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A STUDY ON RISK RETURN ANALYSIS OF SELECTED EQUITY MUTUAL FUNDS IN INDIA

Dr. Hanamanth N Mustari

Assistant professor, Dept. of Commerce, Karnatak University P.G. Centre, Karwar, India.

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ABSTRACT

Mutual funds are pooled investment vehicles that offer diversification, professional management, and accessibility to investors. This study evaluates the performance of selected equity mutual funds in India using Sharpe Ratio, Treynor Ratio, and Jensen's Alpha over a five-year period from 1st April 2021 to 31st March 2025. The study is based on secondary data. The analysis covers small-cap, mid-cap, and large-cap schemes from leading Asset Management Companies. Results indicate that Nippon Life India Mutual Fund consistently achieves superior risk-adjusted returns across categories. The study underscores the importance of evaluating both return and risk in mutual fund selection for informed investment decisions. The findings offer practical insights for investors, fund managers, and policymakers by identifying high-performing funds and promoting systematic performance evaluation. This research contributes to the literature on mutual fund analysis in emerging markets, particularly within the Indian financial landscape.

KEYWORDS: Mutual Funds, Equity Funds, Performance Evaluation, Sharpe Ratio, Risk-Adjusted Return.

I. INTRODUCTION

Mutual funds are dynamic investment vehicles that pool money from multiple investors to invest in a diversified portfolio of securities. Investors hold units representing proportional ownership of the fund's assets. These funds operate as open-ended (allowing continuous transactions) or closed-ended (fixed units traded on stock exchanges). Originating in India in 1963 with the Unit Trust of India (UTI), the mutual fund industry has grown into a vital part of the financial system, channeling savings into capital markets and supporting economic growth. Regulated by SEBI, mutual funds consist of key entities: sponsor, trust, AMC, and custodian. They offer benefits such as professional management and diversification, making them accessible and less risky for common investors. However, they are subject to market risks, fees, and taxes. Understanding mutual fund structures and performance is essential for aligning investments with financial goals and risk tolerance.

II. Objectives of the study:

The objectives established for this study are as follows:

1. To analyse the trends in returns of selected mutual funds.
2. To evaluate the risk-adjusted performance of selected equity mutual funds using standard performance metrics such as Sharpe Ratio, Treynor Ratio, and Jensen’s Alpha.

III. RESULTS AND DISCUSSION:

Performance data for five randomly selected mutual fund schemes across different banks were analyzed. Statistical tools like percentages and growth rates were used, along with standard performance evaluation measures including Sharpe Ratio, Treynor Ratio, and Jensen’s Alpha.

1. Sharpe Measurement Ratio

In this model, it measures the excess return per unit of total risk. It assumes investors are concerned with overall risk and assesses how well a fund compensates for the risk taken.

$$\text{Sharpe index} = \frac{\text{Portfolio average return} - \text{Risk free rate of return}}{\text{Standard deviation of the portfolio return}}$$

Table 1.1 EQUITY FUND -SMALL CAP

MUTUAL FUND COMPANY	Rp	Rf	S.D	Sharpe Ratio	Rank
SBI MF	20.12	7.365	17.78	0.718	III
ICICI PRUDENTIAL MF	23.55	7.365	23.57	0.687	IV
HDFC MF	25.21	7.365	22.15	0.805	I
NIPPON LIFE INDIA MF	29.49	7.365	27.99	0.791	II
KOTAK MAHINDRA MF	21.09	7.365	22.43	0.612	V

Source: Groww & www.amfi.com

The above table 1.1 presents the performance of selected equity small-cap mutual funds using the Sharpe Ratio, which evaluates risk-adjusted returns. Among the five mutual fund companies, **HDFC Mutual Fund** ranks highest with a Sharpe Ratio of **0.805**, indicating the best return per unit of total risk. It is followed by **Nippon Life India Mutual Fund** (0.791) and **SBI Mutual Fund** (0.718). **ICICI Prudential Mutual Fund** and **Kotak Mahindra Mutual Fund** show comparatively lower risk-adjusted performance, with Sharpe Ratios of **0.687** and **0.612**, respectively. Overall, HDFC MF demonstrates superior performance among the selected small-

cap funds during the study period.

