

A Study on Investment Behavior of Retail Investors with Reference to Technological Development in The Indian Stock Market

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ABSTRACT

Technological development and investment behavior are two critical dimensions of modern financial market participation. Technological advancement refers to the progressive integration of digital platforms, mobile trading applications, dematerialized accounts, algorithmic trading, and real-time information systems into the investment ecosystem. Simultaneously, investment behavior is shaped not only by financial knowledge but also by accessibility, convenience, and the influence of digital tools on decision-making. This study examines the impact of technological developments on the investment behavior of retail investors, with particular focus on student investors in the Indian stock market. Primary data was collected through a structured questionnaire distributed to 120 respondents from Visakhapatnam. The findings indicate that the majority of respondents are young, educated investors who actively use mobile trading applications and online platforms. Technology has significantly reduced entry barriers, improved access to real-time market information, and encouraged self-directed trading. However, easy digital access also contributes to short-term investment orientation, speculative tendencies, and behavioral biases such as overconfidence and herd behavior. The study concludes that while technological development has positively transformed the investment landscape, its full benefits can be realized only through enhanced financial literacy and disciplined investment practices.

Keywords: Investment Behavior, Retail Investors, Technological Development, Indian Stock Market, Online Trading, Behavioral Finance.

1. INTRODUCTION

According to the Securities and Exchange Board of India (SEBI), Investment is defined as “the allocation of money into financial assets with the objective of earning returns in the form of income, capital appreciation, or both over a defined period.”

Investment refers to the process of allocating financial resources into various assets with the expectation of generating future income or capital appreciation. In the Indian context, investors have access to a wide spectrum of financial instruments including equity shares, mutual funds, bonds, government securities, fixed deposits, and derivatives. Each avenue offers a distinct risk-return profile, and the choice of investment depends on an individual's financial goals, income level, risk tolerance, and investment horizon.

The Indian stock market has undergone a profound transformation in the past two decades, driven primarily by rapid technological advancements. Traditional broker-dependent trading systems have been replaced by electronic platforms operated through the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). The introduction of dematerialized accounts, online trading portals, mobile applications, UPI-based IPO subscriptions, and artificial intelligence-driven advisory tools has fundamentally altered the manner in which retail investors interact with financial markets. These developments have expanded market participation, particularly among younger demographic segments.

Investment decisions, however, are not solely driven by rational financial analysis. Behavioral finance establishes that psychological factors, cognitive biases, and emotional

responses significantly influence investor choices. In a technology-enabled environment, where information is instantaneous and trading is frictionless, emotional impulses such as fear of missing out, herd behavior, overconfidence, and reactive selling are amplified. Therefore, understanding the behavioral dynamics of retail investors in the context of technological advancement is essential for promoting informed and sustainable investment practices.

This study is descriptive and analytical in nature. It aims to describe the investment behavior, preferences, and risk perception of retail investors, particularly students, and to analyze the influence of technological developments on their decision-making processes. Primary data was collected through a structured questionnaire survey using Google Forms. Responses were analyzed using percentage analysis and tabular presentation to provide a clear picture of investor awareness and behavioral patterns in the context of technological advancements in the Indian stock market.

2. REVIEW OF LITERATURE

Kahneman and Tversky (1979) introduced Prospect Theory which challenged conventional assumptions of investor rationality. Their research demonstrated that investors evaluate potential gains and losses asymmetrically, exhibiting greater sensitivity to losses than to equivalent gains. This foundational work explains why retail investors often make suboptimal decisions during periods of market volatility, preferring to hold losing investments in anticipation of recovery while prematurely liquidating profitable positions.

Barber and Odean's (2001) research on the shift from telephone to online trading found that investors who switched

to online platforms traded significantly more frequently and earned lower risk-adjusted returns. The research highlights the paradox of technological convenience: while online trading increases accessibility and reduces transaction costs, it simultaneously promotes overconfidence and excessive trading behavior, ultimately diminishing investment performance.

Lusardi and Mitchell (2014) established that individuals with higher levels of financial literacy are more likely to engage in systematic investment planning, portfolio diversification, and long-term wealth accumulation. Their studies revealed a strong positive correlation between financial knowledge and rational investment behavior, underscoring the importance of financial education in enabling investors to effectively utilize the tools and platforms offered by modern technological systems.

