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A Study on Risk and Return Relationship of Mutual Funds; an empirical study

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Abstract

The mutual funds have become one of the most common investments among individual and institutional investors because it is diversified, professionally managed and made accessible to investors. The most important aspect of mutual fund investment decisions is the risk-return trade-off. The article will explore the issue of risk and returns in mutual funds and discuss the manner in which the various types of funds strike a balance between the trade-off and how investment decisions can be made by risk-adjusted analysis of fund performance. The article examined theoretical backgrounds, nature of risks that are involved with mutual funds, ways of quantifying risk and return, evidence that has been given by existing literature and practical implications to investors and fund managers. The article finds that it is found that the higher the risk, the higher the expected returns, however using effective diversification and professional management can maximize the returns given a certain level of risk. The findings reveal that expected returns are the only factor that significantly differentiates investors based on their risk tolerance. Other factors—fund reputation, investment horizon, and awareness of the risk–return trade-off—are perceived similarly by both high and low risk-tolerant investors

Keywords; *Mutual funds risk and return, investment performance, risk-adjusted returns, and portfolio diversification*

Introduction

Risk and return are the key concepts in investment decision-making. Shareholders want to achieve maximum gains at minimum risks but this is not possible as the two are closely connected. This trade off can be effectively managed through mutual funds which combine the funds of various investors to invest in diversified portfolios of securities. The importance of mutual funds has increased over time in financial markets particularly among the retail investors who might not have the knowledge or funds to manage personal portfolios. The relationship between risk and returns is one of the fundamental tenets of finance where the higher the returns, the greater the risk is likely to be. With mutual funds, this relationship differs according to the type of fund which includes equity fund, debt fund, hybrid fund, and sector fund. Due to the contribution of the risk to investments, and returns to investors who take the risk, it is important to understand the contribution of the risk to the returns, and the compensatory nature of the returns to investors. This article seeks to present an in-depth research of the risk and return correlation of mutual funds with both theoretical and evaluation tool.

Figure: 1

Risk and Return Conceptual Framework

Risk and Return Conceptual Framework.

Meaning of Return

Return is the profit or loss that an investment has brought about within a given duration. In mutual funds, returns are determined as a result of capital gains, dividend and interest on underlying securities. The returns are normally given in terms of percentages per year to enable comparison of different investments. Widely used metrics of return are absolute return, annualized return and compound annual growth rate (CAGR).