Table 1.2 EQUITY FUND - MID CAP

MUTUAL FUND COMPANY	Rp	Rf	S.D	Sharpe Ratio	Rank
SBI MF	20.99	7.365	18.31	0.744	IV
ICICI PRUDENTIAL MF	21.71	7.365	25.55	0.562	V
HDFC MF	25.61	7.365	23.93	0.763	III
NIPPON LIFE INDIA MF	27.06	7.365	25.41	0.775	II
KOTAK MAHINDRA MF	21.30	7.365	16.27	0.857	I

Source: Groww & www.amfi.com

The above table 1.2 indicate that the Sharpe Ratio analysis of selected mid-cap equity mutual funds reveals that **Kotak Mahindra Mutual Fund** achieved the highest risk-adjusted return with a Sharpe Ratio of **0.857**, indicating superior performance in terms of returns generated per unit of total risk. **Nippon Life India Mutual Fund** and **HDFC Mutual Fund** follow with Sharpe Ratios of **0.775** and **0.763**, respectively, reflecting efficient risk-return balance. **SBI Mutual Fund** ranks fourth (0.744), while **ICICI Prudential Mutual Fund**, with the lowest Sharpe Ratio of **0.562**, indicates relatively weaker risk-adjusted performance among the five funds analyzed.

Table 1.3 EQUITY FUND - LARGE CAP

MUTUAL FUND COMPANY	Rp	Rf	S.D.	Sharpe Ratio	Rank
SBI MF	14.25	7.365	12.66	0.544	IV
ICICI PRUDENTIAL MF	18.69	7.365	18.60	0.609	III
HDFC MF	18.65	7.365	17.66	0.639	II
NIPPON LIFE INDIA	21.22	7.365	20.15	0.687	I

MF					
KOTAK MAHINDRA MF	15.40	7.365	14.86	0.541	V

Source: Groww & www.amfi.com

The table 1.3 represents that the Sharpe Ratio analysis for selected large-cap equity mutual funds indicates that **Nippon Life India Mutual Fund** delivers the highest risk-adjusted return with a Sharpe Ratio of **0.687**, making it the most efficient performer in this category. It is followed by **HDFC Mutual Fund** (0.639) and **ICICI Prudential Mutual Fund** (0.609), which also show favorable risk-return profiles. **SBI Mutual Fund** and **Kotak Mahindra Mutual Fund**, with Sharpe Ratios of **0.544** and **0.541** respectively, reflect lower efficiency in converting risk into returns, placing them at the bottom of the ranking among the five funds analyzed.

2. Treynor Measurement Ratio

It was developed by Jack Treynor. Treynor's Index is a ratio of return generated by the fund over and above risk-free return (i.e., Government securities, Treasury bills), during the given period of time and systematic risk associated with beta.

$$\text{Treynor's index} = \frac{(R_p - R_f)}{B_p}$$

Table 2.1 EQUITY FUND - SMALL CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Treynor Ratio	Rank
SBI MF	20.12	7.365	1.68	7.60	IV
ICICI PRUDENTIAL MF	23.55	7.365	2.07	7.82	III
HDFC MF	25.21	7.365	2.03	8.79	I
NIPPON LIFE INDIA MF	29.49	7.365	2.58	8.57	II
KOTAK MAHINDRA MF	21.09	7.365	2.03	6.77	V

Source: Groww & www.amfi.com

The table 2.1 shows that the Treynor Ratio analysis of selected small-cap equity mutual funds reveals that HDFC Mutual Fund achieved the highest risk-adjusted return per unit of systematic risk, with a Treynor Ratio of 8.79, indicating strong performance by effectively compensating for market risk. It is followed by Nippon Life India Mutual Fund (8.57) and ICICI Prudential Mutual Fund (7.82), both demonstrating relatively efficient risk-return profiles. SBI Mutual Fund (7.60) and Kotak Mahindra Mutual Fund (6.77) lag behind, reflecting lower returns for the level of market risk undertaken, and thus rank fourth and fifth, respectively.

