A STUDY ON TECHNICAL ANALYSIS: ITS APPLICATIONS IN INDIAN INVESTMENT MARKET

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Abstract-

This study aims to investigate the influence of technical analysis on investors' investing decisions in the Indian stock market. Given that everyone wants to profit from stock market investments in the current environment in a short amount of time, research on the effects of technical analysis is in high demand. While fundamental analysis advises investors where to invest, technical analysis advises them when to enter and exit securities. The researcher has periodically undertaken a number of initiatives to determine the most effective combination of technical analysis approaches as well as the viability of such a combination in the stock markets. However, the majority of the time, either technical or fundamental analysis is focused on the Indian stock market, and only one analytical technique is used for outside markets.

Keywords: Stock Market, Stock Exchange, Indian Stock trading, Technical Analysis etc

I. INTRODUCTION

Traders and investors all over the world, especially those operating in the vibrant and dynamic terrain of the Indian stock market, use a complex process known as technical analysis. Technical analysis essentially boils down to sifting through mountains of market data for trends in price action and trade volume. This is due to the fact that these patterns are thought to contain pertinent data. Traders and investors use price charts to see how prices have changed over time and to see patterns when they happen. They use a range of charting techniques, including candlestick patterns, line charts, and bar charts. By taking this tack, they hope to gain understanding of how market players act, and from there they hope to extrapolate information about potential price changes. Along with this, technical analysis comprises a thorough examination of market trends, support and resistance levels, and key technical indicators. A notable trend that has been noticed in many countries, particularly in Asia and Latin America, is the transition away from planned economic regimes and toward systems that are more market-oriented. Through the process of centralizing decision-making and allocating resources in accordance with state plans, planned economies initially supported continuous economic growth and development. However, over time, these economies inevitably encountered crises and inefficiencies that forced a reevaluation of their effectiveness. The post-liberalization era brought to the emergence of new obstacles, as nations struggled to navigate the complexity of integrating into the global

economy while simultaneously preserving their stability and competitiveness. The transition that has taken place has been significantly influenced by the fundamental developments that have taken place in the global financial system. It has come to light that the governance structures of financial institutions have been subjected to scrutiny, which has shown deficiencies in their ability to meet the requirements of the economy in the 21st century. As a matter of fact, the execution of policies that were not prepared for and were erroneous has caused significant damage to the global financial stability. The international monetary system must prioritize the containment of this disaster since the crisis is a phenomenon that is ongoing on a global scale. On the other hand, there is a certain amount

of concern regarding the long-term viability of the global financial reforms. One of the world's emerging economies, India, owes a great deal to its well-planned economic policy. Among the country's developing economies is India. Economic planning has helped eradicate backwardness, increase GDP, establish an industrial basis, refocus agriculture, and improve public sector performance. Although the Indian economy has benefited from the government's policies, there is now a huge disparity between the amounts of inputs and outputs due to the policies' implementation. The Indian economy was in a particularly hard spot between 1990 and 1991, when it was undergoing a period of fundamental upheaval. Foreign exchange reserves falling, debt repayment problems, and a balance of payments deficit are only a few of the reasons the country's credit rating has been going down in the global market.

II. TECHNICAL ANALYSIS IN THE INDIAN STOCK MARKET

Technical analysis, a comprehensive methodology used by the Indian stock market, is employed to examine and predict price changes by referring to prior market data. It is critical for investors and traders to possess a strong grasp of the fundamental concepts that form the basis of technical analysis. Price patterns include graphical depictions of previous price movements like flags, triangles, and head and shoulders. In order to evaluate assets and forecast their future price movements, "technical analysis" factors in statistical patterns generated by trading activity, including price movement and volume. Particularly pertinent to comprehending technical analysis as it pertains to the Indian stock market are a handful of fundamental concepts.

An essential concept in this regard is chart patterns. Technical analysts use price charts, like candlestick or line charts, to look for patterns that could indicate future price movements. This group includes patterns with structures like pennants, flags, triangles, and head and shoulders. Analysts can forecast whether prices will head in the same direction or veer off course by studying these patterns. The idea of levels of support and resistance is also crucial. When buying interest in a company begins to materialize at a price point that is thought to be supportive, it becomes more difficult for the stock to decline below that level. Conversely, a stock is unlikely to encounter selling pressure and further advancement beyond a certain price level, which is known as resistance. To better decide where to enter and leave a transaction, traders benefit from being able to recognize these levels.