Meaning of Risk

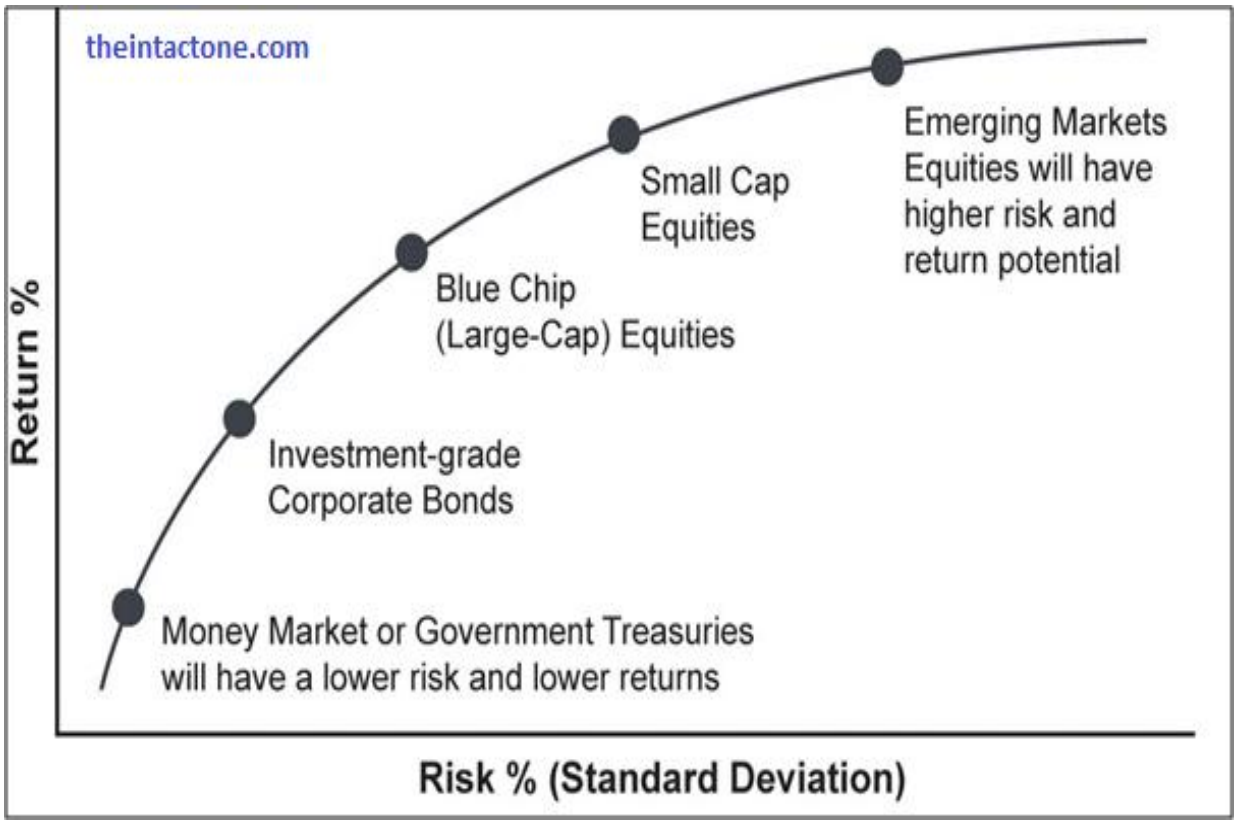
Risk is the uncertainty that is involved with expected returns. It is an indication of the fact that there is a likelihood of variation between the actual returns and the expected returns. In mutual fund investments, the risk is due to changes in the market, variations in interest rates, credit default, liquidity limitations, and macroeconomic conditions. Risk unlike returns cannot be completely removed but can be mitigated by diversification and strategic asset allocation.

Risk–Return Trade-Off

The risk-return trade-off implies that the higher the expected returns paid by investors in exchange of increasing risk. Liberal investments like liquid or debt funds tend to offer lesser but more predictable returns whereas equity and sector funds have more potential returns and are more volatile. Mutual funds have been created to provide varying risk-return profiles so as to fit many investor profiles and financial objectives.

Figure: 2

Risk–Return Trade-Off



Mutual Funds Risk Categorization.

Market Risk

Systematic risk is also referred to as market risk and is caused by general economic and financial market volatility which is common to all securities. Market risk in a mutual fund is mainly affected by alterations in the economic condition, inflation, interest rate, political instability and world events. Equity mutual funds are more prone to market risk, as the price of stocks is likely to delve into and out of the market in general. Even diversified mutual funds are not able to eradicate market risk in their portfolios. In times of economic recession, or in the turbulent market, the returns of a mutual fund can sink, thereby underlining the inevitability of market risk in investment decisions.

Credit Risk

Credit risk is associated with the chances that issuers of debt securities that were

purchased by a mutual fund will default in terms of making interest or principal payments on time. This is the most applicable risk to debt mutual funds which invest in corporate bonds, debentures or lower rated instruments. The funds that contain securities of low credit ratings tend to pay higher returns to cover the higher credit risk. But defaults or credit ratings may hurt the net asset value (NAV) of a fund. Credit evaluation and diversification among issuers are effective measures that can be used by mutual fund managers to reduce credit risk.