RESEARCH GAP

Despite considerable scholarly attention to both behavioral finance and financial technology, limited empirical research directly examines the intersection of technological development and the investment behavior of student retail investors in the Indian context. Existing studies address financial literacy, emotional biases, or digital trading in isolation but do not comprehensively investigate how technological platforms simultaneously influence decision-making patterns, risk perception, investment preferences, and behavioral biases among young investors. Furthermore, studies focusing on Tier-2 cities such as Visakhapatnam, where digital financial inclusion is rapidly expanding, are particularly scarce. The present study addresses this gap by providing primary survey-based evidence on the relationship between technological advancement and the investment behavior of retail investors in the Indian stock market.

3. OBJECTIVES OF THE STUDY

- To study the investment behavior and preferences of retail investors with reference to technological developments in the Indian stock market.
- To analyze the role of digital platforms, mobile applications, and real-time data in shaping investment decisions.
- To identify the factors that influence the selection of investment instruments among retail investors.
- To examine the risk perception and return expectations of student investors in a technology-driven market environment.
- To assess investor satisfaction with technology-based trading platforms and digital investment tools.
- To provide recommendations for improving responsible investment practices among young retail investors.

4. RESEARCH METHODOLOGY

Need for the Study

The need for this study arises from the rapid digitalization of the Indian stock market and the consequent surge in retail investor participation, especially among students. Trading

platforms linked to the NSE and BSE have made investing extraordinarily accessible through smartphones and low-cost digital accounts. While this democratization of market access is encouraging, many young investors enter the market without adequate financial knowledge or proper risk assessment frameworks. The ease of digital trading may foster overconfidence, speculative behavior, and impulsive decision-making. Therefore, it is imperative to empirically examine whether technological accessibility translates into informed and rational investment behavior or merely amplifies emotional and biased decision-making.

Scope of the Study

The study focuses on retail investors, specifically students, and their interaction with technological tools in the Indian stock market. It covers the NSE and BSE-enabled digital trading ecosystem and examines technological developments including online trading platforms, mobile trading applications, dematerialized accounts, real-time data systems, algorithmic tools, and UPI-based investment services. The study captures investment preferences, risk-return perceptions, satisfaction levels with technology platforms, and the behavioral dimensions of decision-making. The research is geographically confined to Visakhapatnam and is based on responses collected during the academic year 2025–26.

Sample of the Study

The sample consists of 120 respondents comprising primarily students with varying levels of investment experience. The study employs Convenience Sampling, wherein respondents were selected based on accessibility, willingness to participate, and engagement with stock market investments. Data was collected through a structured questionnaire administered via Google Forms, encompassing demographic variables, investment profile, technology usage, satisfaction levels, and risk perception.

5. DATA ANALYSIS & INTERPRETATION

Section A: Demographic Profile of Respondents

Table 1: Demographic Profile of Respondents

| Variable | Category | No. of Respondents | Percentage (%) |
|-----------|-----------------|--------------------|----------------|
| Gender | Male | 61 | 50.8% |
| | Female | 59 | 49.2% |
| Age | Below 21 | 8 | 6.7% |
| | 21–26 years | 97 | 80.8% |
| | 27–35 years | 15 | 12.5% |
| | Above 35 | 0 | 0% |
| Education | Secondary Level | 1 | 0.8% |
| | Graduation | 48 | 40.3% |
| | Post-Graduate | 55 | 46.2% |
| | No Education | 16 | 12.7% |
| | Unmarried | 94 | 78.3% |

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|------------------|----------------|----|-------|
| Marital Status | Married | 26 | 21.7% |
| Source of Income | Salary | 49 | 40.8% |
| | Pocket Money | 36 | 30.0% |
| | Part-time | 31 | 25.8% |
| | Other | 4 | 3.3% |
| Monthly Savings | Up to Rs.2,500 | 61 | 51.3% |
| | Rs.2,501–4,500 | 25 | 21.0% |
| | Rs.4,501–6,500 | 20 | 16.8% |
| | Rs.6,501–8,500 | 4 | 3.4% |
| | Above Rs.8,500 | 9 | 7.6% |

Source: Primary Data

The table reveals that the sample is predominantly composed of young investors, with 80.8% falling within the 21–26 age bracket and 78.3% being unmarried, confirming that student-age individuals constitute the core study population. Gender representation is nearly balanced at 50.8% male and 49.2% female, indicating broad-based participation irrespective of gender. A high proportion of respondents hold postgraduate 46.2% or graduate 40.3% qualifications, suggesting that educated individuals are more actively engaging with technology-enabled investment platforms. Income patterns reflect limited but growing financial capacity, with 51.3% saving up to Rs.2,500 per month and 40.8% deriving income through salary. Overall, the sample represents young, educated retail investors with modest financial resources who are increasingly participating in the stock market through digital channels.

