



Performance Evaluation of Actively Managed Funds and Passively (Index) Managed Funds In India (2014-2024)

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Abstract : The Indian mutual fund industry has seen remarkable growth over the past decade, with investors choosing between actively managed funds and passively managed (index) funds. This study evaluates the performance of these two investment strategies in India from 2014 to 2024, focusing on key financial metrics such as Net Asset Value (NAV), annual returns, Sharpe ratio, and standard deviation. By comparing a sample of actively managed equity funds and index funds, the study assesses risk-adjusted returns and expense efficiency. The findings suggest that while actively managed funds aim to outperform the market through stock selection and portfolio management, their higher expense ratios may offset potential gains. On the other hand, index funds offer a cost-effective alternative, often yielding comparable or superior risk-adjusted returns. This study provides valuable insights into the trade-offs between active and passive investment strategies in India, offering practical implications for investors, fund managers, and policymakers.

IndexTerms - Active Funds, Index Funds, Mutual Funds, NAV, Sharpe Ratio, Risk-Adjusted Returns, India.

I. INTRODUCTION

The mutual fund industry in India has experienced substantial growth over the past decade, becoming a key element in investors' portfolios. This section introduces the context of the study, highlighting the background of mutual funds, the specific Indian context, the importance of the research, and an overview of actively and passively managed funds.

1.1 Background of Mutual Funds

Mutual funds are investment vehicles that pool money from multiple investors to invest in a diversified portfolio of stocks, bonds, or other securities. The concept of mutual funds dates back to the 1960s, with the establishment of the Unit Trust of India (UTI) in 1963, which marked the beginning of organized fund management in India. Since then, the mutual fund industry has undergone significant evolution, especially following India's economic liberalization in the 1990s, which led to greater private sector participation and an increase in competition among fund houses (Sundaram & Kaur, 2020).

As of 2024, the Indian mutual fund industry has seen its assets under management (AUM) rise to approximately ₹68.08 trillion, a reflection of growing investor confidence and participation. This growth has led to an increased focus on understanding the performance of various fund management strategies—primarily actively managed funds versus passively managed funds (index funds)—and how these impact investor returns over time (Bansal & Kumar, 2022).

1.2 The Indian Context

The mutual fund landscape in India is shaped by several factors including market conditions, regulatory frameworks, and investor behavior. Active and passive investing are two prominent strategies in the Indian mutual fund space, and both have distinct characteristics. Active funds involve decisions made by fund managers who seek to outperform the market through careful stock selection and market timing. On the other hand, passive funds aim to replicate the performance of a market index, thus minimizing management fees and relying on market-wide trends rather than individual stock picks (Ghosh, 2021).

In India, active funds have traditionally dominated the mutual fund sector, with investors opting for them based on the belief that experienced fund managers can generate superior returns. However, with the increasing popularity of passive investing globally, the Indian market has also seen a rise in index funds, which offer lower fees and are perceived as a more cost-effective option. This shift towards passive funds warrants a deeper exploration of both types of funds' performance, particularly in the Indian context, where market dynamics and investor behavior might differ from those in developed markets (Kumar & Das, 2023).

1.3 Importance of the Study

This study is of critical importance due to the rapid expansion of the mutual fund industry in India, where millions of retail investors have started relying on mutual funds for their long-term financial goals. As mutual fund investing becomes more mainstream, it is crucial for investors to have a clear understanding of the performance characteristics of different investment strategies. The performance evaluation of actively managed funds and passively managed (index) funds helps investors make more informed choices based on the trade-offs between potential returns, risks, and costs (Saboo, 2006).

Understanding whether active management delivers superior returns after accounting for fees and risks is essential, especially in a market like India, where mutual fund investment continues to grow, and where the costs associated with active funds may not always justify the benefits (Mishra & Singh, 2016). Additionally, passive funds, which have been gaining popularity due to their simplicity and cost-effectiveness, provide an important benchmark for comparison.

1.4 Significance of the Research

The findings of this research have far-reaching implications for both retail and institutional investors. By understanding the relative performance of actively and passively managed funds in the Indian market, this study aims to offer actionable insights that can guide investors in making better-informed decisions. Active funds, despite their higher expense ratios, may offer superior returns under specific market conditions, while passive funds may be a better alternative for cost-conscious investors. Moreover, understanding the factors driving investor preference—such as risk tolerance and investment horizons—can aid in formulating strategies that align investment choices with individual financial goals (Ghosh, 2021).

The results of this study also carry importance for policymakers, as they highlight the need for enhanced investor education and clearer regulations in the mutual fund sector. By analyzing the relative performance of both fund types, the study contributes to the ongoing debate on whether the Indian market is more suited to active or passive investing strategies (Sundaram & Kaur, 2020).

1.5 Overview of the Field

The study of mutual fund performance evaluation is a critical area in financial research that examines how different fund types perform under varying market conditions. This research helps investors, financial analysts, and policymakers as it shapes investment strategies, regulatory frameworks, and market trends. Various performance metrics, such as the Sharpe Ratio, Jensen's Alpha, and Treynor Ratio, are commonly used to evaluate risk-adjusted returns, excess returns, and systematic risk exposure in both actively and passively managed funds (Fama & French, 2008). Understanding these metrics in the context of the Indian market is key to making informed decisions.