Interest Rate Risk

The interest rate risk is associated with the changes in the market interest rates which directly impact the prices of fixed-income securities. Given the increase in interest rates, bond prices become low and hence the NAV of debt mutual funds declines. On the other hand, reducing interest rates grow the price of bonds and value of funds. Longer term or longer maturity funds are more prone to fluctuations in interest rates as compared to short term funds. A major factor that should be considered by investors in government bond funds, dynamic bond funds and long-duration debt funds is interest rate risk.

Liquidity Risk

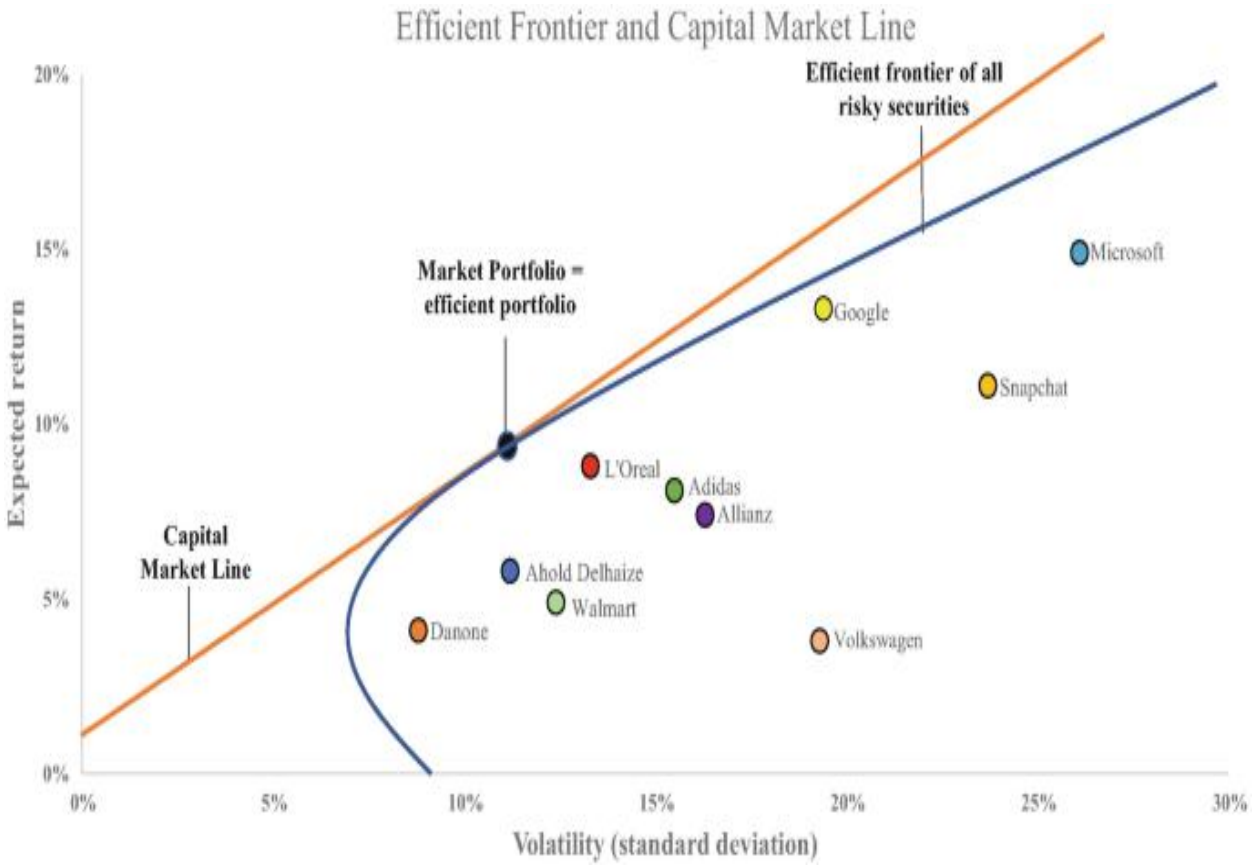
The liquidity risk is a condition that arises when a mutual fund cannot easily sell its investment at fair market value to allow it to meet the request by investors to redeem their investments. This risk is more eminent in funds dealing with thinly traded securities, less rating of corporate bonds, or niche markets. When market stress hit, liquidity may dry up and funds will be forced to sell assets at discounted prices, and this will have negative impact on returns. Extreme cases will also involve liquidity risk causing the temporary suspension of redemptions. This risk can be minimized by holding sufficient cash and investing in liquid instruments.