For technical research on the Indian stock market, indicators are very crucial. Trades can be properly assessed for trend strength and direction by applying these mathematical algorithms to volume and price data. As an additional component of technical analysis, volume analysis is crucial. Volume that rises in tandem with price changes suggests that the trend is here to stay, whilst volume that falls suggests that momentum is fading.

Being well-versed in the concept of momentum is crucial for engaging in technical analysis. Momentum describes the relative speed with which the value of an asset is rising or falling. There may be reversals or corrections in the trend if certain conditions are met. This form of evaluation relies on each of these ideas. The mathematical computations used by technical indicators are derived from data on volume and pricing. Verifying trends and generating trading signals are both helped by these computations. You can see potential price variations in the next periods as chart formations like triangles and wedges appear. Last but not least, trend analysis is the process of recognizing and assessing trends through the utilization of trend lines and trend channels.

III. STOCK EXCHANGE AND TECHNICAL ANALYSIS

The science of weather prediction is seeing rapid growth with the advent of technical analysis. It uses historical stock price fluctuations as a basis for predicting future price movements. The stock markets have made use of several types of technical analysis since they first began. But it was with the introduction of Dow Theory that the current method of technical analysis got its start. For the purpose of analyzing price trends over time, technical analysis makes use of numerous charts and indicators technical analysis has grown in popularity alongside the rise of information and computer technology.

Technical analysis and stock exchanges are two components of the financial markets that are inextricably linked. Both of these components play a big part in the formation of investment strategies and the dynamics of the market. In the context of the trading of financial securities, such as stocks, bonds, and derivatives, stock exchanges function as centralized marketplaces where buyers and sellers engage in transactions.

The two most prominent stock exchanges in India are the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). Stock exchanges facilitate the buying and selling of financial instruments like shares by providing a central location where investors may go to keep up with market fluctuations. When trying to predict how prices will go in the future, traders and investors often turn to technical analysis. In order to forecast how prices will go in the future, this method looks at past market data, particularly volume and price. Technical analysts hold the view that past price patterns and trends can provide valuable information regarding the market's and prices' likely future behavior.

Conversely, fundamental analysis seeks to discover an organization's intrinsic worth by analyzing its financial health and economic factors. Fundamental analysis is different from this method. In order to make educated decisions about which securities to buy and sell, stock market traders and investors sometimes employ technical analysis. Reviewing price charts, applying various technical indicators, and assessing trade volumes are all ways technical analysts try to spot patterns and trends that could mean changes in market sentiment or potential trading opportunities. Technical analysts rely on a plethora of resources and techniques to get the job done. Important parts of technical analysis include chart patterns. Support and resistance levels, trend lines, and various chart formations like triangles and head and shoulders patterns are all instances of chart patterns. Using these patterns, the analysts can determine the strength of current market trends, find potential entry and exit locations, and more.

Moving averages are an additional crucial tool for technical analysts. As a smoothing impact on price changes over a set time period, moving averages help traders understand the direction and momentum of market moves. In order to confirm the strength of current trends or to detect potential trend reversals, traders often utilize moving average crossings, which happen when shorter-term moving averages cross above or below longer-term moving averages. Opinions about technical analysis vary among market players. Numerous scholarly works have come to the conclusion that it is meaningless on its own technical analysis may not be foolproof, but there is research that back it up). But its usage has skyrocketed due to the telecommunication revolution. By studying investor behavior and how it affects the price action of a financial instrument, technical analysis is able to forecast patterns and trends in the stock markets. All of these actions are referred to as market sentiment. However, it is very dependent on data regarding past prices, times, and volumes. Similar to the science of weather prediction, technical analysis as applied to the stock markets combines the examination of past price data with predictive modeling. Predicting future stock price movements is based on analyzing past swings, just like meteorologists utilize historical weather trends. The introduction of Dow Theory, which marked the beginning of

the current age of technical analysis, is where this method first emerged. In order to study price movements across many timeframes, technical analysis has developed and now uses a plethora of charts, indicators, and tools.

This is why identifying trends is the main focus of technical analysis, which challenges the Efficient Market Hypothesis. Technicians argue that studying price movement is critical for market analysis because prices reflect information like psychological, political, and basic will. Prices are determined by the expectations of both current and potential market participants. Technical analysis is the practice of trying to detect changes in trends early on and remaining involved or in the trade until evidence suggests or demonstrates that the trend has reversed.

Technical analysts plot price data from the past into graphical representations to help them understand and predict future price trends. Technical analysis, sometimes called the "science of charting," relies on charts created by chartists. There can be a deluge of technical trading strategies and tools available to you. Financial market trends and patterns can be seen, say technical analysts.