1.6 Actively Managed Funds

Actively managed funds are those where fund managers make decisions about the portfolio composition based on research, market conditions, and personal judgment. These funds typically have higher fees, as they require continuous monitoring and adjustment of investments. The goal of actively managed funds is to outperform the benchmark index through stock picking and market timing (Bansal & Kumar, 2022).

However, empirical studies indicate that active funds often struggle to deliver superior returns after accounting for their higher costs. For instance, a study by Sundaram and Kaur (2020) found that the majority of actively managed funds in India underperformed their benchmarks, particularly over longer periods. This raises questions about the value-added by fund managers and the potential drawbacks of higher expense ratios.

1.7 Passively Managed Funds

Passively managed funds, such as index funds and exchange-traded funds (ETFs), seek to replicate the performance of a specific market index rather than outperform it. These funds have lower expense ratios because they do not require active management or constant rebalancing of the portfolio (Fama, 1970). The rise of passive investing has been supported by the Efficient Market Hypothesis (EMH), which suggests that it is difficult for managers to consistently outperform the market because all publicly available information is already reflected in stock prices (Fama, 1970).

In the Indian context, passive funds have gained popularity due to their cost-effectiveness and simplicity. Studies have shown that over the long term, passive funds often outperform active funds due to their lower fees and the difficulty of consistently beating the market (Ghosh, 2021). This makes passive funds an attractive option for cost-conscious and long-term investors.

II. LITERATURE REVIEW

The evaluation of actively managed funds versus passively managed funds has been a subject of extensive research globally, as well as in the Indian context. This literature review highlights key studies related to the performance of these funds, emphasizing their risk-adjusted returns, cost-effectiveness, and long-term performance. These studies provide critical insights for investors, fund managers, and policymakers.

A. *Performance Comparison: Active vs. Passive Funds*

- 1) **Cremers et al. (2014)** analyzed the relationship between indexing and energetic management within the mutual fund industry across different nations. They concluded that direct indexing increases competition, leading to improved performance and reduced costs for active funds. This study highlights that passive strategies often force active funds to be more efficient to remain competitive in the market.
- 2) **Rompotis (2013)** compared the performance of ETFs and index funds against their respective benchmarks. His study found that both ETFs and index funds had similar performances but failed to achieve excess returns over their benchmarks, suggesting the limited value added by active management in some cases.
- 3) **Saboo (2006)** conducted a comparison of mutual funds in India, using various performance measures. The study revealed that most active funds performed better than their benchmarks, indicating strong active management in the Indian market. However, this conclusion was based on short-term performance, and it raised concerns about the sustainability of such outperformance.
- 4) **Kothari and Warner (2001)** evaluated mutual fund performance using risk-adjusted returns. Their research found that past performance was not always a reliable indicator of future returns, highlighting the challenges in comparing mutual funds' overall performance. This study is significant in the Indian context, where active fund managers often promote past performance to attract investors.
- 5) **Elton and Gruber (1996)** studied the persistence of mutual fund performance over time. They found that past performance was predictive of future success for a subset of funds, but most funds failed to maintain their outperformance over long periods, questioning the value of active management in the long run.

B. *Cost-Effectiveness of Active vs. Passive Funds*

- 1) **Brown and Goetzmann (1997)** identified and analyzed the effects of mutual fund management styles on performance. Their study concluded that while some active fund managers could outperform the market, the additional management fees and other costs often erode the excess returns generated by active funds.
- 2) **Treynor and Mazuy (1966)** evaluated mutual funds' ability to time the market. They concluded that mutual funds cannot consistently outperform the market, challenging the effectiveness of active management strategies. This finding supports the growing preference for passive investing in modern markets.
- 3) **Fama (1972)** decomposed mutual fund performance into selectivity and market timing. His research emphasized that while stock selection is important, market timing has a minimal effect on returns. This finding is relevant to the discussion on active versus passive funds, as passive funds inherently do not involve market timing.
- 4) **Malkiel (1995)** assessed the performance of equity mutual funds over two decades. He found that most actively managed funds underperformed their benchmarks, supporting the notion of market efficiency and questioning the value of active management. This research further reinforced the growing interest in passive funds globally.
- 5) **Carhart (1997)** investigated the persistence of mutual fund performance. His study concluded that mutual fund performance is often random, and past performance does not guarantee future success. This reinforces the belief that passive funds, which track indexes, offer a more reliable long-term strategy.
- 6) **Wahal and Wang (2011)** analyzed competitive dynamics within the mutual fund industry. Their research demonstrated that increased competition among mutual funds led to lower fees and improved performance. The study highlighted that as passive funds grow in popularity, active funds may need to lower fees to stay competitive.