Table 2.2 EQUITY FUND - MID CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Treynor Ratio	Rank
SBI MF	20.99	7.365	1.82	7.49	IV
ICICI PRUDENTIAL MF	21.71	7.365	2.60	5.52	V
HDFC MF	25.61	7.365	2.38	7.67	II
NIPPON LIFE INDIA MF	27.06	7.365	2.58	7.63	III
KOTAK MAHINDRA MF	21.30	7.365	1.65	8.46	I

Source: Groww & www.amfi.com

The above table 2.2 depicts that the Treynor Ratio analysis of selected mid-cap equity mutual funds indicates that Kotak Mahindra Mutual Fund leads with the highest risk-adjusted return per unit of systematic risk at 8.46, reflecting superior fund management in handling market risk. HDFC Mutual Fund (7.67) and Nippon Life India Mutual Fund (7.63) follow closely, indicating strong but slightly lower performance. SBI Mutual Fund ranks fourth with a Treynor Ratio of 7.49, while ICICI Prudential Mutual Fund, with the lowest ratio of **5.52**, shows the weakest ability to generate excess returns relative to its market risk exposure in the mid-cap category.

Table 2.3 EQUITY FUND - LARGE CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Treynor Ratio	Rank
SBI MF	14.25	7.365	1.29	5.34	IV
ICICI PRUDENTIAL MF	18.69	7.365	1.88	6.02	III
HDFC MF	18.65	7.365	1.72	6.55	II
NIPPON LIFE INDIA MF	21.22	7.365	1.97	7.03	I
KOTAK MAHINDRA	15.40	7.365	1.51	5.31	V

MF					
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Source: Groww & www.amfi.com

The table 2.3 shows that the Treynor Ratio analysis of large-cap equity mutual funds shows that **Nippon Life India Mutual Fund** delivers the highest return per unit of systematic risk, with a Treynor Ratio of **7.03**, indicating the most efficient risk-adjusted performance in this category. **HDFC Mutual Fund** and **ICICI Prudential Mutual Fund** follow with Treynor Ratios of **6.55** and **6.02**, respectively, reflecting solid returns relative to their beta values. **SBI Mutual Fund** (5.34) and **Kotak Mahindra Mutual Fund** (5.31) rank lowest, suggesting less effective compensation for market risk compared to their peers.

3. Jensen’s Measurement Ratio

Jensen's model proposes another risk adjusted performance measure. Michael Jensen developed this measure and is something referred as the differential return method. This measure involves evaluation of returns that the fund has generated Vs the return actually out of the fund given at that level of systematic risk. The surplus between the two returns is called Alpha, which measures the performance of a fund compared with the actual returns over the period. Required rate of return on fund at a given level of Beta can be calculated as:

$$\text{Jensen's Alpha} = R_p - [R_f + \beta (R_m - R_f)]$$

Table 3.1 EQUITY FUND -SMALL CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Rm	Jensen Ratio	Rank
SBI MF	20.12	7.365	1.68	13.13	3.08	IV
ICICI PRUDENTIAL MF	23.55	7.365	2.07	13.13	4.25	III
HDFC MF	25.21	7.365	2.03	13.13	6.14	II
NIPPON LIFE INDIA MF	29.49	7.365	2.58	13.13	7.24	I
KOTAK MAHINDRA MF	21.09	7.365	2.03	13.13	2.03	V

Source: Groww & www.amfi.com

The table 3.1 explains that Jensen’s Alpha analysis of selected small-cap equity mutual funds reveals that Nippon Life India Mutual Fund outperformed its expected return by the highest

margin, with an alpha of 7.24, indicating excellent fund management and superior stock-picking ability. HDFC Mutual Fund follows with a strong alpha of 6.14, reflecting effective risk-adjusted performance. ICICI Prudential Mutual Fund ranks third with a moderate alpha of 4.25, while SBI Mutual Fund records an alpha of 3.08, showing modest outperformance. Kotak Mahindra Mutual Fund, with the lowest alpha of 2.03, indicates the least excess return generated over its expected performance based on systematic risk.

