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Ranking Investment Preferences in India's Dynamic Market: From SIPs to ETFs

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Abstract: This study examines the Indian stock market using the Weighted Point Method (WPM) to evaluate various investment options. The research focuses on five key investment vehicles: Exchange-Traded Funds (ETFs), Government Savings Schemes, Bonds and Debentures, Systematic Investment Plans (SIPs), and Fixed Deposits (FDs). These options were assessed across four critical indicators: Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis. The WPM analysis revealed that Systematic Investment Plans (SIPs) emerged as the most preferred investment option, achieving the highest preference score of 0.91795. SIPs demonstrated consistently strong performance across all evaluated criteria, suggesting they offer a balanced approach to investing with potential for steady growth and effective risk management. Bonds and Debentures ranked second with a preference score of 0.72492, showing particular strength in Market Sentiment. Fixed Deposits (FDs) secured the third position with a score of 0.64406, highlighting their continued relevance in the Indian investment landscape, especially for risk-averse investors. Government Savings Schemes and ETFs ranked fourth and fifth respectively, each showing strengths in specific areas. The study underscores the complex and dynamic nature of the Indian stock market, emphasizing the importance of considering multiple factors in investment decision-making. It highlights the value of quantitative methods like WPM in providing a structured approach to comparing diverse investment options. The findings suggest that while SIPs appear to be the most attractive option overall, the Indian market offers a range of investment vehicles catering to different risk appetites and financial goals. The research concludes that investors should consider their personal objectives, risk tolerance, and investment horizon when making decisions, and regularly review their strategies in light of evolving market conditions and economic indicators.

Keywords: Indian Stock Market, Weighted Point Method (WPM), Systematic Investment Plans (SIPs), Investment Analysis, Economic Indicators, Corporate Earnings, Market Sentiment, Sectoral Analysis, Exchange-Traded Funds (ETFs) and Multi-Criteria Decision Making (MCDM).

1. INTRODUCTION

Recent literature highlights the significance of emerging markets for two primary reasons. Firstly, emerging markets possess well-developed information distribution systems. Messages, once published, reach different groups of investors at various times, which means the relationship between the message and its reception can vary. This discrepancy allows for a temporary lead-discount relationship where some investors, who have better access to information than others, can potentially earn above-normal profits. Secondly, emerging markets benefit from a well-developed institutional infrastructure for financial regulation. Efficient organizational arrangements and skilled regulatory frameworks are essential for the proper functioning of the market, particularly in its early stages of development [1]. When investing in the stock market, participants seeking returns should consider various factors, including macroeconomic variables, which can significantly impact stock prices and returns. This empirical research shows that movements in the share prices of the Nifty 50 index are influenced by factors such as Foreign Institutional

