

A STUDY ON USE OF TECHNOLOGY BY THE INVESTOR WHILE INVESTING IN CAPITAL MARKET

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Abstract:

This conceptual study examines the use of Artificial Intelligence (AI) by investors while investing in various avenues of the Indian capital market. The study explores how AI-enabled tools such as robo-advisors, predictive analytics, sentiment analysis, and algorithm-based platforms support investors in making informed investment decisions across equities, mutual funds, fixed-income securities, derivatives, and alternative investment options. It highlights the role of fintech applications and the regulatory framework provided by the Securities and Exchange Board of India (SEBI) in facilitating the adoption of AI-driven investment practices. The study also discusses the advantages of AI in enhancing efficiency, transparency, and risk management, while identifying key challenges related to digital literacy, data security, and over-reliance on automated systems. The paper concludes that AI serves as a supportive and transformative tool in the Indian capital market, with significant potential for sustainable and informed investment decision-making when combined with effective regulation and investor awareness.

Keywords: *Technology Adoption, Digital Trading Platforms, Investor Behaviour, FinTech in Capital Market, Online Investment Decisions*

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Introduction:

The use of technology by investors has fundamentally transformed the way capital market investments are planned, executed, and monitored. With the emergence of online trading platforms, mobile investment applications, and digital brokerage services, investors can now access stock exchanges, mutual funds, derivatives, and other financial instruments in real time. Technology enables investors to open demat and trading accounts digitally, place buy or sell orders instantly, track live market prices, and monitor portfolio performance from anywhere at any time. This convenience has reduced dependency on traditional brokers, minimized transaction delays, and significantly lowered costs, thereby encouraging greater participation of retail investors in the capital market.

Technology has also enhanced the quality of investment decision-making by providing investors with vast amounts of information and analytical tools.

Investors today rely on digital dashboards, technical charts, algorithm-based recommendations, robo-advisory services, and financial news platforms to analyse market trends and evaluate investment opportunities. Access to real-time data, research reports, company fundamentals, and predictive analytics allows investors to make informed and timely decisions. Additionally, the integration of artificial intelligence, big data, and machine learning has helped investors identify patterns, manage risks, and optimize portfolio diversification more effectively than traditional manual methods.

Furthermore, technology has improved transparency, security, and investor engagement in capital markets. Digital platforms offer secure transactions through encryption, two-factor authentication, and regulatory compliance mechanisms, which build trust among investors. Online grievance redressal systems, automated contract notes, and instant transaction

confirmations have increased transparency and accountability. Social media, investor forums, and fintech platforms also facilitate knowledge sharing and financial awareness, empowering investors to actively engage with markets. However, while technology provides speed and accessibility, it also demands adequate digital literacy and responsible usage to avoid issues such as over-trading, misinformation, and cyber risks.

The use of technology by investors has significantly reshaped investment practices in the capital market. Online trading platforms, mobile applications, and digital brokerage services allow investors to buy and sell securities instantly, access real-time market data, and manage their portfolios efficiently. Technology has reduced reliance on traditional intermediaries, lowered transaction costs, and increased speed and convenience in executing trades. Digital tools such as electronic Know Your Customer (e-KYC), online demat accounts, and automated payment systems have further simplified market participation, encouraging greater involvement of retail investors in capital markets.

In addition, technology supports informed investment decision-making by providing investors with advanced analytical tools and timely information. Investors use digital charts, technical indicators, robo-advisory services, and research platforms to analyse market trends and assess investment risks. Artificial intelligence, big data analytics, and algorithm-based recommendations help in portfolio diversification and risk management. Moreover, enhanced security features and transparent digital reporting systems have improved investor confidence. While technology has increased accessibility and efficiency, effective utilization depends on investors' digital literacy and awareness to avoid issues such as over-trading and exposure to cyber risks.