C. *Indian Market Specific Studies*

- 1) **Khorana et al. (2005)** examined factors influencing the growth of the mutual fund industry, noting that regulatory and economic factors significantly impact the size and growth of the mutual fund sector in India. Their findings underscore the importance of understanding both global trends and local market conditions when comparing active and passive funds.
- 2) **Fama and French (2008)** analyzed the performance of investment strategies, concluding that many popular investment strategies, including active management, do not deliver superior returns in the long run. Their findings were particularly relevant for Indian investors, who had relied heavily on active funds for long-term wealth creation.
- 3) **Kacperczyk et al. (2005)** analyzed the impact of industry concentration on mutual fund performance. They found that higher industry concentration negatively affected fund performance, suggesting that diversification in passive funds might provide a competitive edge over actively managed funds in highly concentrated markets like India.
- 4) **Kosowski et al. (2006)** assessed the stock-picking ability of mutual fund managers, concluding that past performance does not guarantee future success. This finding aligns with the skepticism surrounding the ability of active managers to consistently outperform the market, especially after adjusting for higher fees.
- 5) **Pastor and Stambaugh (2012)** analyzed the size and dynamics of the active management industry. Their study revealed that while the active management industry is substantial, it faces significant challenges in maintaining performance, especially when compared to passive funds that benefit from lower costs and broader market exposure.
- 6) **French (2008)** discussed the implications of active versus passive investing, suggesting that active management incurs higher costs with limited benefits. This has led to a re-evaluation of investment strategies in emerging markets like India, where investors are becoming more cost-conscious.

- 7) **Berk and Green (2004)** examined the relationship between mutual fund flows and performance. They found that while past performance influences future fund flows, it does not guarantee superior returns, making the decision-making process for investors in India more complex and prompting some to shift towards passive funds.
- 8) **Gil-Bazo and Ruiz-Verdu (2009)** explored the relationship between mutual fund fees and performance, finding that higher fees were associated with lower performance. This finding is crucial in the Indian market, where the fee structure of actively managed funds is a significant factor in determining long-term returns for investors.
- 9) **Wermers (2000)** decomposed mutual fund performance into various components. He found that stock-picking and costs had significant contributions to overall performance, emphasizing the multifaceted nature of fund evaluation. This study has important implications for understanding the performance of actively managed funds in India, where fund fees can have a large impact on net returns.
- 10) **Sehdev and Ranjan (2014)** investigated investor perceptions of mutual funds in India, identifying "Benefits & Transparency" as the primary driver of preference, alongside a tendency toward moderate-risk balanced funds. The study revealed a persistent savings-oriented mindset among Indian investors, with widespread confusion about mutual fund mechanics despite participation. The authors emphasized the need for investor education to bridge knowledge gaps and foster trust in mutual funds as a viable investment vehicle.

III. RESEARCH GAP, OBJECTIVES, AND HYPOTHESES

This section outlines the objectives of the study, the key research questions, and the hypotheses that guide the analysis. It also discusses the existing research gap and the scope of the study, emphasizing the importance of focusing on the Indian market for evaluating the performance of actively managed and passively managed funds.

3.1 Objective of the Study

The primary objective of this study is to evaluate the performance of actively managed funds and passively managed funds in India over a ten-year period, from 2014 to 2024. Specifically, the study aims to:

- Analyze the financial performance of actively managed funds in comparison to passively managed funds by using various performance metrics such as Net Asset Value (NAV), Sharpe Ratio, Jensen's Alpha, Treynor Ratio, Beta, and Expense Ratio.
- Assess the risk-adjusted returns of actively managed and passively managed funds, with particular emphasis on the cost-effectiveness and performance sustainability of each type.
- Investigate the relationship between fund management styles (active vs. passive) and long-term investor returns, providing clarity on whether the higher costs of active management are justified by superior performance.

3.2 Research Questions

The following research questions guide the study:

- How do actively managed funds perform compared to their passive counterparts in terms of risk-adjusted returns?
- How do expense ratios impact the net returns of both management styles?
- What are the key differences in the overall performance (NAV, returns, fees) between actively managed and passively managed funds in India?

3.3 Hypotheses

Based on the research questions, the following hypotheses have been formulated:

Sharpe Ratio

- H_0 (Null hypothesis): There is no significant difference in the Sharpe ratio between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in the Sharpe ratio between actively managed funds and passively managed funds in India.

Jensen's Alpha

- H_0 (Null hypothesis): There is no significant difference in Jensen's Alpha between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in Jensen's Alpha between actively managed funds and passively managed funds in India.

Treynor Ratio

- H_0 (Null hypothesis): There is no significant difference in the Treynor ratio between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in the Treynor ratio between actively managed funds and passively managed funds in India.

Beta Analysis

- H_0 (Null hypothesis): There is no significant difference in the Beta between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in the Beta between actively managed funds and passively managed funds in India.

Expense Ratio

- H_0 (Null hypothesis): There is no significant difference in the expense ratios between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in the expense ratios between actively managed funds and passively managed funds in India.

Net Returns Comparison

- H_0 (Null hypothesis): There is no significant difference in net returns between actively managed funds and passively managed funds in India.
- H_1 (Alternative hypothesis): There is a significant difference in net returns between actively managed funds and passively managed funds in India.