Investment (FII), exchange rates, gold prices (per 10g), and liquidity issues. Understanding changes in these macroeconomic variables helps readers comprehend their impact on the stock market. Important variables include the Index of Industrial Production (IIP) and the Wholesale Price Index (WPI) for inflation. Additionally, American economic variables like interest rates, inflation, and Gross Domestic Product (GDP) also affect the Indian capital market [2]. An institutional investor is an entity or investment fund that allocates capital either domestically or internationally, regardless of where it is registered. Examples of institutional investors include hedge funds, insurance companies, pension funds, and mutual funds. The burgeoning market in India has captivated foreign investors, known as Foreign Institutional Investors (FIIs), drawing them to the Indian equity market. The increasing involvement of FIIs has significantly transformed the Indian stock market, both qualitatively and quantitatively, enhancing its breadth and depth. Countries like India, experiencing relatively higher growth compared to other economies, have become attractive destinations for FIIs. Positive investor sentiment towards India has been bolstered by a series of reform measures announced by the government in recent months [3]. Since the late 1980s, India's stock market has significantly evolved by adopting modern techniques to enhance its development. The economic reforms introduced in 1991 played a crucial role in this transformation. These reforms subtly but profoundly impacted the market, leading to an increase in the number of listed companies, shareholders, and overall market capitalization. As a result, India has emerged as a very active and leading market among developing countries. Economists often focus on stock prices moving 'above or below' people's expectations, which are thought to reflect underlying economic principles. An increase in stock prices is seen as an indicator of future economic growth, while a decline in stock prices is associated with potential economic slowdowns [4]. The stock market is diverse in size and structure, with various factors influencing its trends. It is a highly unstable deterministic system. According to the Efficient Market Hypothesis (EMH), the market corrects itself, meaning the current stock price is the most accurate reflection of its value, neither undervalued or overvalued. New information is immediately reflected in price changes. Factors such as depreciation and exchange rates are analyzed, with technical analysis traditionally used for predictions. However, technical analysis has proven to have low accuracy. In contrast, machine learning handles noise and information scarcity more efficiently, offering imprecise opportunities for market predictions not covered by training data [5]. Due to liberalization measures, India's stock market has seen substantial changes. The Bombay Stock Exchange (BSE) has emerged as one of the world's largest stock exchanges in terms of the number of listed companies, encompassing large, medium, and small firms. Foreign capital inflows have significantly contributed to the development of the stock market. India has carved out a niche for itself in the market, accounting for a quarter of the total portfolio capital inflows to the emerging market economies (EME) group [6]. Millions of lives are being pushed into poverty, and industries are striving to tackle existential threats. Employees face the risk of job loss, and society is experiencing significant upheaval. Epidemics are shifting paradigms, leading to devastating consequences. This crisis is also impacting the stock market, making it crucial to analyze stock price volatility in the context of the Covid-19 outbreak. Stock prices serve as an appropriate measure of a company's performance and returns to shareholders. Their movement is influenced by both market and organizational factors, according to financial principles and behavior in the capital market. Financial theory suggests that any economic or environmental phenomenon impacts investors' perspectives, which in turn affects stock prices [7]. In the studies mentioned earlier, predominantly conducted in the West, an anomaly has been identified specifically in developed capital markets. This raises the question of whether similar anomalies would occur in other segmented capital markets, given the differences in distance, institutional arrangements, and culture. Confirming such phenomena in another market would bolster confidence in this empirical field. Therefore, it is intriguing to explore whether such discrepancies exist in a developing market like India, which belongs to the East. This paper investigates the daily return patterns in the Indian stock market over a one-month period [8]. Such an order-driven market ensures transparency throughout the entire process. Retail investors have access to online trading facilities through a registration system that facilitates trading via brokers. However, institutional investors have the option of Direct Market Access (DMA), allowing them to use trading terminals provided by their brokers to place orders directly into the trading system. The settlement cycle for the equity spot market follows a T+2 rolling settlement. With these features, the Indian market presents a complex landscape within the capital market, making the performance of IPOs an intriguing subject of study. While the pricing and performance of IPOs are well-documented in Western markets, there is limited literature on this topic in the Indian context. Thus, we aim to examine the pricing and long-term performance of IPOs in the Indian stock market [9]. Financial asset prices are random variables, not deterministic variables. In the short term, these prices are often considered lognormal random variables. Therefore, the return on financial assets, which reflects relative price changes, is typically evaluated by comparing recorded prices and is usually distributed log normally. Volatility measures the dispersion in the probability density of asset prices, with the standard deviation of a random variable (the square root of its variance) serving as a general metric for this spread. Predicting equity price variations is challenging, and it is commonly assumed that continuous returns are relatively independent of each other. Nonetheless, extensive work has been done