Managerial Risk

Managerial risk is a risk that occurs due to bad investment options by managers of mutual funds. Professional knowledge notwithstanding, fund managers can make wrong decisions concerning market conditions, choose low-performing stocks, or lack a good portfolio redesign. Contravened fund management teams may also have an effect on performance consistency. Because the results of the mutual funds greatly rely on the skill of the

managers in selecting the assets, timing, and risk management, poor decision-making may result in the performance that is below the standard. When investors can compare the history of a fund and the consistency of its management, they are able to determine the risk in management.

Figure: 3



Return in Mutual Funds Measurement.

Absolute Return can be defined as the percentage change in value of an investment at the end of a given time frame with the time element being ignored. It is one that is computed as the difference in the initial and the final value of investment as a percentage of the initial value. Absolute return is easy to comprehend and it applies in investments with a short term. But this does not take into consideration the time frame of the

investment which makes it not effective in comparisons of investments held over various time periods.

Annualized Return transforms absolute return into a corresponding annual return using the assumption that the investment will grow at a growth rate of the same amount in every year. The measure helps investors to compare the performance of mutual funds in different time prospects. Annualized return is specifically beneficial when it is necessary to estimate the performance of investments in medium term and understand the patterns of good performance over the years.

Compound Annual Growth Rate (CAGR) is used to determine the annual growth rate of a particular investment assuming that the profits are reinvested in the investment every year. It captures the actual rate of the return during the investment period considering the effects of compounding. CAGR is also very popular in the long-term analysis of mutual funds since it averages the fluctuations of any given year to give a realistic understanding of long-term growth

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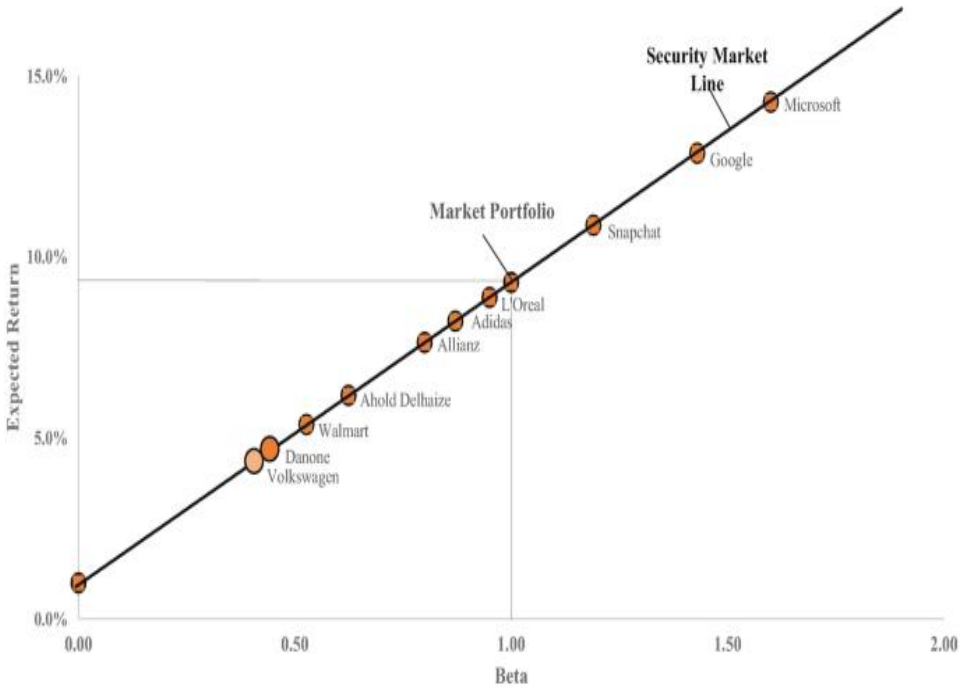
Figure: 4