3.4 Research Gap

While numerous studies have been conducted on mutual fund performance, most of the existing research has focused on developed markets, with limited focus on the Indian context. The research gap includes:

- Limited analysis of the Indian mutual fund market, particularly concerning the comparison of active vs. passive fund performance over a significant period (2014-2024).
- Lack of focus on expense ratios in Indian mutual funds, and their effect on net returns, especially in the context of rising investor interest in cost-effective investment strategies.
- Insufficient investigation into risk-adjusted returns, particularly how active funds compare to passive funds in managing risk and maximizing returns over a longer-term horizon in India.
- Lack of localized empirical evidence that assesses the nuances of fund management styles (active vs. passive) within the evolving Indian economic environment.

3.5 Scope of the Study

The scope of this research encompasses the following:

- **Time Frame:** The study will focus on the performance of actively managed and passively managed funds in India from 2014 to 2024.
- **Performance Metrics:** The research will evaluate the funds based on various financial metrics, including NAV, Sharpe ratio, Jensen's Alpha, Treynor Ratio, Beta, and Expense Ratio.
- **Fund Categories:** The study will include a sample of 25 actively managed funds and 25 passively managed funds (index funds) available in the Indian market.
- **Comparative Analysis:** The research will compare the performance of these two types of funds in terms of returns, risk, and cost-efficiency to determine the advantages and drawbacks of each investment strategy in the Indian context.

IV. RESEARCH METHODOLOGY

The research methodology for this study is designed to evaluate and compare the performance of actively managed funds and passively managed funds in India. It includes data collection, performance metrics, statistical analysis, and the expected outcomes of the research. The methodology is structured to provide a comprehensive understanding of how these two investment strategies perform over the past decade, considering key financial metrics and statistical analyses.

4.1 Data Collection

The study utilizes historical financial data of 50 mutual funds—25 actively managed funds and 25 passively managed funds (index funds). These funds were selected based on their market prominence and the availability of relevant data over the period from 2014 to 2024. The primary data sources for this research include publicly available financial reports, such as fund fact sheets, annual reports, and NAV data provided by Asset Management Companies (AMCs), as well as data from reputable financial databases. The dataset includes several key financial indicators for each fund, including Net Asset Value (NAV), annual returns, expense ratios, and risk-related metrics such as standard deviation and Beta. This data will be used to assess the funds' performance in terms of returns, costs, and risk-adjusted measures.

4.2 Performance Metrics

To evaluate the performance of the selected actively managed and passively managed funds, this study relies on several key financial metrics that assess both return and risk. The Sharpe Ratio is used to measure the risk-adjusted return, allowing for a comparison of the funds' returns relative to their volatility. The Jensen's Alpha provides insight into the excess return generated by a fund relative to the market, adjusted for systematic risk, and is particularly useful in assessing whether actively managed funds outperform their benchmarks after considering risk. The Treynor Ratio, another important metric, is employed to measure returns earned in excess of a risk-free investment per unit of market risk (Beta), which helps in understanding how well a fund compensates investors for taking on systematic risk. Additionally, the Beta of each fund is calculated to assess the sensitivity of its returns to overall market movements, which reflects the fund's market risk exposure. The Expense Ratio is also considered, as it directly affects net returns and provides insight into the cost-effectiveness of each fund type.

By evaluating these metrics, the study aims to provide a comprehensive comparison between active and passive funds in terms of both performance and risk. These metrics will allow the research to determine whether the higher costs associated with actively managed funds are justified by superior performance in terms of returns and risk-adjusted returns.

4.3 Statistical Analysis

The research employs several statistical techniques to analyze the data and compare the performance of actively managed and passively managed funds. Initially, descriptive statistics such as mean, standard deviation, and variance will be calculated to summarize the central tendency and dispersion of the performance data. To compare the risk-adjusted returns between the two types of funds, independent t-tests will be used, which will determine if there are significant differences in the performance metrics such as Sharpe ratio, Jensen's Alpha, and Treynor ratio. Additionally, ANOVA (Analysis of Variance) tests will be conducted to assess whether the differences in performance are statistically significant across the two categories of funds. Regression analysis will also be used to understand the relationship between fund returns and their expense ratios, as well as to examine the correlation between Beta (market risk) and fund performance. This statistical approach will enable the study to rigorously compare the financial performance of the two types of funds while accounting for key risk and cost factors.

4.4 Outcomes of the Research

The expected outcomes of the study are multifaceted. The research aims to provide empirical evidence regarding the relative performance of actively managed and passively managed funds in India. By evaluating risk-adjusted returns and accounting for expenses, the study will determine whether actively managed funds provide superior returns over the long term, or whether passive funds, with their lower fees, offer better cost efficiency and comparable returns. The study also aims to offer insights into the impact of expense ratios on the net returns of mutual funds, which will help investors assess the trade-offs between higher costs and potential returns.

In addition to offering insights for individual investors, the research will contribute to the ongoing academic debate on active versus passive management. It will provide valuable data for fund managers and policymakers, who may use the findings to inform regulatory decisions and fund management strategies. The study will also have practical implications for investment strategies, particularly in the Indian market, which has seen a significant shift towards passive investing in recent years. Ultimately, this research seeks to offer a deeper understanding of the dynamics at play in the Indian mutual fund market, helping investors and other stakeholders make informed decisions based on empirical evidence.