IV. INDIAN STOCK EXCHANGE

1. Bombay Stock Exchange

The Bombay Stock Exchange is located on Dalal Street in Mumbai. According to market capitalization, the Bombay Stock Exchange (BSE) ranked ninth globally as of December 31, 2012. If you're looking for India's oldest stock exchange, go no further than the BSE. As 1855 began, a gathering of stock dealers was taking place under a banyan tree. But in 1874, when the number of stock brokers increased dramatically, the group changed. In 1875, the group was formally constituted as an organization and given the name "The Native Chor and Stock Brokers Association." In 1986, the British Stock Exchange (BSE) created its own index to measure the exchange's performance; it was named SENSEX. A trading system based on an open outcry floor was in use at one point; however, an electronic trading system superseded it in 1995. The whole transfer was finished by the exchange in about fifty days. One screen-based and automated trading platform that can handle eight million orders daily is BSE Online Trading, or BOLT for short. A transparent and efficient market is offered by the London Stock Exchange (BSE) for trading in debentures, bonds, mutual funds, derivatives, and shares, among other things. Furthermore, it provides an opportunity to participate in financial transactions involving the shares of medium and small-sized enterprises. The Bombay Stock Exchange is home to almost 5,000 distinct companies. As of January 2013, the combined market value of all companies listed on the BSE was expected to be $1.32 trillion. Among all exchanges in the world, BSE Ltd. processes more transactions than any other. The Bombay Stock Exchange (BSE) is one of the world's most renowned exchanges for trading index options. Extra services like risk management, settlement, cleaning, etc. are also available. The goal of the BSE's automated systems and procedures is to promote innovation globally, stimulate the market, and protect investors' interests. indexes that are traded on the BSE< We may thank the Bombay Stock Exchange for these indexes. One thing that makes it special is that it has received ISO 9000:2000 accreditation, making it the second exchange in the world and the first in India. The Sensex, BSE-100, BSE-200, and BSE-500 incorporate the following indices: Dollex-200, BSE-PSU Index, Dollex-30, and the BSE Teck Index.

2. National Stock Exchange

As its designated site, Mumbai is where the National Stock Exchange is located. Incorporated in 1992, it changed its status to that of a stock exchange in 1993. The major goal of this trading session was to make the stock markets more open and honest. It entered the wholesale debt market for the first time in June 1994. The National Stock Exchange's stock market sector started operations in November 1994, while the derivatives segment began operations in June 2000. On the National Stock Exchange, you can find both parts. The trading system is completely automated and uses state-of-the-art screen technology. It has over two lakh terminals for trading. Traders in India can now do it from anywhere thanks to this. More than that, it is actively contributing to the reform of India's equities market, which aims to create a stock market that is more open, integrated, and efficient. Furthermore, as of July 2013, its market worth is about $989 billion. One thousand six hundred thirty-five companies list their shares on the National Stock Exchange. Global and Indian investors alike rely on the CNX NIFTY, an influential index of the National Stock Exchange (NSE). The NSE was first established by a number of India's most illustrious financial institutions. In addition to derivatives, the firm offers trading, settlement, and clearing services for the debt and equity markets. This exchange, one of the biggest in India and the globe, allows traders to buy and sell cash, currencies, and index options.

Many companies, both local and foreign, have a financial interest in the exchange. Private companies based in the country include GIC, LIC, SBI, and IDFC Ltd. An international group of investors has taken a stake in the National Stock Exchange (NSE). A number of investors are involved in this, including City Group Strategic Holdings, Mauritius limited, MS Strategic (Mauritius) limited, Norwest Venture Partners FII (Mauritius), and Tiger Global five holdings.

The automated system that runs on screens allowed the National Stock Exchange to do away with floor dealing, or the open outcry system. Previously, only a small group of people had access to the price data; however, today, everyone, regardless of their location, can access the data. The timely completion of business transactions was ensured by the eventual replacement of a paper-based settlement system with one that relied on computer screens. In addition, investors were able to electronically store and manage their bonds and shares using a demat account, which was set up by the National Securities Depository Limited (NSDL), which was formed by the National Securities Exchange (NSE). All an investor needs to hold and trade is one share. The elimination of physical handling of securities has greatly reduced the chances of damage or misplacing them. Having the shares has also become more convenient. More and more domestic and foreign investors are able to access the Indian stock market thanks to the National Securities Exchange's (NSE) electronic security handling, convenience, transparency, low transaction rates, and efficient trade.

