

A Study on Awareness and Use of Technical Analysis Among Stock Market Investors in Pune City

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Abstract - The growing participation of retail investors in the stock market has increased the importance of analytical tools such as technical analysis for informed decision-making. This study examines the level of awareness and usage of technical analysis among stock market investors in Pune. The research is based on primary data collected through a structured questionnaire from a sample of investors.

This study focuses on assessing the awareness and usage of technical analysis among stock market investors in Pune City. The findings indicate that although most investors are familiar with basic concepts of technical analysis, its practical application in investment decision-making is relatively limited. Investors tend to use basic tools such as trend lines and simple chart patterns, whereas advanced technical indicators are less commonly applied due to limited knowledge and lack of experience.

The study also highlights a significant gap between awareness and actual usage of technical analysis techniques. It concludes that technical analysis can improve investment decisions when applied effectively; however, its success depends on the investor's knowledge, skills, and practical understanding. The research emphasises the need for improved financial education, structured training, and hands-on learning opportunities to enhance the effective use of technical analysis among retail investors.

Key Words: Equity Market, Technical Analysis Indicators, Investor Behaviour, Stock Market Analysis, Financial Knowledge, Investment Practices

1. INTRODUCTION

The rapid growth of digital trading platforms and the widespread availability of financial information have significantly boosted retail investor participation in the stock market. Prominent exchanges such as the National Stock Exchange of India (NSE) and the Bombay Stock Exchange (BSE) have played a key role in enabling easier access and active involvement in trading activities. Despite this increased participation, the inherent volatility and unpredictability of the stock market continue to create difficulties in making precise and timely investment decisions.

In this context, technical analysis has emerged as a widely used approach for studying market behaviour and price trends. It is based on the analysis of historical price movements using charts, patterns, and indicators to anticipate future market trends. Unlike fundamental analysis, which evaluates a company's financial strength, technical analysis focuses on price action and market sentiment, helping investors identify potential entry and exit opportunities more effectively.

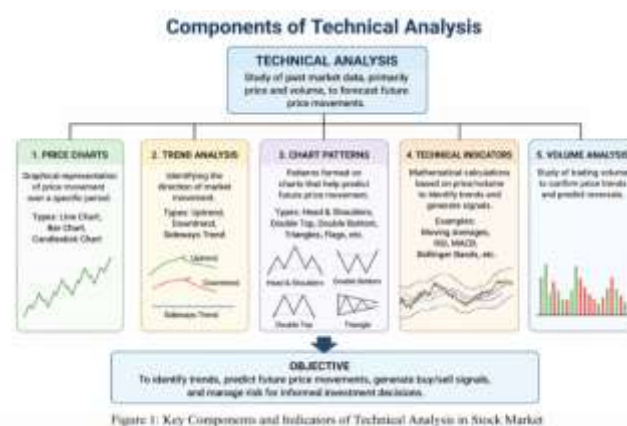


Figure 1: Key Components and Indicators of Technical Analysis in Stock Market

As shown in **Figure 1**, technical analysis is based on stock charts, moving averages, and various indicators that help investors analyse price trends and make informed decisions.

Despite its growing significance in financial markets, the level of awareness and application of technical analysis among retail investors remains uneven. While a considerable number of investors are familiar with basic concepts, their ability to apply these tools effectively differs due to variations in financial knowledge, experience, and access to relevant resources, indicating a gap between awareness and practical usage.

In this context, the study aims to assess the awareness and utilisation of technical analysis among stock market investors in Pune City. It also examines investor behaviour, usage patterns, and the factors influencing adoption, with the objective of enhancing investment decision-making and strengthening financial literacy.

2. OBJECTIVES OF THE STUDY

1. **To evaluate the awareness level of technical analysis among stock market investors in Pune:** This objective focuses on understanding whether investors are familiar with the concept of technical analysis and its basic principles.
2. **To examine the extent of investors' knowledge regarding technical analysis tools and indicators:** It aims to assess how well investors understand various tools such as charts, moving averages, RSI, and other indicators.
3. **To investigate the usage of technical analysis in investment and trading decision-making:** This objective analyses how investors apply technical analysis techniques while buying or selling stocks.
4. **To determine the most frequently used technical indicators by investors:** It identifies which tools or indicators are commonly preferred and used by investors in practice.
5. **To analyse the role of technical analysis in risk reduction and return enhancement:** This objective evaluates whether the use of technical analysis helps investors minimise losses and improve their returns.