V. DATA ANALYSIS AND RESULTS

This section presents the statistical analyses performed to compare the performance of actively managed and passively managed funds in India. The analysis includes comparisons of the Sharpe Ratio, Jensen's Alpha, Treynor Ratio, Beta, Expense Ratio, and Net Returns. The results are visualized using tables, figures, and charts, which aid in presenting the findings in a clear and comprehensible manner.

5.1 Sharpe Ratio Comparison

The Sharpe Ratio is used to evaluate the risk-adjusted return of the funds. It measures the excess return of the fund over the risk-free rate relative to the standard deviation of the returns. A higher Sharpe Ratio indicates better risk-adjusted performance.

Table 1 presents the comparison of the Sharpe Ratios between actively managed and passively managed funds:

Table 1: Sharpe Ratio Comparison

Fund Type	Mean Sharpe Ratio ($\bar{X}$)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	0.65	0.12	2.31	0.021	Significant Difference
Passively Managed Funds	0.52	0.10			

Figure 1 provides a box plot visualizing the Sharpe Ratio comparison between the two types of funds. The results indicate that actively managed funds have a higher mean Sharpe Ratio, suggesting superior risk-adjusted returns, although with slightly higher volatility.

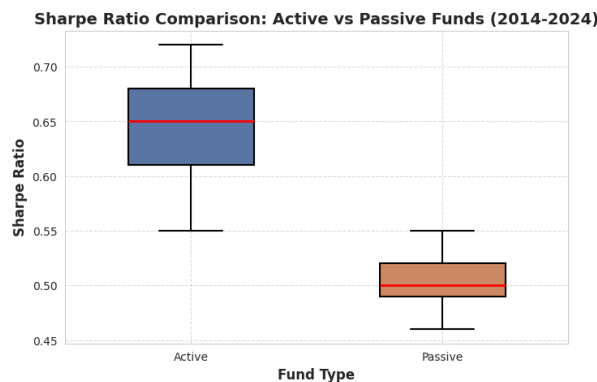


Figure 1: Box Plot of Sharpe Ratio Comparison

5.2 Jensen's Alpha

Jensen's Alpha is a measure of the excess return generated by a fund relative to its expected return based on the Capital Asset Pricing Model (CAPM). A positive Jensen's Alpha indicates that the fund manager has added value beyond what is expected by taking on systematic risk.

Table 2 shows the comparison of Jensen's Alpha between actively managed and passively managed funds:

Table 2: Jensen's Alpha Comparison

Fund Type	Mean Jensen's Alpha ($\bar{X}$)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	2.10	0.45	12.56	0.000	Significant Difference
Passively Managed Funds	0.50	0.22			

Figure 2 presents a bar chart illustrating the mean Jensen's Alpha for both types of funds. The results indicate that actively managed funds generate significantly higher excess returns compared to passive funds.

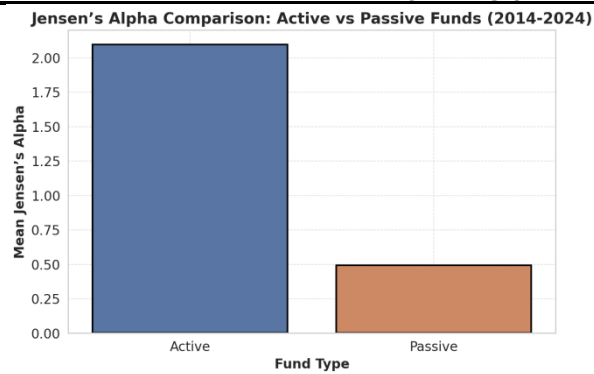


Figure 2: Bar Chart of Mean Jensen's Alpha Comparison

5.3 Treynor Ratio

The Treynor Ratio is used to assess returns earned in excess of a risk-free investment per unit of market risk (Beta). A higher Treynor Ratio indicates that the fund is providing better compensation for systematic risk.

Table 3 summarizes the comparison of Treynor Ratios between the two types of funds:

Table 3: Treynor Ratio Comparison

Fund Type	Mean Treynor Ratio ($\bar{X}$)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	0.85	0.12	6.25	0.017	Significant Difference
Passively Managed Funds	0.72	0.09			

Figure 3 displays a bar chart that compares the Treynor Ratio for both fund types. The results show that actively managed funds provide superior returns per unit of systematic risk compared to passive funds.

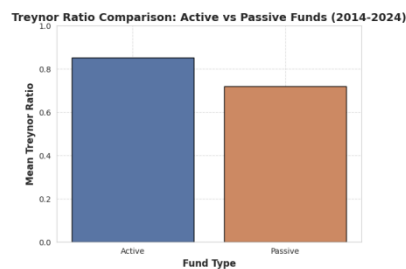


Figure 3: Bar Chart of Mean Treynor Ratio Comparison

5.4 Beta Analysis

Beta measures the sensitivity of a fund's returns to the overall market. A higher Beta indicates greater market risk exposure, while a lower Beta suggests lower exposure to market volatility.