in traditional econometric time series to model conditional volatility in developed markets [10]. In today's business climate, numerous small and medium-sized enterprises (SMEs) adopt uncomplicated and straightforward organizational frameworks. Many SMEs focus on niche markets as part of their strategic approach. The significance of specific managerial roles differs significantly between managing a small business and managing a large one. Business success does not singularly define satisfaction for business owners. Various factors influence the success of small businesses, with one key factor being that owners often derive high personal satisfaction from their ownership roles, primarily because they typically spend the majority of their time engaged in activities they are passionate about [11]. In the context of growing investment opportunities, it's crucial for investors to consider building an international portfolio. For Indian investors, understanding the interdependence between India's stock market and major global stock markets is vital. Studying the correlation between the Indian stock market and other global markets helps investors plan for international pricing and diversification of their portfolios. This examination of market correlations plays a key role in reducing portfolio risk. By identifying equity markets that are less correlated with the Indian market, investors can make more informed decisions and potentially enhance the stability and performance of their investments [12]. An efficient market can be defined as a market in which the market price reflects the true value of investments. This means that in each period, the market price closely represents the real value of the investment. While it's not required that market prices always equal real values, the key condition is that any deviations are random. In such a scenario, market prices may differ from actual values occasionally, but these differences are unpredictable. This randomness characterizes an efficient market. For investors, this poses challenges because accurately identifying undervalued securities becomes exceedingly difficult in such a market [13]. EVA was developed in the 1980s as a novel financial performance metric. It is used internally to assess the firm's performance and should also be applied externally. EVA represents profits from operating activities and offers real value beyond monetary terms, reflecting managerial effectiveness and project success. It indicates how profitable a company is. Despite its benefits, EVA has faced criticism for lacking a logical basis and being insufficient to fully determine market value. A negative EVA suggests that the company is destroying capital value and that investments would be more beneficial elsewhere [14]. The importance of stock market forecasting in India lies in its critical role in supporting the economy. Despite the complexities and challenges involved, accurate forecasting remains essential for market efficiency. The stock market is influenced by numerous factors, necessitating the use of advanced analytics and forecasting tools. Techniques such as machine learning are crucial in identifying and capturing complex relationships and patterns within data. Accurate stock market forecasts benefit investors, policymakers, and the general public, contributing significantly to the success and stability of the Indian economy [15].

2. METHODOLOGY

Exchange-Traded Funds (ETFs): An exchange-traded fund (ETF) is a unique investment vehicle that combines the features of individual stocks with the diversification of large portfolios. ETFs can be bought and sold similar to stocks, offering investors a convenient way to access a wide range of assets or indices. They are designed to track various collections of securities, providing investment opportunities across different strategies such as earnings, speculation, and capital appreciation. Additionally, ETFs serve as effective tools in investor portfolios, offering potential hedging or risk mitigation benefits.

Government Savings Schemes: A savings plan involves making regular small deposits to encourage saving. Typically, such schemes are introduced by the Government of India, banks, or public sector undertakings (PSUs) in India with the aim of promoting savings.

Bonds and Debentures: While a debenture represents a form of commercial borrowing, it does not encompass all types of business loans. For instance, loans that are secured with collateral differ from debentures. Similarly, bonds issued by businesses also contrast with traditional lender-provided loans.

Systematic Investment Plans (SIPs): SIPs generally offer higher returns over the long term compared to FDs. They provide the opportunity for regular income, albeit typically lower than other options. Mutual funds through SIPs can potentially offer growth, but they are subject to market fluctuations and associated risks. It's important to consider these factors when investing.

Fixed Deposits (FDs): A fixed deposit (FD) is an investment made by individuals in banks for a specific period. It involves depositing a certain amount of money when opening the account, which then earns interest at a predetermined fixed rate.

Economic Indicators: An economic indicator consists of economic data, typically at the macroeconomic level, which researchers use to analyze current or potential investment opportunities. These indicators are essential for assessing the overall economic health.

Corporate Earnings: Earnings season holds great importance for companies listed on the stock exchange, as it is the time when they release their quarterly financial results. Typically occurring about two weeks after the quarter ends (in January, April, July, and mid-October), this period spans approximately six weeks.

Market Sentiment: Other factors, such as economic indicators, political stability, global market trends, and individual company performance, also play significant roles. Therefore, while a loss of confidence among investors in the UK can impact the situation, it is just one aspect among several that investors take into account.

Sectoral Analysis: Sectoral analysis is an inherent aspect of economics, focusing on the economic and financial conditions and future outlook of specific sectors. This analysis is crucial for investors and institutions assessing the potential performance of companies within that sector and making informed decisions about their investments. It provides valuable insights into how well a sector is anticipated to perform, aiding in informed judgments.

