-50000.

TABLE 4.1.2

Accessibility of the respondent

S.No	Features	No. of Respondents	Percentage
1	User friendly mobile app	49	32.7
2	Lower transaction fees	57	38
3	Educational resources and tutorial	21	14
4	Automated trading tools	23	15.3
Total		150	100

Source: Primary Data

Interpretation

The above table indicates that, 38% of the respondents find lower transactions fees more accessible to use 32.7% of the respondents find user friendly app more accessible to use, 15.3% of the respondents finds automated trading tools more accessible to use and14% of the respondents finds educational resources and tutorial more accessible to use.

TABLE 4.1.3

Decision Making of the Respondents

S.No	Tools	No. of Respondents	Percentage
1	Data visualisation tool	43	28.7
2	AI powered investment recommendation	43	28.7
3	Historical trend analysis tool	43	28.7
4	Robo advisor for automated trading	21	14
	Total	150	100

Source: Primary Data

Interpretation

The above table indicates that 28.7% of the respondents uses Data visualisation tool, 28.7% of the respondents uses AI powered investment recommendation, 28.7% of the respondents uses Historical trend analysis tool and 14% of the respondents uses Robo advisor for automated trading.

TABLE 4.2.1

Satisfaction rating of ease of use of trading platform compared with how often individuals use technology to stay updated on stock market trends.

	Very satisfied	Satisfied	Not satisfied	Neutral	Total
Daily	1 (10)	3 (30)	3 (30)	3 (30)	10
Weekly	30 (34.09)	22 (27.5)	13 (14.77)	23 (26.1)	88
Rarely	13 (28.26)	12 (26.08)	9 (19.56)	12 (26.08)	46
Occasionally	3 (50)	1 (16.66)	0 (0)	2 (33.33)	6
Total	47	38	25	40	150

Chi-Square Tests

	Value	DF	Asymptotic Significance
Pearson Chi-Square	5.395[a]	9	0.799
Likelihood Ration	6.620	9	0.677
No. of respondents	150		

Source: Primary Data

Interpretation

Since p = 0.799 is much greater than 0.05, we accept the null hypothesis. This means there is no statistically significant association between the ease of use of trading platform and frequency of usage.

TABLE 4.2.2

Satisfaction rating of accessibility of individual investors compared with barriers existing in the stock market accessibility

	Very satisfied	**Satisfied**	**Not satisfied**	**Neutral**	**Total**
Lack of internet access in certain areas	20 (45.45)	20 (45.45)	0 (0)	4 (9.09)	44
Insufficient knowledge grading tool	24 (48)	22 (44)	1 (2)	3 (6)	50
High initial investment requirement	15 (36.58)	18 (43.09)	3 (7.31)	5 (12.19)	41
Language and technical complexity	2 (13.33)	7 (46.66)	3 (20)	3 (20)	15
Total	61	67	7	15	150

Chi-Square Tests

	Value	**DF**	**Asymptotic Significance**
Pearson Chi-Square	17.386[a]	9	0.043
Likelihood Ration	16.858	9	0.051
No. of respondents	150		

Source: Primary Data

Interpretation

Since p = 0.043 for the Pearson Chi-Square test is less than 0.05, we reject the null hypothesis. This means there is a statistically significant association between the accessibility of share market and barriers in stock market accessibility.

FINDINGS

- Majority 56% of the people are male members.
- Majority 60.7% of the respondents is from age group of 18-25 years.
- Majority 52% of the respondent's Under graduates.
- Most 35.3% of the respondents are Employee.

- Most 36% of the respondent's income is 20000-50000.

- Most 38% of the respondents find lower transactions fees more accessible to use.

- Most 28.7% of the respondents uses Data visualisation tool.

- P = 0.799 is much greater than 0.05, we accept the null hypothesis.

- P = 0.043 is less than 0.05, we reject the null hypothesis.

SUGGESTIONS

1.Introducing Algorithmic and High-Frequency Trading (HFT).

2. AI-powered predictive analytics help traders identify profitable opportunities and make data-driven investment decisions.

3.Promoting Cybersecurity and Risk Management in Digital Trading.

4. The rise of mobile trading applications and financial technology (FinTech) has made investing more accessible than ever.

CONCLUSION

Technology continues to shape the future of stock trading, making it faster, smarter, and more secure. From algorithmic trading and big data analytics to blockchain and mobile trading, innovations are enhancing efficiency and accessibility in financial markets. By balancing innovation with risk management and regulation, the stock market can continue evolving into a more efficient and globally accessible financial ecosystem.