

EVALUATION OF INVESTMENT DECISION MAKING CRITERION OF INDIVIDUAL SALARIED PERSON IN WARDHA DISTRICT

 Atul Firke

 Dr. A. K. J. Mansuri

Introduction

In recent years, the landscape of financial market investments has evolved significantly, driven by a desire to mitigate risk. Diversification across various investment alternatives has become a common practice, not only among institutional investors but also among individual investors. Developing countries' financial markets now account for a substantial portion, contributing to two-thirds of global investments. Notably, the Indian financial industry has emerged as a favored destination for foreign institutional investors. India holds the distinction of being the fifth-largest economy globally in nominal Gross Domestic Product (GDP) and ranks third when taking into account Purchasing Power Parity (PPP).

In this evolving financial landscape, the service industry in India has taken the forefront as the most crucial and rapidly expanding sector. Individual salaried individuals base their investment decisions on a combination of factors tailored to their financial circumstances and aspirations. These criteria encompass their specific financial objectives, encompassing goals like homeownership, retirement savings, education funding, and emergency funds. Personal risk tolerance plays a pivotal role, dictating whether they lean towards low-risk options such as bonds or embrace higher-risk assets like stocks and real estate in pursuit of greater returns. The timeframe they allocate for investments, known as the time horizon, influences their strategy, with longer horizons allowing for more aggressive approaches. Income, expenses, and budget comprehension determine their financial capacity for investment, while diversification and tax efficiency are also considered to optimize returns. Additionally, ethical considerations, past performance, costs, and

*Assistant Professor, G. S. College of Commerce, Wardha.(Research Scholar)

**Associate Professor, G. S. College of Commerce, Wardha. (Guide)

emotional discipline further shape their investment choices. To succeed financially, individuals should continually align their strategy with changing circumstances and seek professional advice when necessary.

Investing money across various investment options is a challenging task that necessitates a profound grasp of risk- return analysis (Bhaskaran & Andavan, 2012). Investment, in essence, entails deploying financial resources and assets with the objective of generating regular income, capital appreciation, or a combination of both (Venkateshraj, 2015; Bishnoi, 2014). The concept of investment is inherently intricate and influenced by a multitude of factors (Lerner, Li, Valdesolo, & Kassam, 2015). Researchers worldwide have examined investor behavior in different countries to enhance our understanding of how individuals manage their investments under diverse circumstances (Kaur & Kaushik, 2016). Traditionally, it was believed that each investor's assessment was founded on certain principles of modern portfolio theory, the Capital Asset Pricing Model, and the efficient market hypothesis (Yilidirim, 2017). Nonetheless, a growing body of academics and researchers have observed that the majority of investors tend to steer clear of selecting their investment options, stocks, and portfolios solely based on these theoretical assumptions (Mamun, Syeed, & Yasmeen, 2015).

Instead, a multitude of factors, including perceptions, interests, attitudes, patterns, awareness, and more, significantly influence the financial decision-making process of individual investors (Hemalatha, 2019). Consequently, it becomes essential to understand these determinants that shape the financial choices of Information Technology Professionals. Such insights can assist financial intermediaries in devising policies and strategies that cater to the investment needs of these professionals (Arun & Kamath, 2015). For individual salaried individuals, crafting an investment strategy that aligns with their unique financial circumstances and long-term goals is crucial. Regularly reviewing and adjusting this strategy as personal circumstances evolve is also vital for achieving financial success. Additionally, seeking guidance from a financial advisor can provide valuable insights and expertise in making informed investment decisions.

Materials and method

Investment decisions for individual salaried persons encompass a spectrum of choices, each with its unique characteristics and considerations. Firstly, the stock market presents the opportunity to purchase shares of various companies, potentially yielding substantial capital appreciation over time, albeit with a heightened risk due to market volatility. Real estate investment, on the other hand, involves acquiring rental properties, offering tangible assets that can generate rental income and appreciate in value. However, this avenue demands a significant initial capital outlay and entails property management responsibilities. Alternatively, fixed deposits in banks provide a low-risk option with guaranteed returns, ideal for risk-averse investors, though offering more modest returns.