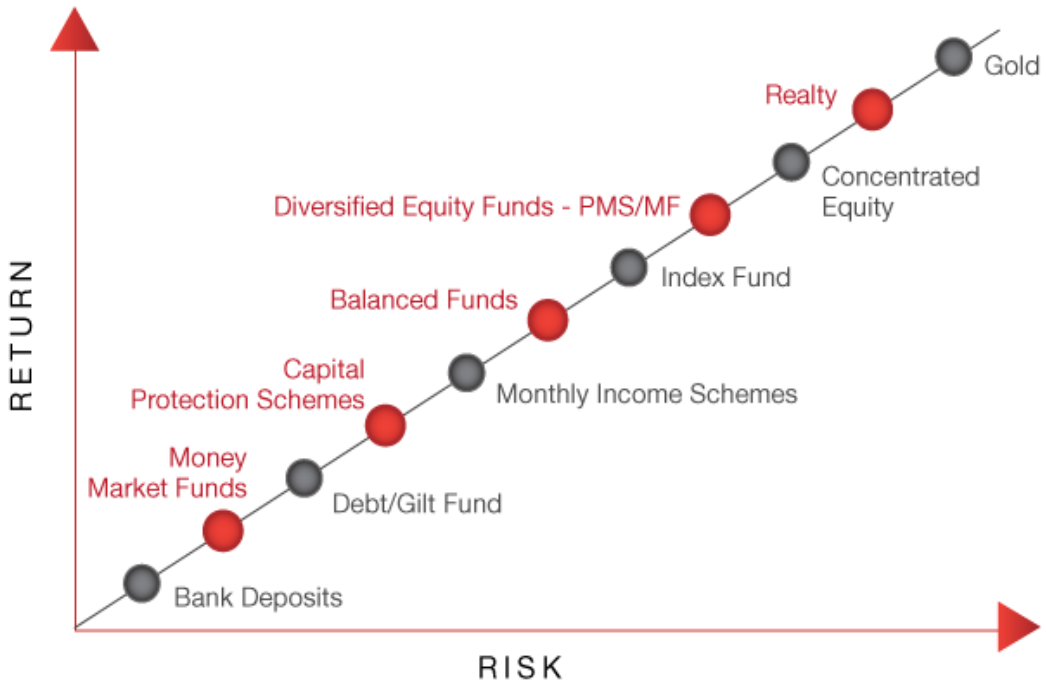
Risk and Return Relationship across Mutual Fund Categories

The ETFs majorly invest in equities of businesses and have the objective of making long-term capital gains. Such funds are linked with high risk as well as high return potential because of the changes in the stock markets. Investors with long investment horizon and more risky outlook are the ones who would be best suited to an equity fund. Large-cap, mid-cap, small-cap, and diversified equity funds are sub-classified based on the degree of risk. In the long run, the equity mutual funds have been shown to provide better returns in comparison with other types of funds.

Debt Mutual Funds invest in debt securities like governments bonds, treasury bills, corporate bonds and money market securities. These funds are aimed at delivering constant and predictable returns at a comparatively lower risk. Debt funds are best suited to investors who are conservative and want to receive regular income and protect their capital. Nonetheless, they have exposures to interest rate risk and credit risk depending on the composition of the portfolio of the fund.