Review of Literature:

1. **Johri, A., Wasiq, M., Kaur, H., & Asif, M. (2023)**, In the research paper titled “Assessment of Users’ Adoption Behaviour for Stock Market Investment Through Online Applications.” The study concluded that investors’ adoption behaviour toward online share trading applications is significantly influenced by awareness, perceived benefits, reliability and safety, financial literacy, technical factors, and dependency on technology. All these determinants collectively increase investors’ willingness to use digital platforms for capital market investing, demonstrating the transformation of investor behaviour due to technological accessibility and control offered by online trading tools.
2. **Chong, L.-L., Ong, H.-B., & Tan, S.-H. (2021)**, In the research paper titled “Acceptability of Mobile Stock Trading Application: A Study of Young Investors in Malaysia.” This research found that attitude, perceived behavioural control, perceived benefits, and trust were all positively associated with young investors’ intentions to adopt mobile stock trading applications. The study showed that mobile technology acceptance models (TAM & TPB) effectively explain the determinants of mobile trading adoption, although perceived risk did not significantly impact adoption intention.
3. **Prakash, N., Rao, A., Ojha, A. K., Singh, A., & Shukla, D. (2025)**, In the research paper titled “Analysis of Online Trading Apps and Their Impact on Stock Market Participation.” The paper concluded that online trading platforms significantly lower barriers to stock market participation by reducing costs and improving accessibility. However, it also highlighted behavioural risks such as impulsive trading and

increased market volatility, suggesting that while technology enhances retail investor engagement, it brings new regulatory and behavioural challenges that need attention.

4. **Shivani, S., Thakur, S., & Godara, T. (2025)**, In the research paper titled “Impact of Mobile Applications on Participation of Retail Investors in Indian Stock Market.” This study reported that mobile financial applications have enabled greater participation by retail investors in stock markets due to ease of use and lower entry costs. It concluded that mobile tech has democratized investment opportunities, particularly for smaller investors who previously faced high barriers to market entry.
5. **Johri, A. (2023)**, In the research paper titled “The Impact of Digital Financial Trading on Investor Behaviour in Traditional Financial Markets.” Findings demonstrated that digital trading platforms (e.g., Trader4) have substantially influenced investor behaviour by offering convenience, real-time information, and lower operational friction, prompting a shift away from traditional investment channels. The research recommended educational efforts to improve investors’ ability to choose the right digital tools for effective investment.
6. **Lisin, A., Shvandar, K., et al. (2021)**, In the research paper titled “Digital Trading Applications and Bank Performance: Evidence from Russia.” Although focused on banks, this study concluded that digital trading application adoption enhances transactional efficiency and resonates through investor ecosystems. It highlighted how enhanced digital infrastructure in financial markets supports stronger performance outcomes and indirectly boosts investor confidence and participation.
7. **Gambacorta, L., Gambacorta, R., & Mihet, R. (2023)**, In the research paper titled “FinTech, Investor Sophistication, and Financial Portfolio Choices.” The authors concluded that fintech innovations increase heterogeneity in portfolio strategies among sophisticated versus unsophisticated investors. Enhanced financial technology improves data access and investment decision-making, but accessible tools must be coupled with investor capacity to use them effectively to reduce asymmetric information and improve outcomes.
8. **Kothari, N. (2025)**, In the research paper titled “Capital Markets in India: Evolution, Challenges, and Future Prospects” This study highlighted that digital trading platforms have significantly increased retail investor participation and transparency in Indian capital markets. It also discussed challenges such as financial literacy gaps and market volatility, underpinning the complex impact of technology on investor behaviour and market dynamics.

Research Gap:

Despite the rapid growth of digital trading platforms, mobile investment applications, and fintech solutions in capital markets, existing studies largely focus on technology adoption models or general investor behaviour, with limited emphasis on how different types of investors actually use technology during various stages of the investment process. There is a noticeable gap in empirical research examining the combined influence of digital literacy, trust, risk perception, and demographic factors on technology usage specifically in capital market investing, particularly in the Indian context. Moreover, few studies analyse the long-term impact of technology use on investment decision quality, portfolio performance,

and investor confidence. This gap highlights the need for a comprehensive study that integrates behavioural, technological, and demographic dimensions to better understand technology-driven investment practices in capital markets.