Table 3.2 EQUITY FUND -MID CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Rm	Jensen Ratio	Rank
SBI MF	20.99	7.365	1.82	13.13	3.14	IV
ICICI PRUDENTIAL MF	21.71	7.365	2.60	13.13	-0.64	V
HDFC MF	25.61	7.365	2.38	13.13	4.53	II
NIPPON LIFE INDIA MF	27.06	7.365	2.58	13.13	4.82	I
KOTAK MAHINDRA MF	21.30	7.365	1.65	13.13	4.44	III

Source: Groww & www.amfi.com

The table 3.2 indicates that Jensen’s Alpha analysis for selected mid-cap equity mutual funds highlights Nippon Life India Mutual Fund as the top performer with an alpha of 4.82, indicating the fund has generated returns significantly above its expected performance based on market risk. HDFC Mutual Fund (4.53) and Kotak Mahindra Mutual Fund (4.44) also exhibit strong positive alphas, reflecting effective portfolio management and security selection. SBI Mutual Fund achieved a moderate alpha of 3.14, suggesting reasonable outperformance. In contrast, ICICI Prudential Mutual Fund recorded a negative alpha of -0.64, indicating underperformance relative to its expected return based on market conditions and systematic risk.

Table 3.3 EQUITY FUND -LARGE CAP

MUTUAL FUND COMPANY	Rp	Rf	BETA	Rm	Jensen Ratio	Rank
SBI MF	14.25	7.365	1.29	13.13	-0.54	IV
ICICI PRUDENTIAL MF	18.69	7.365	1.88	13.13	0.48	III
HDFC MF	18.65	7.365	1.72	13.13	1.36	II
NIPPON LIFE INDIA MF	21.22	7.365	1.97	13.13	2.49	I
KOTAK MAHINDRA MF	15.40	7.365	1.51	13.13	-0.68	V

Source: Groww & www.amfi.com

The above table 3.3 indicates that the Jensen’s Alpha analysis for large-cap equity mutual funds indicates that Nippon Life India Mutual Fund delivered the highest excess return over the expected performance, with an alpha of 2.49, showcasing strong risk-adjusted performance. HDFC Mutual Fund (1.36) and ICICI Prudential Mutual Fund (0.48) also generated positive alphas, reflecting effective fund management. In contrast, SBI Mutual Fund (–0.54) and Kotak Mahindra Mutual Fund (–0.68) recorded negative alphas, suggesting underperformance relative to their expected returns based on market risk, highlighting less efficient portfolio strategies in the large-cap segment.

CONCLUSION:

In conclusion, this study has provided a comprehensive analysis of equity mutual fund performance by evaluating various schemes from selected Asset Management Companies (AMCs) across small-cap, mid-cap, and large-cap categories. The use of risk-adjusted performance tools such as the Sharpe Ratio, Treynor Ratio, and Jensen’s Alpha has helped in assessing not only the returns but also the level of risk involved in each scheme. The study reveals that while some funds deliver high returns, they also carry high risk, which may not be suitable for all investors. On the other hand, certain large-cap funds offer stable and consistent returns, making them appropriate for low-risk investors. Among the evaluated AMCs, Nippon Mutual Fund showed outstanding overall performance, indicating strong fund management and investment strategy. The research emphasizes the importance of making informed investment decisions based on proper analysis rather than relying solely on past returns or market trends. It also highlights the need for investors to align their investments with their financial goals and risk appetite. Overall, this research not only deepens the understanding of mutual fund



performance but also encourages the adoption of analytical tools for better investment planning and financial decision-making.

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