3. HYPOTHESIS OF THE STUDY

H₀ (Null Hypothesis): The use of technical analysis has no significant impact on the investment performance of stock market investors in Pune.

H₁ (Alternative Hypothesis): The use of technical analysis has a significant impact on the investment performance of stock market investors in Pune.

4. LITERATURE REVIEW

The literature indicates a growing adoption of technical analysis among retail investors in India, largely supported by digitalisation and online trading platforms. Sharma and Patel (2021) noted that increased internet access and mobile trading apps have encouraged, especially young investors, to use technical tools such as charts and indicators, although a lack of knowledge often leads to improper usage.

Joshi and Mehta (2022) found that while awareness of indicators like RSI and MACD is relatively high, effective practical application remains limited. Similarly, Kumar and Singh (2023) emphasised that technical analysis is more useful in short-term trading when supported by disciplined strategies and risk management.

Technological platforms have improved accessibility to trading tools. Rao and Kulkarni (2022) highlighted that apps like Zerodha and Grow have increased investor participation, though they also contribute to impulsive trading behaviour.

In Maharashtra, Patil and Deshmukh (2024) observed that technical analysis is mainly used by short-term traders, while long-term investors prefer fundamental analysis. Verma (2021) further noted that investor psychology, including fear and overconfidence, significantly affects trading decisions.

Regarding tools, Naik and Joshi (2023) identified candlestick patterns as widely used, while Gupta and Shah (2022) stated that moving averages are useful but may give false signals in sideways markets. Additionally, Mishra and Jain (2024) highlighted the growing influence of social media in increasing awareness among young investors, though knowledge quality remains an issue.

Kulkarni and More (2023) identified Pune as a significant urban financial hub with active retail investors, making it suitable for this study. Furthermore, Agarwal and Bose (2021) and Sawant and Patankar (2024) concluded that the effectiveness of technical analysis depends on investor knowledge, discipline, and risk management.

Research Gap.

Despite increasing awareness, gaps persist in the practical application, depth of understanding, and disciplined use of technical analysis, justifying the need for further research in Pune City.

5. RESEARCH METHODOLOGY

The present study adopts a structured methodology to analyze the awareness and usage of technical analysis among stock market investors.

5.1 Research Design

A descriptive research design is employed to understand investor awareness, knowledge, and application of technical analysis techniques.

5.2 Sampling Technique and Sample Size

The study uses a convenience sampling method, with a sample size of 100 stock market investors from Pune.

5.3 Data Sources

- **Primary Data:** Primary data is collected directly from stock market investors through a structured questionnaire to understand their awareness and usage of technical analysis.
- **Secondary Data:** Secondary data is obtained from research journals, books, published articles, financial websites, and previous studies relevant to the topic.

5.4 Data Collection Technique

A structured questionnaire consisting of closed-ended and Likert scale questions is used to gather relevant information regarding investor behaviour, awareness, and usage of technical analysis.

5.5 Statistical Tools for Data Analysis

The collected data is analyzed using statistical tools such as percentage analysis and frequency distribution. The results are

presented through tables and graphical representations for better interpretation, using tools like Microsoft Excel.

5.6 Data Analysis Tools

Data is analysed using descriptive statistical tools such as percentage analysis and frequency distribution, and is presented through tables and graphical representations using Microsoft Excel.

5.7 Scope of the Study

The study is confined to retail investors in Pune city and focuses specifically on the awareness and use of technical analysis.

5.8 Limitations of the Study

The findings are subject to limitations such as a limited sample size, potential response bias, time constraints, and geographical restrictions.

6. DATA ANALYSIS & INTERPRETATION

This chapter deals with the systematic analysis and interpretation of data collected from stock market investors in Pune. The data is analyzed using statistical tools such as percentage and frequency analysis and is presented through appropriate tables and charts for clarity. The objective of this chapter is to convert raw data into meaningful information and draw insights regarding investors' awareness, knowledge, and use of technical analysis in line with the study objectives.

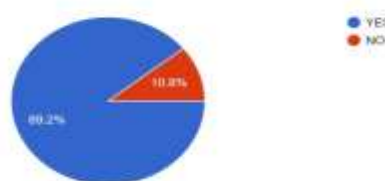
6.1 Analysis of Primary Data

This section presents the analysis of primary data gathered from stock market investors in Pune through a structured questionnaire. The responses have been systematically processed using statistical tools such as percentage and frequency analysis. The data is illustrated with the help of tables and charts to ensure clear presentation. This section aims to analyze and interpret the responses to generate meaningful insights aligned with the objectives of the study.