Mutual funds offer diversification, professional management, and flexibility, making them attractive for those seeking a balanced investment approach. Lastly, gold investments, whether in physical forms like jewelry or through Gold Exchange-Traded Funds (ETFs), serve as a hedge against inflation and currency fluctuations, offering a tangible store of value. Selecting the most suitable investment avenue necessitates careful consideration of personal financial goals, risk tolerance, and available resources. Each of these investment alternatives has its own set of benefits, risks, and considerations. The choice among them depends on an individual's financial goals, risk tolerance, liquidity needs, and investment horizon. Diversifying across these options or selecting one that aligns with one's financial strategy is essential for achieving a well-rounded investment portfolio.

Benefit Criteria:

Return on Investment (ROI):

Return on Investment (ROI) is a pivotal metric in the world of finance, serving as a compass for investors navigating the intricate landscape of investment decisions. This vital indicator encapsulates the anticipated financial gain or profit an investment is poised to yield over a predefined period, typically spanning five years. Expressed as a percentage, ROI provides a clear picture of how an investment's returns measure up against the initial capital outlay. Naturally, a

higher ROI is an enticing prospect, signifying the potential for a more profitable venture. However, the allure of high returns must be balanced with prudent risk assessment, for investments offering greater rewards often come hand-in-hand with heightened levels of risk. Consequently, astute investors weigh the allure of higher ROIs against the associated risks, ultimately steering their portfolios towards a well-informed equilibrium between profit potential and risk mitigation.

Liquidity:

Liquidity is a crucial concept in the realm of investments, and it essentially measures an asset's ability to be swiftly converted into cash without exerting a substantial influence on its market value. This metric is typically assessed on a scale ranging from 1 to 5, where a rating of 5 signifies a high degree of liquidity. In such cases, investments can be easily and promptly sold or redeemed with minimal risk of suffering significant losses in value during the process. High liquidity investments hold particular appeal for individuals who anticipate a need for rapid access to their funds, providing them with the flexibility to meet unexpected financial demands or capitalize on new opportunities as they arise. Therefore, the level of liquidity plays a pivotal role in shaping investment choices, aligning financial strategies with immediate or short-term liquidity needs.

Risk Level:

Risk level is a paramount factor in the world of investment, serving as a critical gauge of the degree of uncertainty and potential loss that accompanies a particular financial venture. Typically, this assessment is quantified on a scale that ranges from 1 to 5, with a rating of 5 indicating a high level of risk. Invariably, higher-risk investments dangle the allure of greater returns, but they also carry a heightened probability of losing capital. To navigate this complex terrain successfully, investors must conscientiously align their risk tolerance with the risk level of the investment they're considering. This alignment ensures that the chosen investment mirrors their comfort level and financial goals. It's a pivotal strategy for achieving a balanced portfolio that strikes the right equilibrium between the lure of higher rewards and the imperative of prudent risk management.

Non-Benefit Criteria:

Lock-in Period:

The concept of a lock-in period holds significant importance in the world of investments. It represents the minimum duration that an investor is obligated to maintain their financial commitment to a particular investment before they are permitted to withdraw their funds without incurring penalties or encountering restrictions. This temporal constraint is often expressed in years and can vary considerably across different investment options. It's a critical consideration for investors because a longer lock-in period can significantly limit their access to their invested funds when they may need them for various financial purposes. Therefore, comprehending and aligning with the lock-in period is a vital aspect of prudent financial planning, ensuring that investors make informed choices that harmonize with their liquidity needs and long-term financial objectives.

Tax Implications:

Understanding the tax implications of an investment is a critical aspect of financial decision-making. Tax implications encapsulate the potential tax liabilities and responsibilities linked to a specific investment. Investors often rate this criterion on a scale from 1 to 5, with a rating of 5 indicating high tax implications. These considerations extend to various tax factors, including capital gains tax, income tax, and any available tax exemptions or deductions that may apply to the investment. Assessing tax implications is vital because they have the potential to exert a substantial impact on the net returns an investor ultimately receives from their investment. Savvy investors recognize that an awareness of tax implications is central to optimizing their overall profitability and making informed choices in line with their financial objectives and tax planning strategies.

Initial Investment Amount:

The initial investment amount is a fundamental factor in the realm of investing, representing the minimum monetary commitment required to embark on a specific investment venture. Usually denominated in dollars or the local currency, this sum can fluctuate significantly based on the chosen investment

option. The assessment of the initial investment amount serves as a practical guide for investors, helping them gauge whether they possess the necessary financial capacity to enter a particular investment opportunity. By understanding this criterion, individuals can make well-informed decisions that align with their financial means, ensuring that they embark on investment journeys that are both feasible and conducive to their overall financial goals and strategies.