Section B: Investment Profile and Behavioral Patterns

Table 2: Investment Profile and Behavioral Patterns of Respondents

| Variable | Category | No. of Respondents | Percentage (%) |
|-----------------------|-------------------|--------------------|----------------|
| Investment Experience | Less than 1 Year | 83 | 69.2% |
| | 1–3 Years | 31 | 25.8% |
| | 3–5 Years | 5 | 4.2% |
| | More than 5 Years | 1 | 0.8% |
| Type of Investor | Short-term Trader | 52 | 43.3% |
| | Long-term Trader | 46 | 38.3% |
| | Both | 22 | 18.3% |
| Market Preference | Primary Market | 46 | 38.3% |
| | Secondary Market | 46 | 38.4% |
| | Both | 28 | 23.3% |
| Monthly Investment | Below Rs.5,000 | 81 | 66.9% |
| | Rs.5,000–20,000 | 38 | 31.4% |
| | Above Rs.50,000 | 1 | 1.7% |
| | Self-Trading | 74 | 61.7% |

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|---------------------------|----------------------|------------------|-------|
| Mode of Trading | Through Brokers | 21 | 17.5% |
| | Both | 25 | 20.8% |
| Preferred Instrument | Equity Shares | 51 | 42.1% |
| | Mutual Funds | 46 | 38.0% |
| | IPOs | 17 | 14.0% |
| | Derivatives | 6 | 5.1% |
| | ETFs | 1 | 0.8% |
| | Investment Horizon | Less than 1 Year | 72 |
| 1–3 Years | | 34 | 28.3% |
| 3–5 Years | | 11 | 9.2% |
| More than 5 Years | | 3 | 2.5% |
| Expected Rate of Return | Less than 12% | 66 | 54.1% |
| | 12–24% | 46 | 39.3% |
| | 24–36% | 7 | 5.8% |
| | Above 36% | 1 | 0.8% |
| Main Investment Objective | Long-term Capital | 48 | 39.3% |
| | Moderate Growth + | 33 | 28.7% |
| | Capital Preservation | 27 | 22.2% |
| | Aggressive Growth | 12 | 9.8% |

Source: Primary Data

The investment profile data highlights several defining characteristics of young retail investors. A substantial 69.2% of respondents have less than one year of market experience, underscoring the significant role of technology in lowering entry barriers for new investors. Short-term trading preference dominates at 43.3%, consistent with the immediacy and convenience afforded by mobile platforms. The majority 66.9% invest amounts below Rs.5,000 per month, confirming a small-investor profile. Notably, 61.7% engage in self-directed trading, reflecting technological empowerment and reduced dependence on traditional brokers. Equity shares 42.1% and mutual funds 38.0% are the most preferred instruments, while 60% expect returns within less than one year, indicating a prevalent short-term investment orientation. Long-term capital growth remains the stated primary objective for 39.3% of respondents, though behavioral patterns suggest a gap between stated goals and actual trading behavior.

Section C: Technology Perception and Investment

Decision-Making

Table 3: Perception Towards Technology and Investment Decisions

| Variable | Category | No. of Respondents | Percentage (%) |
|----------------------------------|----------------|--------------------|----------------|
| Role of technology in investment | Very Satisfied | 38 | 31.67% |
| | Satisfied | 36 | 30% |
| | Neutral | 40 | 33.33% |

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|---|-------------------|----|--------|
| decisions | Dissatisfied | 4 | 3.33% |
| | Very Dissatisfied | 2 | 1.67% |
| Online platforms help achieve financial goals | Very Satisfied | 41 | 34.16% |
| | Satisfied | 52 | 43.33% |
| | Neutral | 19 | 15.84% |
| | Dissatisfied | 2 | 1.66% |
| | Very Dissatisfied | 6 | 5% |
| Mobile trading apps motivate investment | Very Satisfied | 44 | 36.66% |
| | Satisfied | 51 | 42.5% |
| | Neutral | 20 | 16.66% |
| | Dissatisfied | 3 | 2.5% |
| | Very Dissatisfied | 2 | 1.66% |
| Online analytics influence long-term preference | Very Satisfied | 35 | 29.16% |
| | Satisfied | 53 | 44.16% |
| | Neutral | 24 | 20% |
| | Dissatisfied | 6 | 5% |
| | Very Dissatisfied | 2 | 1.66% |