Use of Artificial Intelligence:

The rapid advancement of digital technology has significantly transformed the Indian capital market, with Artificial Intelligence (AI) emerging as a key enabler of modern investment practices. In India, the increasing penetration of smartphones, internet connectivity, and fintech innovation has encouraged investors to adopt AI-driven tools for informed and efficient investment decision-making. Regulatory initiatives by the Securities and Exchange Board of India (SEBI), such as online KYC, digital disclosures, and investor protection mechanisms, have further supported the integration of technology into investment activities. AI is now being conceptually recognized as a strategic tool that assists Indian investors in analyzing complex market data, managing risks, and accessing diverse investment avenues in a structured and transparent manner.

In the Indian context, AI plays a crucial role across multiple investment avenues, including equities, mutual funds, derivatives, fixed-income instruments, and alternative investments. In equity markets such as NSE and BSE, AI-powered trading platforms and analytics tools help investors track market movements, analyze company fundamentals, and interpret price trends. Mutual fund investors increasingly rely on AI-enabled robo-advisors offered by Indian fintech platforms to assess risk profiles, recommend suitable schemes, and rebalance portfolios. In fixed-income investments, AI supports credit risk evaluation and interest rate forecasting, while in derivatives and commodities markets, AI assists in volatility analysis

and hedging strategies. Additionally, AI-based sentiment analysis tools help investors interpret market news, regulatory announcements, and corporate disclosures, enabling more informed investment decisions.

The use of AI offers several advantages to Indian investors by improving efficiency, accuracy, and accessibility in investment processes. AI enables real-time data analysis, helping investors respond quickly to market changes while minimizing emotional bias. Robo-advisory services democratize access to professional investment guidance, particularly for retail and first-time investors. AI-driven systems also enhance transparency by offering automated reports, alerts, and portfolio insights aligned with SEBI's disclosure norms. Furthermore, AI supports better risk management through predictive analytics and scenario analysis, allowing investors to diversify portfolios effectively and align investments with long-term financial goals.

Despite its potential, the adoption of AI in investment practices in India faces several challenges. Limited digital and financial literacy among certain segments of investors restricts effective use of AI-based tools. Concerns related to data privacy, cybersecurity, and algorithmic transparency also influence investor trust. Regulatory complexities, including compliance with SEBI guidelines on algorithmic trading and robo-advisory services, pose operational challenges for fintech firms. Additionally, over-reliance on AI recommendations without adequate human judgment may expose investors to unforeseen market risks, particularly during periods of high volatility or systemic shocks.

Future scope of the study:

The future scope of AI in Indian capital markets is promising, with increasing alignment between

regulatory frameworks, fintech innovation, and investor education. SEBI's continued focus on investor protection and technology-driven governance is expected to strengthen trust in AI-enabled investment platforms. Advancements in machine learning, big data analytics, and behavioral finance will further enhance personalized investment solutions. AI is also likely to play a greater role in ESG investing, risk surveillance, and fraud detection. As digital literacy improves and regulatory clarity evolves, AI is expected to become an integral component of investment decision-making across diverse investment avenues in India, complementing human expertise rather than replacing it.

Findings:

The conceptual analysis reveals that Artificial Intelligence has become an important enabling tool for investors in the Indian capital market by enhancing access to information, improving analytical capabilities, and supporting informed investment decisions across various investment avenues. AI-based tools such as robo-advisors, predictive analytics, and sentiment analysis assist investors in equities, mutual funds, fixed-income instruments, and alternative assets by reducing information asymmetry and behavioral bias. The study also finds that regulatory support from SEBI, growth of Indian fintech platforms, and digital infrastructure have facilitated the responsible adoption of AI. However, the effective use of AI is influenced by factors such as digital literacy, trust in technology, and investor awareness, indicating that technology alone is not sufficient without investor preparedness.

Conclusion:

The study concludes that Artificial Intelligence plays a transformative yet supportive role in modern investment practices within the Indian capital market. AI enhances efficiency, transparency, and decision quality, while making professional investment tools

accessible to a wider investor base. At the same time, challenges related to data security, regulatory compliance, and over-reliance on automated systems highlight the need for balanced integration of human judgment and technological intelligence. With continued regulatory oversight by SEBI, improvements in investor education, and ethical use of AI by fintech firms, AI is expected to become an integral component of sustainable and informed investment decision-making in India's evolving capital market ecosystem.

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