TABLE I. Data Set

Investment Alternative	ROI	Liquidity	Risk	Lock-in Period	Tax Implications	Initial Investment Amount
Stock Market	10	4	4	3	3	5000
Real Estate	6	2	5	10	4	50000
Fixed Deposits	4	5	1	5	2	10000
Mutual Funds	8	4	3	3	3	2000
Gold	5	3	2	0.5	1	1000

The investment alternatives presented in this table offer a spectrum of opportunities for individuals seeking to allocate their funds wisely. The Stock Market, with its high ROI and relatively low initial investment requirement, beckons to those looking for potential substantial returns. Real Estate, while offering an attractive ROI, requires a substantial initial investment and long-term commitment, making it suitable for those with a longer investment horizon. Fixed Deposits provide a secure and low-risk avenue with high liquidity but may offer lower returns. Mutual Funds strike a balance between risk and return, suitable for those seeking a diversified portfolio. Gold, with its moderate ROI and low risk, offers accessibility with a minimal upfront investment. The varying characteristics of these options cater to different financial goals, risk appetites, and investment timelines, empowering individuals to make informed decisions aligned with their unique circumstances.

TOPSIS Method:

The TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution)

method is a structured approach for making decisions when you have multiple criteria and alternatives to consider. It starts with defining the criteria, which can be quantitative or qualitative, to evaluate the various options. These criteria should be relevant to the decision at hand. Simultaneously, a list of alternatives is compiled, each of which will be assessed against these criteria. After establishing the criteria and alternatives, the data is normalized. This step ensures that all criteria are on the same scale, mitigating the influence of different units or measurement scales. Subsequently, criteria are weighted to reflect their relative importance in the decision-making process, allowing the decision-maker to emphasize certain factors over others.

The ideal and anti-ideal solutions are then determined for each criterion, with the ideal solution representing the maximum values for benefit criteria and the minimum values for cost criteria, and the anti-ideal solution being the opposite. These ideal and anti-ideal solutions set the benchmarks for assessing alternatives. Using appropriate distance metrics, such as Euclidean or Manhattan distance, the similarity of each alternative to both the ideal and anti-ideal solutions is calculated. This quantifies how closely each alternative aligns with the desired outcomes across the criteria. Finally, the relative closeness of each alternative to the ideal solution is computed by comparing its distances to the ideal and anti-ideal solutions. The alternative with the highest relative closeness is deemed the best choice according to the TOPSIS method. In this way, TOPSIS offers a systematic and structured approach to complex decision-making, enabling the selection of the most suitable alternative while considering multiple criteria and their respective importance in the decision process. TOPSIS helps decision-makers consider multiple criteria simultaneously and provides a systematic approach to ranking or selecting alternatives based on their overall performance concerning these criteria. It is essential to assign appropriate weights to the criteria and carefully normalize the data to ensure the method's accuracy and relevance to the decision at hand.

TABLE 2. Normalized Data

	ROI	Liquidity	Risk	Lock- in Period	Tax Implications	Initial Investment Amount
Stock Market	0.6442	0.4781	0.5394	0.2507	0.4804	0.0975
Real Estate	0.3865	0.2390	0.6742	0.8355	0.6405	0.9750
Fixed Deposits	0.2577	0.5976	0.1348	0.4178	0.3203	0.1950
Mutual Funds	0.5153	0.4781	0.4045	0.2507	0.4804	0.0390
Gold	0.3221	0.3586	0.2697	0.0418	0.1601	0.0195

In this table, the values for each criterion have been normalized to a common scale between 0 and 1. Normalization is a process used to eliminate the influence of different measurement units and scales, allowing for a fair comparison of the investment alternatives. The values represent how each investment alternative performs relative to the other options across these criteria.