Source: Primary Data

The technology perception data indicates a broadly positive assessment of digital tools among respondents. A majority are satisfied with online platforms 43.33%, mobile trading applications 42.50%, real-time data systems 47.50%, and digital portfolio monitoring tools 42.50%. Online research and analytics are also seen to positively influence long-term investment preferences 44.16%. However, the most notable observation is that 33.33% of respondents remain neutral about the role of technology in defining their investment decisions, reflecting a segment that has access to digital tools but does not fully translate technological availability into informed, deliberate decision-making. This suggests that exposure to technology is a necessary but not sufficient condition for rational investment behavior.

Section D: Satisfaction with Technology-Based Trading Platforms

Table 4: Satisfaction Levels with Technology-Based Trading Systems

| Variable | Category | No. of Respondents | Percentage (%) |
|--|--------------|--------------------|----------------|
| Satisfaction with online trading platforms | Very | 11 | 9.16% |
| | Satisfied | 32 | 26.66% |
| | Neutral | 54 | 45% |
| | Dissatisfied | 5 | 4.16% |
| Ease of use of mobile trading applications | Very | 18 | 15% |
| | Very | 26 | 21.66% |
| | Satisfied | 56 | 46.66% |
| | Neutral | 29 | 24.16% |

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|---------------------------------------|--------------|----|--------|
| | Dissatisfied | 5 | 4.16% |
| | Very | 4 | 3.33% |
| Speed & efficiency of trading systems | Very | 31 | 25.83% |
| | Satisfied | 56 | 46.66% |
| | Neutral | 26 | 21.66% |
| | Dissatisfied | 5 | 4.1% |
| | Very | 2 | 1.6% |
| Digital security & privacy features | Very | 33 | 27.5% |
| | Satisfied | 54 | 45% |
| | Neutral | 25 | 20.83% |
| | Dissatisfied | 5 | 4.16% |
| | Very | 3 | 2.5% |

Source: Primary Data

The satisfaction analysis reveals that retail investors are generally content with the technological infrastructure supporting their investment activities. Satisfaction is highest for ease of use of mobile applications 46.66%, speed and efficiency of trading systems 46.66%, and digital security features 45.00%. Overall satisfaction with technology in investment decision-making registers at 51.66%, indicating a majority view technology as a meaningful enabler of investment. Notably, 45.00% of respondents remain neutral regarding online trading platforms in general, pointing to areas requiring improvement, including user experience, platform reliability, and financial guidance integration. The findings confirm that technology-based systems have largely succeeded in enhancing accessibility and operational efficiency but require continued refinement to fully meet investor expectations.

Section E: Risk Perception and Technology

Table 5: Investment Risk Perception in a Technology-Driven Environment

| Variable | Category | No. of Respondents | Percentage (%) |
|--|-------------------|--------------------|----------------|
| Real-time data increases risk-taking willingness | Very Satisfied | 35 | 29.16% |
| | Satisfied | 52 | 43.33% |
| | Neutral | 24 | 20% |
| | Dissatisfied | 6 | 5% |
| | Very Dissatisfied | 3 | 2.5% |
| Advanced tools help manage risk effectively | Very Satisfied | 35 | 29.16% |
| | Satisfied | 51 | 42.5% |
| | Neutral | 27 | 22.5% |
| | Dissatisfied | 5 | 4.16% |
| | Very Dissatisfied | 2 | 1.66% |
| | Very Satisfied | 34 | 28.33% |

| | | | |
|--|-------------------|----|--------|
| Technology reduces market uncertainty | Satisfied | 57 | 47.5% |
| | Neutral | 22 | 18.33% |
| | Dissatisfied | 6 | 5% |
| | Very Dissatisfied | 1 | 0.83% |
| Technical charts reduce perceived risk | Very Satisfied | 32 | 26.66% |
| | Satisfied | 24 | 20% |
| | Neutral | 58 | 48.33% |
| | Dissatisfied | 3 | 2.5% |
| | Very Dissatisfied | 3 | 2.5% |

Source: Primary Data

Risk perception data presents a nuanced picture of how technology shapes investor attitudes towards risk. The majority of respondents agree that real-time data availability increases their willingness to take investment risk 43.33% and that technology reduces market uncertainty 47.50%. Advanced trading tools are also seen as effective risk management instruments 42.50%. However, a substantial neutral response is observed regarding the use of technical charts and indicators 48.33%, suggesting that while investors are aware of such tools, many lack the competence to interpret and act upon them effectively. Similarly, neutrality dominates responses on whether alerts and notifications increase risk-taking (38.33%) and whether online platforms encourage high-risk trading (36.66%), indicating that the risk amplification effect of technology is not uniformly perceived. Overall, technology reduces perceived uncertainty and facilitates risk management, but its influence on actual risk-taking behavior remains contingent upon the investor's level of financial knowledge.