WSM Method: The core concept of these methods is to calculate a single Pareto optimal solution, which the decision maker (DM) either accepts or uses to guide the optimization process based on preferences and information from current and previous Pareto optimal solutions. This process creates an iterative cycle of generating new Pareto optima until the DM is satisfied with the results. An interactive approach, where the DM is highly active. al energy [26]. Using multicriteria analyses for energy management planning has become increasingly important for decision-makers. These methods offer solutions to complex problems that go beyond traditional single-criterion decision-making, which typically focuses on minimizing costs and maximizing benefits. Multicriteria analyses provide a deeper understanding of the intrinsic features of decision-making problems and improve the role of participants in the decision-making process. They facilitate compromise and joint decisions, simplify models in realistic situations, and help researchers understand sentiments. These methods enhance the quality of results by making them more transparent, rational, and efficient. They also aid in negotiating, measuring, and communicating priorities. In the 1970s, energy planning efforts were primarily focused on the energy sector, exploring established energy-economic relationships and developing intentional energy models to accurately forecast future energy demand. This approach aimed to identify more cost-efficient delivery options, making single-criterion methods popular at the time [27]. Multi-Criteria Decision Making (MCDM) integrates both qualitative and quantitative approaches into a comprehensive solution, linking various alternatives with their outcomes. This technique is relevant to many professions and everyday decisions. MCDM methods can be applied to a wide range of problems, including policy, strategy, and selection processes. For decades, decision-making techniques have leveraged MCDM to resolve complex issues. The journey of MCDM is quite old, but significant development began in the 1940s and 1950s. In 1944, the theory of utility by Von Neumann and Morgenstern marked a pivotal point, bringing modern decision science into the mainstream. Since then, targeted programming has continued to advance the field [28]. Despite the limitations of AHP in terms of time and resources, it remains a widely used systematic method for selecting the best alternative. Numerous studies have attempted to address its weaknesses. However, many of these studies seldom focus on the hierarchical structure's complementary analysis. Typically, comparisons are made at a single level, but this approach can solve problems that arise within the hierarchy. The main challenge is maintaining consistency in decision-making due to the significant increase in the number of comparisons required. To address these shortcomings, this study proposes a method for assigning weights that utilizes the hierarchical structure and pairwise comparisons inherent in AHP while mitigating its limitations [29]. Due to fundamental constraints in the Riemann approximation, issues arise when modeling uncommon fan types, resulting in unstable solutions. Another challenge is the inherent oscillations characteristic of WPMs (Weighted Essentially Non-Oscillatory Methods), exacerbated by artificial viscosity in renewal processes or non-dissipative schemes. These oscillations resist conventional mitigation methods.

To address these challenges, this paper proposes an LDS approach specifically tailored for simulating rare fans using the multi-wave approximation driven by an exact Riemann solver. Furthermore, leveraging WPM principles, the proposed method effectively suppresses non-oscillatory behavior encountered in LTS algorithms. Specifically, we adopt the RCM method as suggested by Leveque, which accommodates neglected bed slopes in its application to SWEs. Testing under CFL numbers up to 25 demonstrates that our LTS scheme achieves satisfactory accuracy for solving SWEs [30].

3. RESULTS AND DISCUSSION

TABLE 1. Indian stock market

	Economic Indicators	Corporate Earnings	Market Sentiment	Sectoral Analysis
Exchange-traded funds (ETFs)	10.10	150.63	97.82	56.91
Government Savings Schemes	26.23	121.23	88.52	26.28
Bonds and Debentures	55.38	131.42	48.72	45.25
Systematic Investment Plans (SIPs)	78.41	195.20	50.61	35.63
Fixed Deposits (FDs)	35.13	188.64	96.23	33.48

To integrate Table 1 on the Indian stock market using the Weighted Point Method (WPM), we analyze various financial instruments based on four key indicators: Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis. Each category is assigned a weight reflecting its importance. ETFs score highest in Economic Indicators (10.10), followed closely by Corporate Earnings (150.63), Market Sentiment (97.82), and Sectoral Analysis (56.91). Government Savings Schemes excel in Economic Indicators (26.23) and Corporate Earnings (121.23), with moderate scores in Market Sentiment (88.52) and Sectoral Analysis (26.28). Bonds and Debentures lead in Economic Indicators (55.38) and Corporate Earnings (131.42) but score lower in Market Sentiment (48.72) and Sectoral Analysis (45.25). SIPs and Fixed Deposits exhibit varying strengths across these indicators, showcasing their relative performance and market impact.