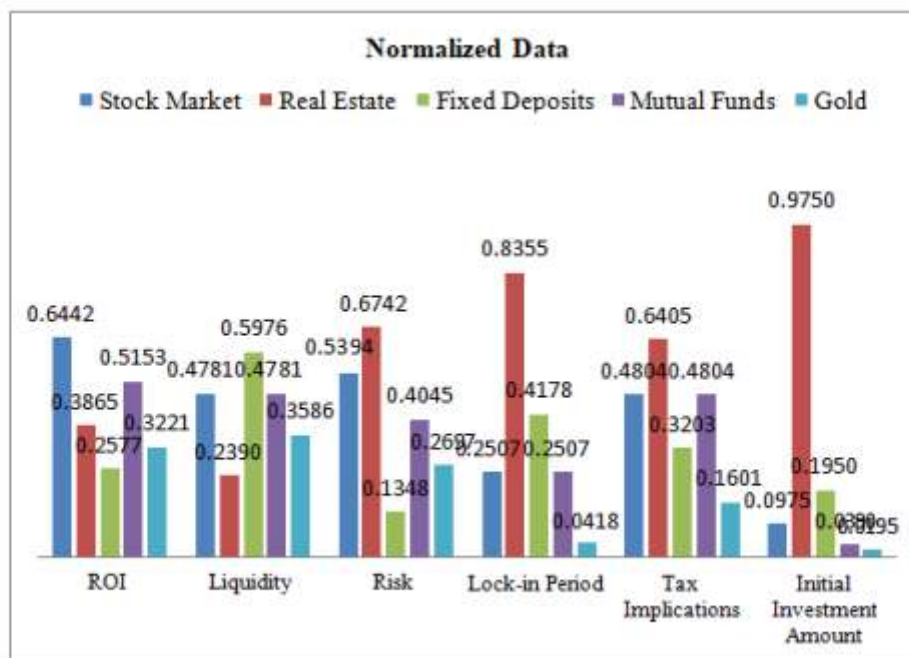


Figure 1. Normalized Data

TABLE 3. Weight

	ROI	Liquidity	Risk	Lock-in Period	Tax Implications	Initial Investment Amount
Stock Market	0.17	0.17	0.17	0.17	0.17	0.17
Real Estate	0.17	0.17	0.17	0.17	0.17	0.17
Fixed Deposits	0.17	0.17	0.17	0.17	0.17	0.17
Mutual Funds	0.17	0.17	0.17	0.17	0.17	0.17
Gold	0.17	0.17	0.17	0.17	0.17	0.17

Table 3 appears to represent the weight or importance assigned to each criterion for evaluating the investment alternatives. In this table, each investment alternative is assigned an equal weight of 0.17 (or 17%) across all criteria, indicating that all criteria are considered equally important in the decision-making process. This equal weighting approach suggests that no single criterion is prioritized over the others, and each criterion contributes equally to the overall assessment of the investment alternatives. This approach may be suitable when the decision-maker does not have strong preferences for any particular criterion and wants to maintain a balanced evaluation across all aspects.

TABLE 4. Weighted Normalized Decision Matrix

	ROI	Liquidity	Risk	Lock-in Period	Tax Implications	Initial Investment Amount
Stock Market	0.1069	0.0794	0.0895	0.0416	0.0797	0.0162
Real Estate	0.0642	0.0397	0.1119	0.1387	0.1063	0.1618
Fixed Deposits	0.0428	0.0992	0.0224	0.0693	0.0532	0.0324
Mutual Funds	0.0855	0.0794	0.0672	0.0416	0.0797	0.0065
Gold	0.0535	0.0595	0.0448	0.0069	0.0266	0.0032

Table 4 represents the weighted normalized decision matrix, which is a crucial step in the TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution) method for multi-criteria decision-making. In this table, each cell represents the product of the normalized value of each investment alternative (from Table 2) and the corresponding weight assigned to the criterion (from Table 3). This table essentially quantifies how well each investment alternative meets the decision-maker's preferences and priorities, considering both the importance of the criteria and the actual performance of the alternatives on those criteria.