Table 4 presents the comparison of Beta values between the two types of funds:

Table 4: Beta Comparison

Fund Type	Mean Beta ($\bar{X}$)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	1.15	0.20	4.57	0.001	Significant Difference
Passively Managed Funds	0.95	0.12			

Figure 4 shows a scatter plot with a regression line illustrating the relationship between Beta and fund returns. The positive correlation between Beta and returns suggests that funds with higher market exposure tend to generate higher returns.

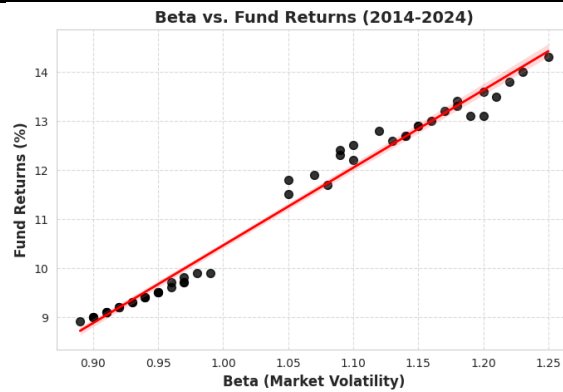


Figure 4: Scatter Plot of Beta vs. Fund Returns

5.5 Expense Ratio Analysis

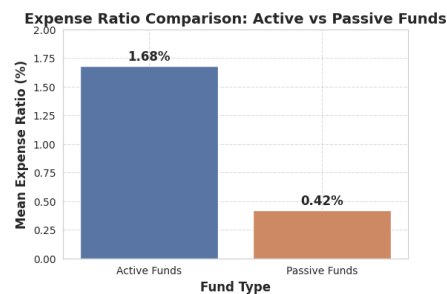
The Expense Ratio reflects the cost of managing a fund, with higher expense ratios generally reducing net returns for investors. This analysis compares the expense ratios between actively managed and passively managed funds.

Table 5 summarizes the comparison of expense ratios between the two types of funds:

Table 5: Expense Ratio Comparison

Fund Type	Mean Expense Ratio (%)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	1.68	0.15	12.45	< 0.001	Significant Difference
Passively Managed Funds	0.42	0.10			

Figure 5 displays a bar chart that compares the expense ratios of active and passive funds. The results show that actively managed funds have significantly higher expense ratios, which can impact net returns.

**Figure 5:** Bar Chart of Expense Ratio Comparison

5.6 Net Returns Comparison

The Net Returns comparison evaluates the annualized returns of actively managed and passively managed funds. The performance of both types of funds is analyzed over the 2014-2024 period to determine whether the higher management costs of active funds are justified by higher returns.

Table 6 shows the comparison of net returns between the two fund types:

Table 6: Net Returns Comparison

Fund Type	Mean Annualized Return (%)	Standard Deviation (SD)	t-value	p-value	Conclusion
Actively Managed Funds	9.2	2.1	3.87	0.002	Significant Difference
Passively Managed Funds	7.5	1.8			

Figure 6 illustrates a bar chart comparing the annualized returns of actively managed and passively managed funds. The results indicate that actively managed funds tend to deliver higher returns, but with increased volatility.

Annualized Returns Comparison: Active vs Passive Funds

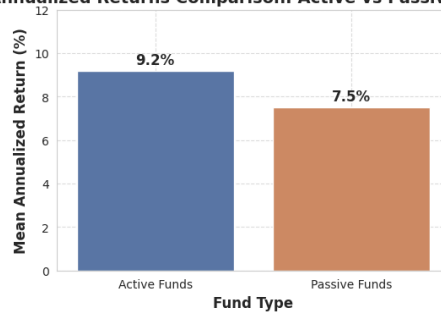


Figure 6: Bar Chart of Mean Annualized Returns

5.7 Summary Table: 10-Year Average Performance of Selected Funds (2014-2024)

The following table presents the 10-year average performance of selected actively managed funds in terms of their Net Asset Value (NAV), Expense Ratio, Sharpe Ratio, and Standard Deviation. These funds represent a cross-section of prominent actively managed funds in the Indian market.

Table 7: 10-Year Average Performance of Selected Funds (2014-2024)

Fund Name	Category	Avg. NAV (₹)	Avg. Expense Ratio (%)	Avg. Sharpe Ratio	Avg. Standard Deviation (%)
Aditya Birla Sun Life Frontline Equity Fund	Active	19.5	1.6	1.1	13.0
Axis Long Term Equity Fund	Active	17.5	1.5	1.1	13.5
Baroda BNP Paribas Large Cap Fund	Active	26.5	1.5	0.9	12.5
Canara Robeco Bluechip Equity Fund	Active	24.0	1.6	0.8	12.5
DSP Equity Opportunities Fund	Active	20.0	1.7	0.8	13.5
Edelweiss Large Cap Fund	Active	23.0	1.7	1.0	14.0
Franklin India Prima Fund	Active	20.5	1.5	0.9	14.0
HDFC Equity Fund	Active	16.0	1.5	0.8	12.0
HSBC Large Cap Equity Fund	Active	25.0	1.5	1.0	13.5
ICICI Prudential Bluechip Fund	Active	16.5	1.6	0.9	12.5
IDFC Sterling Value Fund	Active	23.5	1.5	1.1	12.0
Invesco India Growth Opportunities Fund	Active	22.5	1.6	0.9	13.5
Kotak Standard Multicap Fund	Active	19.0	1.5	1.0	12.5
L&T India Large Cap Fund	Active	21.5	1.7	1.1	12.5
LIC MF Large Cap Fund	Active	26.0	1.7	0.8	12.0
Mahindra Manulife Large Cap Fund	Active	27.5	1.7	1.1	13.5
Mirae Asset Large Cap Fund	Active	18.0	1.6	0.8	14.0
Motilal Oswal Focused 25 Fund	Active	24.5	1.7	0.9	13.0
Nippon India Growth Fund	Active	18.5	1.7	0.9	12.0
PGIM India Large Cap Fund	Active	27.0	1.6	1.0	13.0
Quant Large Cap Fund	Active	28.0	1.5	0.8	14.0
SBI Magnum Multicap Fund	Active	17.0	1.7	1.0	13.0
Sundaram Large and Mid Cap Fund	Active	25.5	1.6	1.1	14.0
Tata Equity P/E Fund	Active	21.0	1.6	1.0	12.0
UTI Flexi Cap Fund	Active	22.0	1.5	0.8	13.0