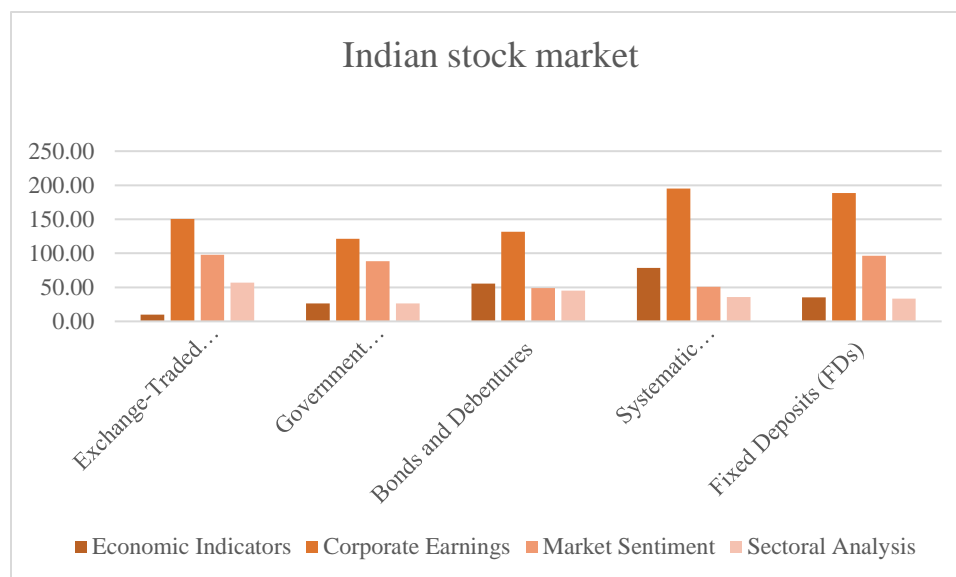


FIGURE 1. Indian stock market

Figure 1 uses the Weighted Point Method (WPM) to assess the Indian stock market across key indicators: Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis. ETFs, SIPs, and Fixed Deposits show strong performances in Corporate Earnings and Market Sentiment, while Government Savings Schemes excel in Economic Indicators. Bonds and Debentures demonstrate balanced scores across all indicators.

TABLE 2. Performance value

	Performance value			
Exchange-traded funds (ETFs)	0.12882	0.77167	0.49806	0.46178
Government Savings Schemes	0.33452	0.62106	0.55038	1.00000
Bonds and Debentures	0.70629	0.67326	1.00000	0.58077
Systematic Investment Plans (SIPs)	1.00000	1.00000	0.96266	0.73758
Fixed Deposits (FDs)	0.44803	0.96639	0.50629	0.78495

Table 2 presents performance values using the WPM Method across various financial instruments. Systematic Investment Plans (SIPs) achieve the highest overall performance value of 1.000, indicating strong scores across all categories: Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis. Bonds and Debentures also perform well with a perfect score in Market Sentiment and solid scores in other areas. Government Savings Schemes rank high in Sectoral Analysis with a score of 1.000, showcasing their sector-specific strength. ETFs and Fixed Deposits exhibit balanced performances across these metrics, reflecting their diverse impacts within the market.