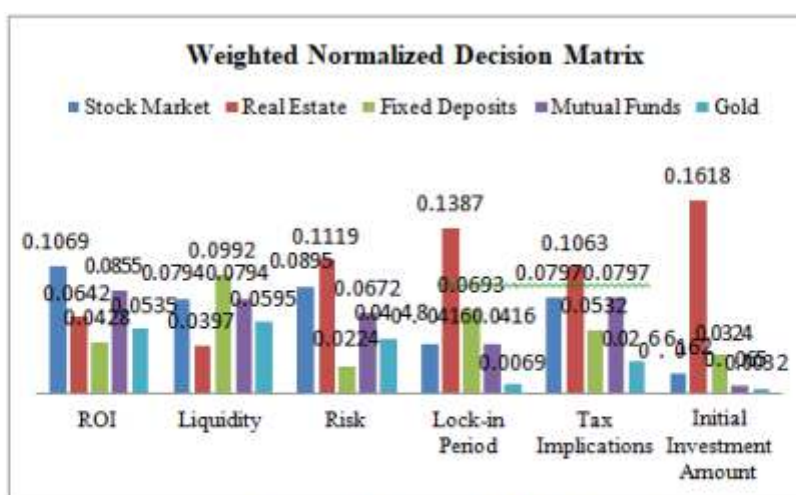


Figure 2. Weighted Normalized Decision Matrix

TABLE 5. Positive Matrix

	ROI	Liquidity	Risk	Lock-in Period	Tax Implications	Initial Investment Amount
Stock Market	0.1069	0.0992	0.1119	0.0069	0.0266	0.0032
Real Estate	0.1069	0.0992	0.1119	0.0069	0.0266	0.0032
Fixed Deposits	0.1069	0.0992	0.1119	0.0069	0.0266	0.0032
Mutual Funds	0.1069	0.0992	0.1119	0.0069	0.0266	0.0032
Gold	0.1069	0.0992	0.1119	0.0069	0.0266	0.0032

Table 5, known as the “Positive Matrix,” appears to display the positive ideal solutions for each criterion. In the TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution) method, the positive ideal solutions represent the best possible values for each criterion, where higher values are desirable. These ideal values are typically derived from the highest values observed for each criterion across all the investment alternatives.

TABLE 6. Negative matrix

	ROI	Liquidity	Risk	Lock-in Period	Tax Implications	Initial Investment Amount
Stock Market	0.0428	0.0397	0.0224	0.1387	0.1063	0.1618
Real Estate	0.0428	0.0397	0.0224	0.1387	0.1063	0.1618
Fixed Deposits	0.0428	0.0397	0.0224	0.1387	0.1063	0.1618
Mutual Funds	0.0428	0.0397	0.0224	0.1387	0.1063	0.1618
Gold	0.0428	0.0397	0.0224	0.1387	0.1063	0.1618

Table 6, referred to as the “Negative Matrix,” appears to display the negative ideal solutions for each criterion. In the TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution) method, the negative ideal solutions represent the worst possible values for each criterion, where lower values are desirable. These ideal values are typically derived from the lowest values observed for each criterion across all the investment alternatives.

TABLE 7. SI Plus, Si Negative and C_i

	SI Plus	Si Negative	C_i
Stock Market	0.0714	0.2038	0.7407
Real Estate	0.2329	0.0921	0.2833
Fixed Deposits	0.1326	0.1672	0.5576
Mutual Funds	0.0830	0.1992	0.7058
Gold	0.0946	0.2234	0.7025

The columns in Table 7 provide essential insights into the evaluation of investment alternatives using the TOPSIS method. SI Plus reflects how closely each alternative aligns with the best possible outcomes, with Stock Market exhibiting the highest similarity to the positive ideal. Si Negative measures the avoidance of unfavorable outcomes, where Stock Market excels at avoiding negative scenarios. Finally, Ci combines these aspects to determine the overall preference, with Stock Market emerging as the most preferred choice due to its superior performance across criteria, while Real Estate lags behind in the analysis. These metrics enable decision-makers to rank the alternatives comprehensively, facilitating the selection of the most suitable investment option aligned with their preferences and objectives.