6.1.1. Awareness of Technical Analysis

Are you aware of Technical Analysis in the stock market?

102 responses

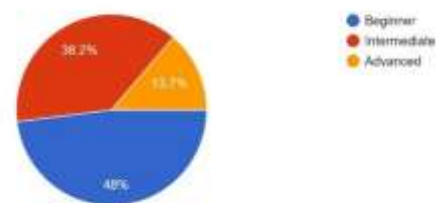


Analysis: This chart helps identify the overall awareness level among investors. If a majority are aware, it indicates growing market knowledge; if not, it highlights the need for investor education.

6.1.2. Level of Knowledge of Technical Analysis Tools

How would you rate your knowledge of Technical Analysis?

102 responses

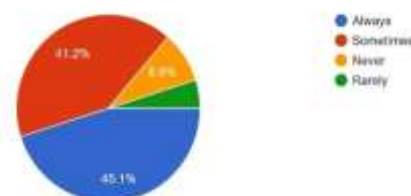


This chart shows the depth of understanding among investors. **Analysis:** It helps identify whether investors only have basic knowledge or are capable of advanced analysis.

6.1.3. Usage of Technical Analysis in Investment Decisions

How often do you use Technical Analysis?

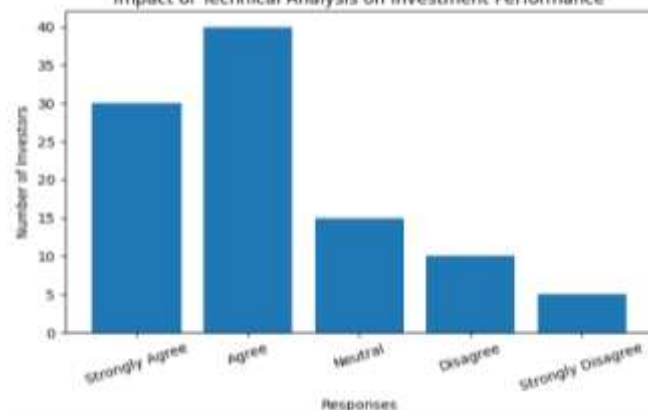
102 responses



Analysis: This reveals the gap between awareness and actual usage. Even if awareness is high, lower usage indicates lack of confidence or skills.

6.1.4. Most Commonly Used Technical Indicators

Impact of Technical Analysis on Investment Performance



Analysis: The chart reveals that a large proportion of investors either agree or strongly agree that technical analysis improves investment performance. A smaller percentage of respondents remain neutral, while only a few disagree. Overall, this indicates a positive outlook toward the role of technical analysis in enhancing returns and managing investment risk.

6.2 Analysis of Secondary Data (Refined & Concise)

This section presents the analysis of secondary data collected from journals, research papers, books, and credible online sources related to technical analysis and investor behavior. The purpose is to complement the primary data and provide a broader perspective on investor awareness and usage of technical analysis.

6.2.1. Awareness of Technical Analysis

Secondary studies indicate a growing level of awareness among investors, largely driven by digital platforms, mobile trading applications, and easy access to financial information. Technical analysis is increasingly being adopted by retail investors.

6.2.2. Knowledge of Tools and Indicators

The literature shows that investors are familiar with basic tools such as moving averages, trend lines, and candlestick patterns. However, understanding of advanced indicators like RSI and MACD remains limited, reflecting a gap between awareness and expertise.

6.2.3. Usage Patterns

Technical analysis is mainly used for short-term trading decisions, particularly for identifying entry and exit points. In contrast, long-term investors tend to rely more on fundamental analysis.

6.2.4. Commonly Used Indicators

Simple and user-friendly tools such as moving averages and candlestick charts are the most widely used, while complex indicators are less preferred due to a lack of knowledge.

6.2.5. Impact on Investment Performance

The effectiveness of technical analysis shows mixed outcomes. It can improve returns and reduce risk when applied with proper knowledge and discipline, but misuse and emotional decision-making may lead to losses.

6.2.6. Role of Technology

The rise of digital trading platforms has enhanced accessibility to technical tools and increased investor participation. However, it has also contributed to overtrading and impulsive investment behaviour.