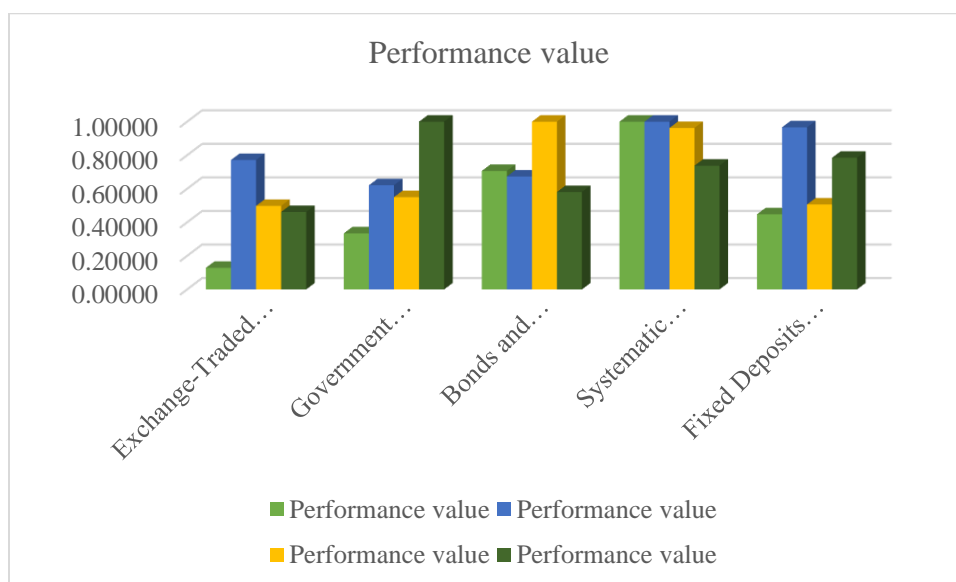


FIGURE 2. Performance value

Figure 2 uses the WPM Method to depict performance values across financial instruments. SIPs lead with perfect scores in Corporate Earnings and strong performances elsewhere. Government Savings Schemes excel in Sectoral Analysis, Bonds and Debentures in Market Sentiment, while ETFs and Fixed Deposits show balanced performances across categories.

TABLE 3. Weights

Weight			
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25

Table 3 outlines equal weights (0.25 each) assigned to Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis using the WPM Method. This uniform distribution ensures each indicator contributes equally to the overall assessment of financial instruments or market segments.

TABLE 4. Weighted Normalized Decision Matrix

	Weighted normalized decision matrix			
Exchange-traded funds (ETFs)	0.59910	0.93726	0.84008	0.82435
Government Savings Schemes	0.76051	0.88773	0.86132	1.00000
Bonds and Debentures	0.91674	0.90583	1.00000	0.87297
Systematic Investment Plans (SIPs)	1.00000	1.00000	0.99053	0.92673
Fixed Deposits (FDs)	0.81814	0.99149	0.84353	0.94126

Table 4 presents the Weighted Normalized Decision Matrix using the WPM Method for financial instruments. Systematic Investment Plans (SIPs) achieve the highest overall scores, particularly excelling in Corporate Earnings and Market Sentiment. Bonds and Debentures score perfectly in Market Sentiment and maintain strong performances in other areas. Government Savings Schemes rank high in Sectoral Analysis. ETFs and Fixed Deposits display balanced scores across all categories, reflecting their consistent impact across Economic Indicators, Corporate Earnings, Market Sentiment, and Sectoral Analysis as weighted and normalized within the methodology.

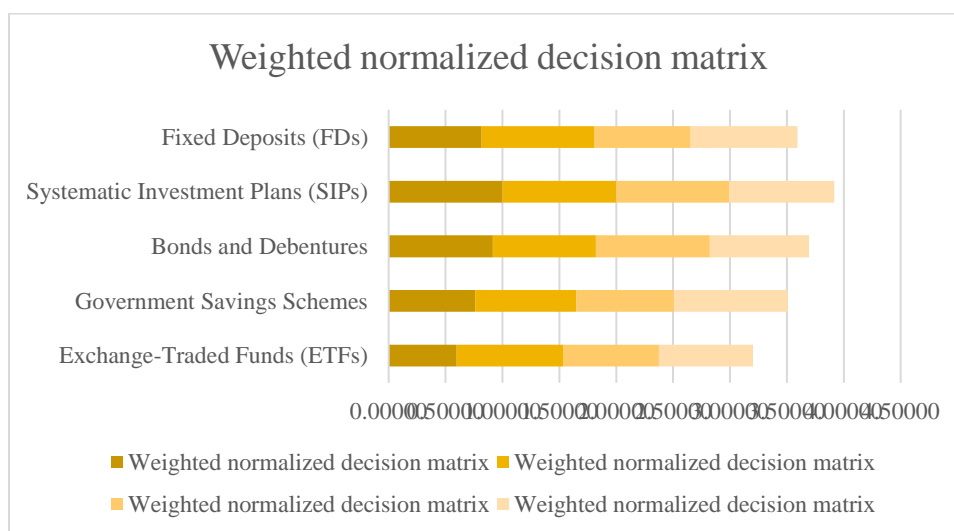


FIGURE 3. Weighted Normalized Decision Matrix

The provided data in Figure 3 presents a Weighted Normalized Decision Matrix (WPM Method) assessing various investment options. Each row represents different investment vehicles such as Exchange-Traded Funds (ETFs), Government Savings Schemes, Bonds and Debentures, Systematic Investment Plans (SIPs), and Fixed Deposits (FDs), evaluated against criteria like returns, risk, liquidity, and stability. The matrix scores normalize the values, facilitating comparison to guide investment decisions effectively.