Both the risk and return are balanced by Hybrid Mutual Funds which consist of equity and debt investments. Having a diversified mix of assets, hybrid funds will have minimized volatility and moderate growth. They can be applied to investors who have an average risk and are usually applied as an intermediary product between debt and equity investments. The Sectoral and Thematic Funds are dedicated to particular industries or themes, including technology, industries, infrastructures, or healthcare. These are riskier funds as they are not diversified, but may yield significant returns once the selected area is performing well.

Figure: 5



Research Gap

Existing literature on mutual fund investment behavior has extensively examined the concepts of risk and return, investor preferences, and fund performance. However, many studies primarily focus on macro-level performance indicators or demographic determinants of investment decisions, often overlooking the role of investor risk tolerance as a comparative behavioral factor. Limited empirical research specifically investigates how investors with different levels of risk tolerance differ in their perception of key factors such as expected returns, fund reputation, investment horizon, and awareness of the risk–return trade-off. Moreover, previous studies tend to analyze these variables in isolation rather than examining their combined influence on mutual fund investment decisions. There is also a lack of region-specific and investor-category-based analyses that provide practical insights for financial advisors and fund managers. Consequently, a clear gap exists in understanding how risk tolerance shapes investors' evaluation of factors influencing the risk–return relationship of

mutual funds. This study seeks to bridge this gap by offering a comparative analysis based on risk tolerance levels.

Significance of the Study

The research on the relationship between risk and returns of mutual funds is of importance because it is an informative work to the investors, fund managers, policymakers and researchers. To investors, this research would help to increase the knowledge of the effect of varying amounts of risk on mutual fund returns to make informed investments based on individual risk tolerance, financial objectives and time horizons. The study demonstrates the significance of risk-adjusted performance measures, which will allow investors to go beyond straightforward comparisons of returns and analyze funds in a better way. To fund managers, findings provide a direction on how to balance risk and returns by using efficient portfolio construction, diversification and asset allocation techniques. The analysis also helps in determining the areas through which fund performance could be enhanced without committing too much risk. Regulatory and policy-wise, in this research, there is an added value to the improvement of transparency and investor protection through the focus on the risk disclosure and performance evaluations standards. The study contributes to the existing literature in the study of finance and investment by being an analytical study that takes a systematic analysis of the behavior of mutual funds in diverse risk conditions. On the whole, the research is rooted in the good investment practices, encourages financial literacy, and leads the mutual fund industry to sustainable development.

Statement of the Problem

Mutual funds are nowadays a popular chosen investment instrument because of the advantage of diversification and discipline in their management, but the investors are not able to readily grasp the connection between the risk and the gain of various mutual fund products. A large number of investors usually pick mutual funds on basis of previous returns without due consideration of the risk level incurred in making the returns. This ignorance can cause improper investment decisions, imbalance in the portfolio and accidental losses in times of volatility in the market. Additionally, the exposure to risk among the equity, debt, hybrid, and sectoral mutual funds is different; hence it is difficult to assess the performance using objective

ways. Though there are various risk-adjusted performance measurements at the disposal of investors, these measurements are not always used by investors. Thus, systematic investigation is necessary on the importance of risk on returns in varying categories of mutual funds and the research on whether increased returns are sufficient to compensate an increased risk. The solution to this issue will be beneficial in the decision-making of investors and enhance the performance of mutual funds to better evaluate the funds.

Objectives

The article examined theoretical backgrounds, nature of risks that are involved with mutual funds, ways of quantifying risk and return, evidence that has been given by existing literature and practical implications to investors and fund managers.

Methodology

The study adopted a **quantitative research design** to examine the differences in factors influencing the risk–return relationship of mutual fund investments based on investors' risk tolerance levels. A **cross-sectional survey approach** was used to collect primary data from individual mutual fund investors.

The sample consisted of **250 respondents**, selected using a **simple random sampling technique** to ensure that each investor had an equal chance of being included in the study and to reduce selection bias. Respondents were categorized into **high risk tolerance** and **low risk tolerance** groups, with **125 participants in each group**, based on their responses to risk tolerance assessment items.