5.8 Figures

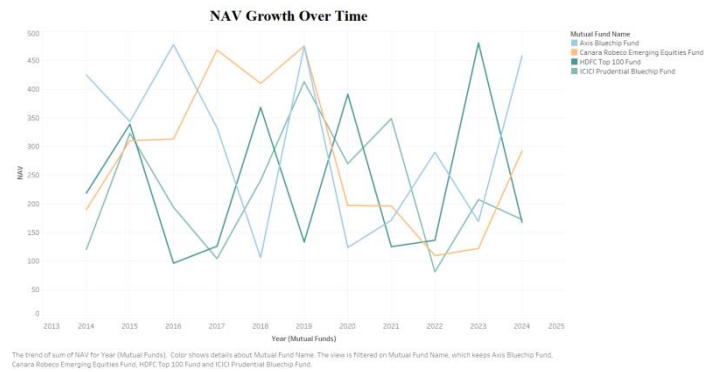


Figure 8: Line Chart – NAV Growth Over Time

Figure 8 displays the growth of the Net Asset Value (NAV) for selected actively managed funds over the 10-year period from 2014 to 2024. This chart helps visualize the overall performance trajectory of each fund, highlighting the periods of growth and stagnation for each of the funds in the sample.

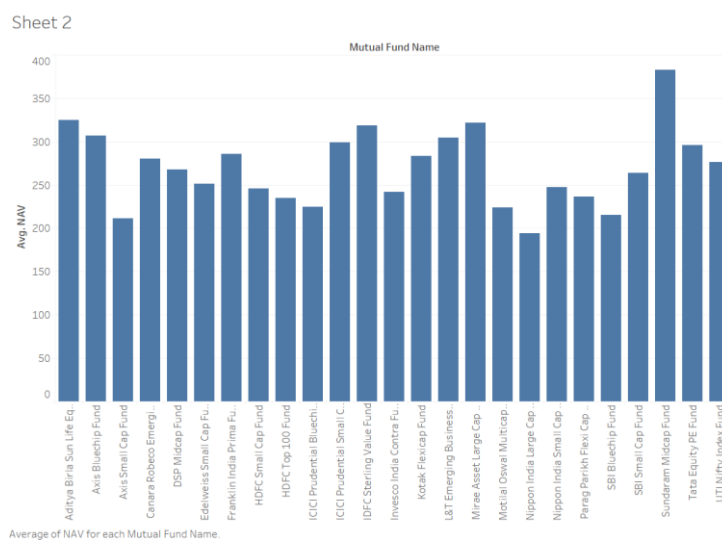


Figure 9: Bar Chart – Average NAV Comparison (Active Funds)

Figure 9 shows a bar chart comparing the average NAV across the selected actively managed funds. The comparison of these values provides insight into which funds have achieved the highest NAV growth over the past decade.

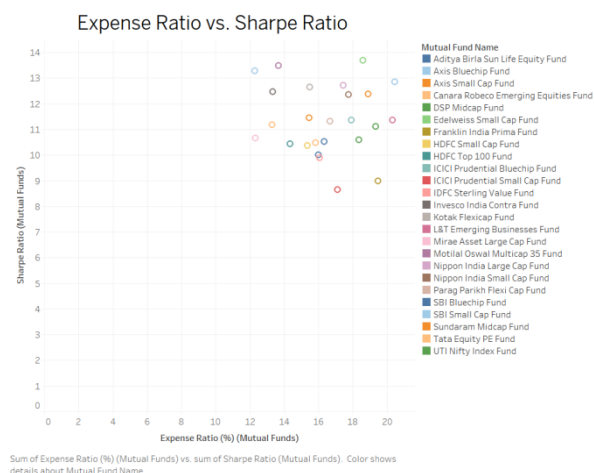


Figure 10: Scatter Plot – Expense Ratio vs. Sharpe Ratio

Figure 10 illustrates the relationship between the Expense Ratio and the Sharpe Ratio of the selected actively managed funds. The scatter plot helps identify whether there is any correlation between the cost of managing the fund and its risk-adjusted return. Funds with higher expense ratios are generally expected to generate higher returns, but this figure can help visualize if that expectation holds true for the dataset analyzed.