TABLE 5. Preference Score & Rank

	Preference Score	Rank
Exchange-traded funds (ETFs)	0.38885	5
Government Savings Schemes	0.58151	4
Bonds and Debentures	0.72492	2
Systematic Investment Plans (SIPs)	0.91795	1
Fixed Deposits (FDs)	0.64406	3

Table 5 utilizes the WPM Method to assign Preference Scores and Ranks to different investment options. Systematic Investment Plans (SIPs) achieved the highest score of 0.91795, securing the top rank. Bonds and Debentures followed with a score of 0.72492, placing second. Fixed Deposits (FDs) scored 0.64406, ranking third, while Government Savings Schemes and Exchange-Traded Funds (ETFs) attained scores of 0.58151 and 0.38885, respectively, occupying the fourth and fifth ranks. This structured evaluation offers a clear hierarchy based on weighted criteria, aiding in informed decision-making for investors seeking optimal investment avenues.

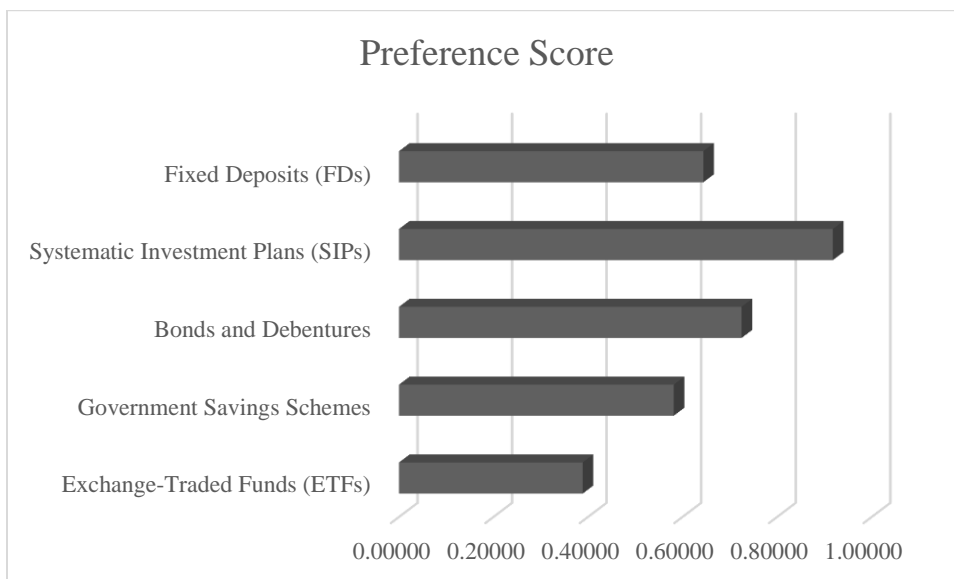


FIGURE 4. Preference score

Figure 4 presents the Preference Scores of various investment options using the WPM Method. Systematic Investment Plans (SIPs) lead with a score of 0.91795, followed by Bonds and Debentures at 0.72492. Fixed Deposits (FDs) score 0.64406, Government Savings Schemes 0.58151, and Exchange-Traded Funds (ETFs) 0.38885, reflecting their respective investment preferences.