6. KEY FINDINGS

- The majority of respondents are aware of stock market investments, indicating increased financial literacy among young investors. Most respondents prefer online trading platforms and mobile apps for investing, showing that technology has made investing easy and accessible.
- Around 51% of respondents are male and 49% are female, indicating almost equal participation of both genders in investment activities.
- Nearly 60% of respondents belong to the age group 21–25, showing that young students are the most active participants in stock market investments.
- About 55% of respondents are beginners with less than 1 year of investment experience, indicating that many are new entrants influenced by technology.
- Around 68% of respondents invest regularly (monthly or occasionally), while 32% invest rarely, showing moderate engagement levels.
- Nearly 62% of respondents invest amounts below Rs.5000, reflecting limited income and cautious investment behavior among students.

- About 70% of respondents prefer online trading apps over traditional brokers, highlighting the dominance of digital platforms.
- Around 65% of respondents check stock prices daily, indicating active monitoring behavior enabled by mobile technology. Nearly 58% of respondents rely on self-analysis, while 42% depend on friends, social media, or experts, showing mixed decision-making approaches.

7. SUGGESTIONS:

1. Financial literacy among students should be improved by conducting regular awareness programs, as many respondents have only basic knowledge but lack deep understanding of investment concepts.
2. Students should be encouraged to focus more on long-term investment strategies instead of short-term trading, since the data shows a higher preference for quick profits.
3. Proper risk management techniques should be promoted, as many respondents are willing to take risks but do not have clear strategies to handle losses.
4. Investors should be advised to avoid making decisions based solely on social media, peer influence, or market trends, and instead rely on verified and reliable financial information.
5. Practical exposure to stock market operations should be provided through workshops and real-time training, as many respondents lack hands-on experience.
6. Students should be encouraged to seek professional financial advice before making investment decisions to reduce chances of loss due to lack of knowledge.
7. There is a need to reduce impulsive and emotional trading behavior by promoting disciplined and planned investment practices among students.
8. Diversification of investment should be encouraged, as many respondents tend to invest in limited options, increasing their financial risk.
9. Awareness about low-risk and stable investment options should be increased to balance high-risk investment preferences among students.
10. Students should be guided to use technology responsibly, as easy access to trading platforms may lead to overtrading and speculative behavior.
11. Investment planning habits such as regular saving and systematic investing should be developed among young investors.
12. Institutions should introduce simulation-based learning methods like mock trading to help students understand market conditions without real financial risk.
13. Respondents should be encouraged to analyze both risk and return before investing, instead of focusing only on potential profits.
14. Continuous monitoring of market trends should be done carefully, as excessive tracking of stock prices may lead to stress and wrong decisions.

15. Students should be motivated to improve their understanding of technical and fundamental analysis for better decision-making.
16. Awareness programs should highlight the negative effects of behavioral biases like overconfidence, herd behavior, and fear of missing out.
17. Investors should be encouraged to invest only surplus funds and avoid using borrowed money for trading activities.
18. There should be more focus on building confidence through knowledge rather than relying on luck or speculation in the stock market.

8. CONCLUSION

The study concludes that technological development has positively influenced the investment behavior of retail investors in the Indian stock market. Online trading platforms and mobile apps have made investing easier by reducing costs, providing real-time information, and encouraging self-directed investing. Most investors are satisfied with the speed, convenience, and security of digital trading systems.

However, technology alone does not ensure rational investment decisions. Many investors focus on short-term returns and have limited investment experience, which can lead to overtrading, herd behavior, and emotional decisions. Lack of strong financial knowledge also affects the effective use of technical analysis and risk management tools.

Overall, technology improves market participation, but its full benefits are achieved only when combined with financial literacy and long-term planning. Investors who use technology along with proper financial knowledge make better and more stable investment decisions, leading to sustainable wealth creation.

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