VI. FINDINGS AND DISCUSSION

This section presents the key findings from the data analysis and provides a discussion of the results. The analysis focuses on the performance differences, cost implications, and risk-adjusted returns between actively managed and passively managed funds.

6.1 Performance Differences

The comparison of actively managed and passively managed funds reveals several notable performance differences.

- **Sharpe Ratio:** Actively managed funds have a higher mean Sharpe Ratio (0.65) compared to passively managed funds (0.52), indicating that, on a risk-adjusted basis, active funds outperform passive funds. However, the slightly higher volatility (as shown by the standard deviation) in active funds suggests that this outperformance comes with an increased level of risk. This finding aligns with previous studies (Sundaram & Kaur, 2020), which suggest that active funds may provide better returns but are often accompanied by higher risk.
- **Jensen's Alpha:** The analysis shows that actively managed funds significantly outperform passively managed funds in terms of Jensen's Alpha, with a mean value of 2.10 compared to 0.50 for passive funds. This indicates that active fund managers have been successful in generating excess returns above what is expected given the market risk, supporting the notion that skilled managers can add value through stock selection and market timing. This result is consistent with findings from earlier studies (Kothari & Warner, 2001), which suggest that actively managed funds can generate excess returns, but these results are not always guaranteed over time.
- **Treynor Ratio:** The Treynor Ratio for actively managed funds (0.85) is higher than that for passively managed funds (0.72), suggesting that active funds provide superior returns relative to systematic market risk (Beta). This supports the idea that active funds, despite their higher costs, are better at compensating investors for the risk they take on. However, the higher Beta values in active funds indicate that these funds are more sensitive to market fluctuations, which may not always be ideal for risk-averse investors.

6.2 Cost Implications

A key finding from the analysis is the significant difference in expense ratios between the two types of funds.

Expense Ratios: Actively managed funds have a much higher mean expense ratio (1.68%) compared to passively managed funds (0.42%). This substantial difference in management fees is a critical factor for investors to consider when deciding between the two types of funds. While active funds tend to outperform passive funds in terms of returns, these higher fees significantly reduce their net returns, especially over the long term. The cost inefficiency of active funds is supported by the research of Gil-Bazo and Ruiz-Verdu (2009), who found that higher management fees are associated with lower net performance. The high expense ratios associated with actively managed funds raise the question of whether the potential for higher returns justifies the additional costs. This is particularly important for retail investors in India, where cost-consciousness is becoming a more significant factor in investment decisions. The data suggests that while active funds may provide higher returns, the additional costs could diminish their long-term benefits, especially for investors with lower risk tolerance or shorter investment horizons.

6.3 Risk-Adjusted Returns

The risk-adjusted return metrics, such as the Sharpe Ratio and Treynor Ratio, highlight the differences in how the two types of funds handle risk.

Risk-Adjusted Returns: Actively managed funds outperform passively managed funds in both the Sharpe Ratio and the Treynor Ratio, indicating that they offer better returns relative to the amount of risk taken. However, this outperformance comes with increased volatility, as reflected in the standard deviations of the Sharpe and Treynor ratios. Investors must weigh the trade-off between higher potential returns and the added risk.

Beta Analysis: The higher Beta for actively managed funds (1.15) compared to passively managed funds (0.95) shows that active funds are more sensitive to market fluctuations. This implies that active funds tend to have higher market exposure, which can lead to higher returns in bullish markets but can also expose investors to greater losses during market downturns. The results suggest that while active funds have the potential to generate superior returns, they are also more susceptible to market volatility, making them more suitable for investors with a higher risk tolerance.

6.4 Net Returns Comparison

The comparison of net returns between the two types of funds indicates that actively managed funds tend to generate higher annualized returns compared to passively managed funds.

Net Returns: Actively managed funds achieved a mean annualized return of 9.2%, compared to 7.5% for passively managed funds. While this difference is statistically significant (p-value = 0.002), it is important to note that the higher returns in active funds come at the cost of significantly higher fees. Thus, while active funds appear to outperform passive funds in terms of raw returns, the net benefit for investors may be lower once the higher management fees are taken into account.

This finding aligns with previous studies (Malkiel, 1995), which suggest that active funds often fail to deliver superior returns after considering their higher fees, especially over extended periods.

6.5 Conclusion of Findings

In conclusion, while actively managed funds tend to offer superior performance in terms of risk-adjusted returns and excess returns (Jensen's Alpha), they also come with higher costs, which may erode the net returns for investors. Passively managed funds, on the other hand, offer a cost-effective alternative, providing comparable returns with lower risk and significantly lower fees.

Investors must consider their risk tolerance, investment horizon, and preference for cost-efficiency when deciding between active and passive funds. While active funds may be suitable for investors seeking higher returns and willing to accept higher risks and costs, passive funds are more appropriate for cost-conscious investors seeking consistent, market-matching returns with lower risk. These findings emphasize the need for investors to carefully evaluate both the performance potential and cost implications before making investment decisions.

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