Data were collected through a **structured questionnaire**, which measured key factors influencing mutual fund investment decisions, including expected returns, fund reputation and track record, investment horizon, and awareness of the risk–return trade-off. Responses were recorded using a **Likert-scale format**, allowing for quantitative comparison between the two groups.

To analyze the data, **descriptive statistics** such as mean and standard deviation were used to summarize the responses. An **Independent Samples t-test** was employed to examine whether there were statistically significant differences between high and low risk tolerance investors with respect to the

selected factors. This test was chosen as it is appropriate for comparing the means of two independent groups. The results of the t-test provided insights into how risk tolerance influences investors' perceptions of various risk–return-related factors in mutual fund investments.

Analysis and Results

Understanding the relationship between risk and return is fundamental to mutual fund investment decisions. Investors differ significantly in their risk tolerance, which influences how they perceive and prioritize various factors associated with mutual fund selection. Elements such as expected returns, fund reputation, investment horizon, and awareness of the risk–return trade-off play a crucial role in shaping investment behavior. Risk-tolerant investors may be inclined toward higher-return opportunities despite increased volatility, while risk-averse investors often prioritize stability and reliability. Examining these factors helps in identifying how investors align their financial goals with suitable mutual fund options. A comparative analysis based on risk tolerance provides valuable insights into investor psychology and decision-making patterns. Such understanding is beneficial for fund managers, financial advisors, and policymakers in designing investment products and strategies that cater to diverse investor profiles. Ultimately, exploring the factors influencing the risk–return relationship enhances informed investment decisions and contributes to the efficient functioning of mutual fund markets.

1. **H_{01}:** There is no significant difference between high and low risk-tolerant investors with respect to expected returns from mutual fund investments.
2. **H_{02}:** There is no significant difference between high and low risk-tolerant investors regarding the importance of fund reputation and track record in mutual fund selection.
3. **H_{03}:** There is no significant difference between high and low risk-tolerant investors in terms of investment horizon for mutual fund investments.
4. **H_{04}:** There is no significant difference between high and low risk-tolerant investors in their awareness of the risk–return trade-off associated with mutual fund investments.

Factors influncing Risk and Return Relationship of Mutual Funds

Results of Independent T-test

Factors	Risk Tolerance	N	Mean	SD	t	p
Expected Returns	High	125	3.89	1.200	1.004	.001
	Low	125	3.17	1.353		
Fund Reputation and Track Record	High	125	4.62	1.520	1.214	.236
	Low	125	3.50	1.461		
Investment Horizon	High	125	4.69	1.343	1.059	.389
	Low	125	3.55	1.292		
Awareness of Risk-Return Trade-Off	High	125	4.42	1.350	1.110	.299
	Low	125	3.68	1.056		

The Independent t-test was conducted to examine whether there is a significant difference between high-risk-tolerant and low-risk-tolerant investors with respect to factors influencing the risk–return relationship of mutual funds.

The results indicate that Expected Returns show a statistically significant difference between the two groups (t = 1.004, p = 0.001). Investors with high risk tolerance (Mean = 3.89, SD = 1.200) place significantly greater emphasis on expected returns compared to low risk-tolerant investors (Mean = 3.17, SD = 1.353). This suggests that high-risk-tolerant investors are more return-oriented and are willing to accept higher risk in anticipation of superior returns.

In contrast, Fund Reputation and Track Record does not exhibit a statistically significant difference between high and low risk-tolerant investors (t = 1.214, p = 0.236). Although high risk-tolerant investors reported a higher mean score (Mean = 4.62)

than their low risk-tolerant counterparts (Mean = 3.50), the difference is not significant, indicating that fund credibility and past performance are valued similarly by both groups.

Similarly, Investment Horizon shows no significant difference between the two categories of investors (t = 1.059, p = 0.389). While high risk-tolerant investors (Mean = 4.69) tend to have a longer investment perspective compared to low risk-tolerant investors (Mean = 3.55), the variation is not statistically meaningful. This implies that investment duration is an important consideration regardless of investors' risk tolerance levels.