V. TECHNICAL ANALYSIS'S USE IN INDIAN STOCK TRADING

Since technical analysis gives traders and investors a systematic way to understand market movements and make decisions based on correct information, it is crucial that they

apply it when trading Indian stocks. Given the ever-changing nature of the Indian stock market—which is affected by numerous factors such as economic indicators, corporate developments, and global events—technical analysis is especially helpful in assessing price movements and identifying possible trading opportunities.

One of the most important uses of technical analysis in the Indian stock market is trend spotting. When traders use tools like charts and technical indicators to examine historical price data, they can identify trends like uptrends, downtrends, or sideways movements. By utilizing this trend analysis, market players can gauge the overall sentiment of the market and anticipate the future movement of prices. For instance, an uptrend is indicated when a stock's price consistently makes higher highs and lower lows; this could mean that there are opportunities to buy the stock. Furthermore, technical analysis allows traders to identify key levels of support and resistance. These levels encompass the normal buying and selling pressures on a stock's price. These levels are vital because they reveal prospective entry and exit points for transactions, which is crucial information to have. In the Indian stock market, where liquidity and market mood are only two of many elements that can affect price movements, knowing where these levels of support and resistance are can help traders make more informed decisions and better manage their risk. Traders can improve their risk management using this knowledge.

Furthermore, by utilizing a number of chart patterns and indicators, technical analysis enables the detection of possible buy or sell signals. Head and shoulders, double tops, and flags are some of the chart patterns that can be used to identify potential trend reversals or continuation patterns. Traders can learn the ins and outs of the market from these patterns. Additionally, technical indicators such as Bollinger Bands, Relative Strength Index (RSI), and Moving Average Convergence Divergence (MACD) are widely used to assess trend strength, identify overbought or oversold conditions, and generate trading signals. Furthermore, technological advancements have had an additional beneficial effect on the use of technical analysis in trading Indian equities.

VI. REVIEW LITERAURE

Ayala et al. [2021][1] presented that An examination concerning the enhancement of specialized examination strategies in securities exchange records. The work centers around the utilization of machine learning methods. With regards to finding fruitful exchanging open doors and improving dynamic cycles in the securities exchange, the creators represent the adequacy of machine learning (ML) by using approaches, for example, support vector machines (SVM), arbitrary backwoods, and profound learning calculations. Through their examination, they have shown the meaning of coordinating regular procedures of specialized examination with state of the art machine learning models to create predominant results in financial exchange exchanging and forecast.

Kumar, Jain & Singh et al. [2021][2] presented that An exhaustive study on the subject of stock market forecasting by utilizing several computational intelligence methodologies. Artificial neural networks (ANNs), hereditary calculations, and fluffy rationale frameworks are

a portion of the machine learning strategies that are used at guaging stock costs and market patterns. The authors present an overview of these diverse machine learning algorithms. According to the results of their poll, they shed light on upcoming trends and issues in stock market forecasting, as well as highlight the strengths and limitations of various artificial intelligence methodologies. Researches and practitioners who are interested in gaining a better knowledge of the landscape of computational intelligence in stock market analysis will benefit greatly from the work that Kumar and his colleagues have been doing.

Thakkar & Chaudhary et al. [2021][3] present a point by point overview that spotlights on the use of deep neural networks (DNNs) with regards to financial exchange forecast. In this article, the writers examine the earnest requirement for better determining methods in the monetary business sectors and research the troubles and potential that are connected with the usage of DNNs for monetary market anticipating. In their conversation of the different structures and approaches of DNNs, Thakkar and Chaudhari feature the advantages and cutoff points of these networks in terms of their capacity to catch complex examples and patterns in financial exchange information. This conversation depends on an extensive evaluation of the pertinent writing. The overview gives huge experiences into the changing scene of DNN-based financial exchange expectation models and demonstrates future examination headings to resolve existing issues and work on prescient precision. Likewise, the review incorporates ideas for future examination points.

Razmjoo et al. [2021][4] presented research on the technical analysis of energy sustainability, specifically with regard to the utilization of renewable energy sources in order to increase the reduction of carbon dioxide emissions. This research highlights the wider application of technical analysis approaches in tackling sustainability concerns and maximizing resource utilization. This highlights the importance of interdisciplinary approaches in addressing complex societal and environmental issues when finding solutions to these problems.

Mehtab et al. [2021][5] presented to make a commitment to the current collection of examination by researching the utilization of machine learning. The subject of their exploration, which was introduced inside the system of a discussion, is an examination of the productivity of machine learning calculations and LSTM networks in foreseeing stock qualities. Utilizing verifiable value information and specialized pointers, the creators represent the capacity of deep learning models to catch complex examples and patterns in monetary business sectors. This is achieved by using the information. Their exploration adds to the growing assemblage of examination on deep learning-based ways to deal with financial exchange expectation. Moreover, it features the meaning of using present day computational devices to work on the precision of anticipating and the dynamic cycles associated with speculation the board.