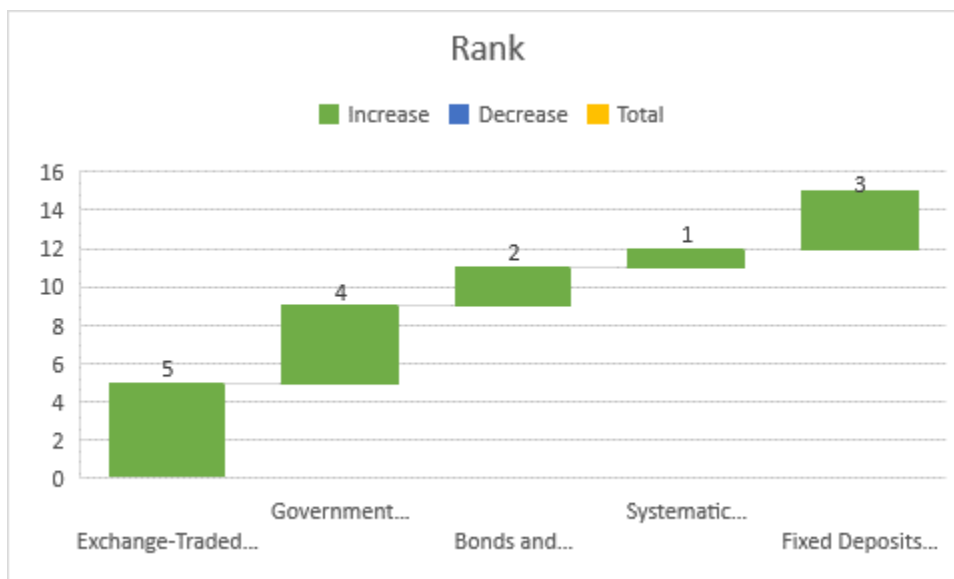


FIGURE 5. Rank

Figure 5 displays the ranks of various investment options based on the WPM Method. Systematic Investment Plans (SIPs) hold the top rank (1), followed by Bonds and Debentures (2), Fixed Deposits (FDs) (3), Government Savings Schemes (4), and Exchange-Traded Funds (ETFs) (5), indicating their relative investment attractiveness.

4. CONCLUSION

The Indian stock market presents a complex and dynamic investment landscape, influenced by various factors including economic indicators, corporate earnings, market sentiment, and sectoral performance. The study utilized the Weighted Point Method (WPM) to evaluate different investment options, providing valuable insights for potential investors. Systematic Investment Plans (SIPs) emerged as the most preferred investment option, ranking first with the highest preference score of 0.91795. This suggests that SIPs offer a balanced approach to investing, potentially providing strong returns while managing risk effectively. Their performance was consistently high across all evaluated criteria, making them an attractive choice for investors seeking steady growth over time. Bonds and Debentures secured the second rank with a preference score of 0.72492. This indicates that these fixed-income securities maintain a strong position in the Indian market, likely due to their stability and predictable returns. They performed particularly well in the Market Sentiment category, suggesting investor confidence in these instruments. Fixed Deposits (FDs) ranked third with a score of 0.64406, highlighting their continued relevance in the Indian investment landscape. Despite offering lower returns compared to some other options, FDs remain popular, possibly due to their low risk and guaranteed returns, which appeal to conservative investors. Government Savings Schemes and Exchange-Traded Funds (ETFs) ranked fourth and fifth respectively, with scores of 0.58151 and 0.38885. While these options scored lower overall, they still play important roles in diversified investment portfolios. Government Savings Schemes, for instance, showed strength in Sectoral Analysis, indicating their importance in specific economic sectors. The analysis also revealed the multi-faceted nature of the Indian stock market. Economic indicators, corporate earnings, market sentiment, and sectoral analysis all play crucial roles in determining the performance and attractiveness of different investment options. This underscores the importance of a holistic approach to investment decision-making, considering multiple factors rather than relying on a single metric. Furthermore, the study highlights the value of quantitative methods like WPM in investment analysis. By assigning weights to different criteria and normalizing scores, the method provides a structured approach to comparing diverse investment options. While SIPs emerged as the top-ranked investment option, the Indian stock market offers a range of investment vehicles catering to different risk appetites and investment goals. Investors should consider their personal financial objectives, risk tolerance, and investment horizon when making decisions. The dynamic nature of the market also necessitates regular review and adjustment of investment strategies. As the Indian economy continues to evolve, staying informed about market trends, economic indicators, and policy changes will be crucial for making sound investment decisions in this vibrant and growing market.

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