Finally, Awareness of the Risk–Return Trade-Off also does not differ significantly between the two groups (t = 1.110, p = 0.299). Both high and low risk-tolerant investors demonstrate comparable awareness of the inherent relationship between risk and return, suggesting a generally uniform understanding of mutual fund investment dynamics.

Implications for Investors

This knowledge in risk-return with mutual funds has important implication to the investor in making wise decisions on investments. Before choosing mutual fund schemes, investors have to critically evaluate their risk profile, investment objectives and investment duration. Equity and sectoral fund are high-risk funds that could have better long-term returns; however, it is only recommended to investors with the strength to withstand the market fluctuations. On the other hand, conservative investors might be interested in debt or low risk hybrid funds which offer stability and certain predictability of income. The assessment of mutual funds based on risk-adjusted measures of performance like the Sharpe ratio, beta and standard deviation help investors to understand whether returns are sufficient to cover the risks of investing in the funds. Having portfolio investments in various types of funds allows decreasing the overall portfolio risk and increasing the potential return. It is also necessary to regularly check and periodically rebalance mutual fund portfolios in order to fit investments to the evolving market environment and personal financial goals. On being aware of the risk/return dynamics, investors will be able to circumvent short-term market responses and make disciplined investment decisions, with the long-term wealth creation as a result of mutual funds.

Implications to Fund Managers.

In the case of fund managers, risk-return relationship is important in establishing investment strategies and competitive performance. Fund managers have to strike the right balance between risk exposure to obtain the best returns without crossing the stated objectives and risk profile that should be met by the fund. Volatility and capital of the investor must be controlled by effective portfolio diversification, asset allocation and risk management techniques. The fund managers also have the duty of continuously tracking the market trend, the interest rate trends and credit quality in order to reduce the risk of downside. Openness in communication on risk level, investment strategies and performance measures would facilitate the investor trust and confidence. Besides, it is essential to deliver regular risk-adjusted returns to maintain long-term relationships with investors and be above benchmarks. Fund managers need to make decisions that are consistent with the regulatory needs and ethical requirements in dynamic market conditions. In the end, the prudent risk-return trade-off management will help the funds produce better returns, gain investor trust, and help the mutual fund sector overall to be more stable and prosperous.

Limitations of the Study

Despite providing valuable insights into the factors influencing the risk–return relationship of mutual funds, this study has certain limitations. First, the study relies on self-reported responses, which may be subject to personal bias, misunderstanding of questions, or socially desirable answers. Second, the classification of investors into high and low risk tolerance groups may not fully capture the dynamic and situational nature of risk preferences, as risk tolerance can change over time due to market conditions or personal financial circumstances. Third, the study focuses on a limited set of factors influencing mutual fund investment decisions, excluding other potentially relevant variables such as behavioral biases, market volatility, and regulatory influences. Additionally, the use of a cross-sectional research design restricts the ability to observe changes in investor behavior over time. Finally, the findings may have limited generalizability due to geographical constraints and the specific sample characteristics, suggesting caution when extending the results to broader investor populations.

Conclusion

The article establishes that there is a positive relationship between risk and the return in investments in mutual funds but the degree of relationship differs among the categories of funds. Even though high risk funds have higher potential to achieve higher returns, the risk-adjusted performance metrics are needed to analyze the actual investment efficiency. Mutual funds are also still a potent instrument of investment that enables a return to maximization of returns through diversification and management. The findings reveal that expected returns are the only factor that significantly differentiates investors based on their risk tolerance. Other factors—fund reputation, investment horizon, and awareness of the risk–return trade-off—are perceived similarly by both high and low risk-tolerant investors. This highlights that while risk tolerance strongly influences return expectations, foundational investment considerations remain consistent across investor categories.

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