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Sen & Mehtab et al. [2021][7] presented that investigate the domain of unfamiliar trade (Forex) information anticipating by using Long Short-Term Memory (LSTM) networks related to specialized and macroeconomic factors. Through the use of both specialized markers, (for example, moving midpoints and the general strength list) and macroeconomic components, their exploration attempts to estimate the heading in which unfamiliar trade (Forex) information will move. A holistic approach to Forex forecasting is represented by the incorporation of LSTM networks with a comprehensive collection of indicators. This technique highlights the significance of incorporating several dimensions of market data in order to achieve improved predicted accuracy.

Wu, Liu et al. [2022][8] presented that to offered a clever technique that they name S_I_LSTM. This strategy consolidates feeling investigation and various information sources. The reason for their exploration is to improve the accuracy of securities exchange determining by considering ordinary monetary information as well as the feeling examination of news stories, web-based entertainment posts, and other literary sources. The S_I_LSTM model is a better approach to foreseeing the financial exchange. It underscores the meaning of joining a wide assortment of information sources and strategies for opinion examination to work on the exactness and strength of determining.

Kumar et al. [2022][9] presented that through the application of statistical and machine learning methods. Their research most likely offers a summary of the most recent developments and methodology in the field of stock market prediction research. It envelops a wide assortment of machine learning calculations, factual models, and determining procedures. The authors Kumar et al. provide insights into the comparative performance, strengths, and limitations of various prediction models by synthesising existing literature and empirical studies.

Krishnamoorthy and Mahabub et al. [2022][10] presented that Using the Bombay Stock Exchange (BSE) as a point of reference, carry out an empirical analysis on construction portfolios. Their research most likely investigates the performance and features of construction industry portfolios within the framework of the BSE. This would provide insights into the opportunities and hazards that are special to the construction sector regarding investments. Krishnamoorthy and MahabubBasha contribute to the understanding of sectoral dynamics within financial markets by conducting an analysis of the dynamics of construction sector stocks and their impact on portfolio diversification and risk management strategies. This analysis also provides guidance for investors who are looking to optimize their investment portfolios.

Fang et al. [2022][11] provides a comprehensive assessment on cryptocurrency trading, which provides insights into the changing landscape of digital asset markets. The research investigates a number of facets of cryptocurrency trading, including as the dynamics of the market, trading methods, regulatory frameworks, and technological advancements. Fang et al. present a complete overview of the cryptocurrency trading environment by synthesising current

research and empirical studies. They highlight new trends and difficulties in this quickly evolving domain by highlighting the ecosystem's ecology. Their survey makes a contribution to the understanding of digital asset markets and provides information for investors, traders, and policymakers who are navigating the difficulties of cryptocurrency trading. By doing a writing survey on artificial knowledge (artificial intelligence) procedures in finance and monetary business sectors.

Kurani et al. [2023][12] play out a top to bottom near assessment support vector machines (SVM) with the end goal of stock guaging. The creators give bits of knowledge into the qualities and cutoff points of every method. Their examination makes a critical commitment to the information on machine learning approaches in securities exchange expectation and gives imperative proposals to professionals and specialists who are hoping to execute fruitful guaging models in monetary business sectors.

Dash, Nguyen, Cengiz, and Sharma et al. [2023][13] a support vector relapse (SVR) model that has been calibrated. Their exploration is focused on further developing the SVR calculation to build the prescient exactness it has with regards to foreseeing stock costs. The objective of Run et al. is to work on the exhibition of securities exchange forecast models by adjusting model boundaries and refining the SVR structure. This would permit dealers and financial backers to get more trustworthy figures. Their work makes a commitment to the persistent improvement of machine learning approaches in the field of monetary estimating. It likewise features the meaning of model optimization in terms of accomplishing exact expectations with regards to dynamic economic situations.

VII. CONCLUSION

The current study is the result of a thorough review of the literature and appropriate analysis of investor-provided sample data. For researchers, analysts, and academicians, the impact of technical analysis is an excellent field of study. The researcher has periodically undertaken a number of initiatives to determine the most effective combination of technical analysis approaches as well as the viability of such a combination in the stock markets. However, the majority of the time, either technical or fundamental analysis is focused on the Indian stock market, and only one analytical technique is used for outside markets. Furthermore, there hasn't been much research done in India on the impact of technical analysis on investor decision-making in the Indian stock market using survey data.

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