6.2.7. Investor Psychology and Financial Literacy

Investor psychology and financial literacy significantly influence the effective use of technical analysis. Higher financial knowledge leads to better decision-making, whereas a lack of knowledge increases reliance on speculation.

Conclusion

The analysis of secondary data highlights that although awareness and usage of technical analysis are increasing, challenges remain in terms of practical application, discipline, and financial literacy. These insights reinforce the importance of investor education and support the objectives of the present study.

7. HYPOTHESIS TESTING

H₀ (Null Hypothesis): The use of technical analysis has no significant impact on the investment performance of stock market investors in Pune.

H₁ (Alternative Hypothesis): The use of technical analysis has a significant impact on the investment performance of stock market investors in Pune.

7.1 Test Applied

To test the hypothesis, a **Chi-Square Test** is used to examine the relationship between:

- Usage of Technical Analysis (Yes/No or Frequency)
- Perceived Investment Performance (Improved / Not Improved)

7.2 Decision Rule

- If the **calculated p-value** < **0.05**, reject H₀ and accept H₁
- If the **calculated p-value** > **0.05**, fail to reject H₀

7.3 Chi-Square Test Calculation

Step 1: Formulation of Contingency Table (Observed Values)

Usage of Technical Analysis	Improved Performance	Not Improved	Total
Yes	40	10	50
No	15	35	50
Total	55	45	100

Step 2: Calculation of Expected Frequencies (E)

$$E = \frac{(\text{Row total} \times \text{Column Total})}{\text{Grand Total}}$$

Usage of Technical Analysis	Improved (E)	Not Improved (E)
Yes	27.5	22.5
No	27.5	22.5

Step 3: Chi-Square Calculation Table

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Category	O	E	(O - E)	(O - E) ²	(O - E) ² / E
Yes-Improved	40	27.5	12.5	156.25	5.68
Yes-Not Improved	10	22.5	-12.5	156.25	6.94
No-Improved	15	27.5	-12.5	156.25	5.68

No-Not Improved	35	22.5	12.5	156.25	6.94
Total Value	χ^2				25.24

its usage is still informal, inconsistent, and highly dependent on individual knowledge and experience.

9. CONCLUSIONS

The study concludes that technical analysis is increasingly being recognised as a valuable tool for stock market decision-making among investors in Pune City. However, its adoption remains at a developing stage, with most investors relying on basic indicators rather than advanced analytical techniques. The findings indicate that while technical analysis is widely used for short-term trading and timing of entry and exit points, its effectiveness is largely influenced by the investor's level of knowledge, discipline, and practical experience in the market.

Furthermore, the study highlights the need for structured learning and practical exposure to enhance the correct application of technical tools among investors. It also suggests that combining technical analysis with fundamental analysis can lead to more informed, balanced, and effective investment decisions. Such an integrated approach is likely to improve decision-making quality and reduce investment risk in the stock market.

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Step 4: Degree of Freedom (df)

$$df = (r - 1)(c - 1) = (2 - 1)(2 - 1) = 1$$

Step 5: Decision Rule

- At 5% significance level, critical value of χ^2 (df = 1) = 3.84
- Calculated $\chi^2 = 25.24$

Step 6: Conclusion

Since 25.24 > 3.84, the result is statistically significant. Therefore, H_0 is rejected and H_1 is accepted.

This indicates that there is a significant relationship between the use of technical analysis and investment performance, meaning technical analysis helps investors in improving returns and managing risk.

8. RESULTS AND FINDINGS:

The study on stock market investors in Pune City shows that the level of awareness regarding technical analysis is moderate to relatively high, especially among young and active investors. Most respondents are familiar with basic tools such as Moving Averages, RSI, and Support & Resistance levels, whereas awareness and usage of advanced indicators like MACD, Bollinger Bands, and Fibonacci retracement remain limited.

It is also observed that investors primarily acquire knowledge of technical analysis through online sources such as YouTube, trading applications, and social media platforms, while formal education and classroom learning contribute minimally to their understanding.

In terms of application, technical analysis is mainly used for short-term trading and intraday investment decisions, whereas long-term investors tend to rely more on fundamental analysis, using technical tools only for better entry and exit timing.

Furthermore, investors believe that technical analysis helps improve decision timing in volatile market conditions, but its effectiveness is affected by issues such as inadequate training, emotional trading behaviour, and incorrect interpretation of charts and indicators.

In conclusion, the findings indicate that although technical analysis is gaining popularity among retail investors in Pune,

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