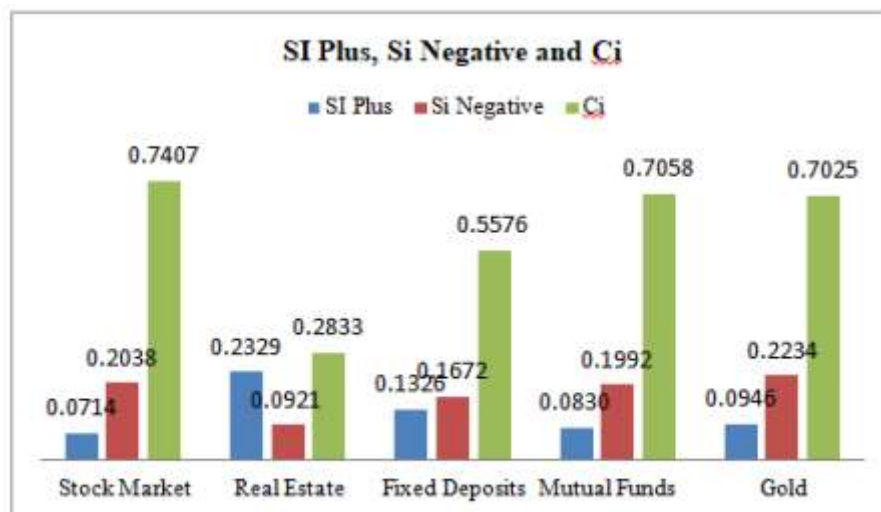


Figure 3. SI Plus, Si Negative and Ci

TABLE 8. Rank

	Rank
Stock Market	1
Real Estate	5
Fixed Deposits	4
Mutual Funds	2
Gold	3

Table 8, titled "Rank," provides a clear and concise ranking of the investment alternatives, offering valuable guidance for decision-makers. Stock Market emerges as the top choice, boasting the highest overall performance across the evaluated criteria. Mutual Funds secure the second position, representing a strong alternative for investors. Gold takes the third spot, followed by Fixed Deposits at fourth place. Real Estate is ranked fifth, signifying its relatively less favorable performance. These rankings are instrumental in simplifying the decision-making process, enabling individuals to select the investment option that aligns best with their financial goals and preferences.

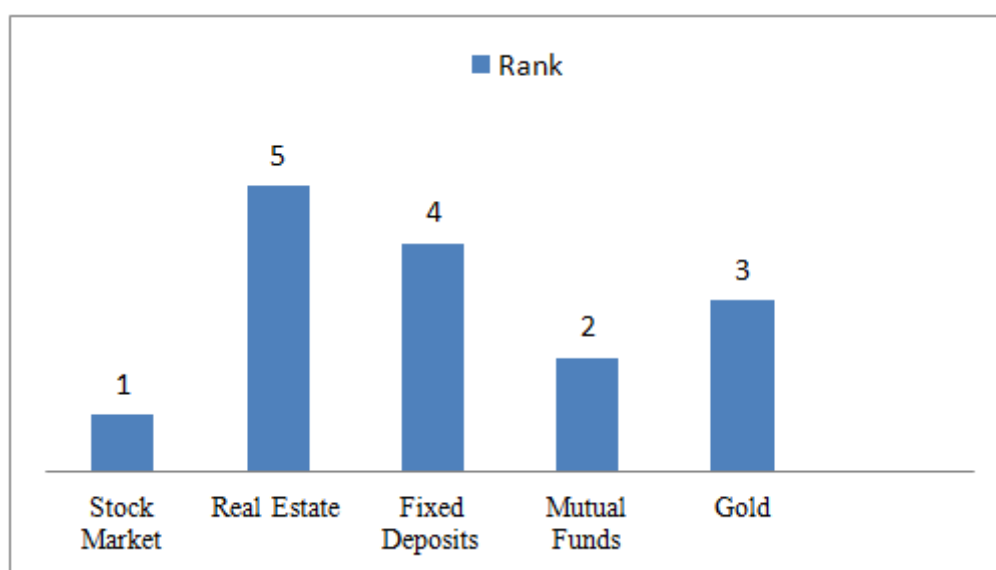


Figure 4. Rank

Conclusion:

In conclusion, the evaluation of investment alternatives for individual salaried persons using the TOPSIS method has provided valuable insights into the decision-making process. The criteria of Return on Investment (ROI), Liquidity, Risk, Lock-in Period, Tax Implications, and Initial Investment Amount were meticulously assessed to rank five investment options. Based on the analysis, Stock Market emerged as the most preferred choice, offering a balanced blend of potential returns, liquidity, and risk. Mutual Funds secured the second position, providing a reliable alternative. Gold ranked third, while Fixed Deposits and Real Estate occupied the fourth and fifth positions, respectively. These findings empower

individuals to make informed investment decisions aligned with their financial objectives, risk tolerance, and available resources.

Ultimately, the TOPSIS method serves as a valuable tool for optimizing investment choices and enhancing financial well-being. Investing in the stock market involves purchasing shares of various companies, which collectively form a diversified portfolio of stocks. This option offers the potential for substantial capital appreciation over time, but it comes with a higher level of risk due to market volatility.

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