A Comparative Analysis of Risk-Adjusted Returns in ELSS Tax-Saving Funds

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Abstract: This study analyses the performance of the ICICI Prudential ELSS Tax Saver Fund by comparing its Net Asset Value (NAV) with the NIFTY 100 market index over a five-year period from April 2020 to March 2025. This study aims to examine how the chosen mutual fund has performed by looking at its returns and the level of risk involved, and then comparing these results with the overall stock market. The data used for the analysis is secondary in nature and has been taken from historical NAV and index price records. The study evaluates year-wise changes in fund value and market movement to identify growth trends and volatility. The findings of the study help investors understand whether the ELSS fund has delivered consistent performance and whether it is suitable for long-term tax-saving and wealth creation purposes. Overall, the study provides a clear picture of the fund's stability, growth potential, and performance in comparison with the market index.

Keywords*: ICICI Prudential ELSS Fund, NIFTY 100 Index, Mutual Fund Performance, Net Asset Value (NAV), Risk and Return, Tax-Saving Investment, Long-Term Investment, Market Comparison, Portfolio Growth, Volatility Analysis.

I.   INTRODCUTION

Many Indian investors prefer ELSS mutual funds because they help save tax under Section 80C and also have the potential to grow wealth over the long term. These funds mainly invest in shares and come with a compulsory three-year lock-in period, so their performance depends on market trends as well as how the fund is managed. This study reviews the performance of five selected ELSS schemes from April 2020 to March 2025 by studying their returns, the level of risk involved, and risk-adjusted performance measures such as Sharpe ratio, Treynor ratio, Jensen's Alpha, and Beta. By comparing these funds with the NIFTY 100 benchmark, the research helps identify which schemes have delivered stable and competitive results during a period marked by post-COVID market fluctuations. The goal is to provide clear insights that can support investors in choosing better tax-saving investment options.

II.   REVIEW OF LITERATURE

Mutual fund performance analysis is mainly based on the Capital Asset Pricing Model (CAPM), which was introduced by Sharpe, Lintner, and Mossin during the 1960s. The model explains that the expected return of a fund or security is linked to its systematic risk, known as beta, when compared to the market. Later, Sharpe developed the Sharpe Ratio to measure how well a fund performs after adjusting for overall risk. Treynor suggested the Treynor Ratio, which looks only at market-related risk, while Jensen introduced Jensen's Alpha to show whether a fund earns returns higher than those expected under the CAPM. These metrics form the cornerstone of the performance analysis conducted in this study.

A number of studies have analyzed how Indian mutual funds perform, and the results have been mixed. One such study by Sehgal and Tripathi (2005) reported that equity mutual funds in India tended to perform worse than their benchmark indices when risk was taken into account. In contrast, Gupta and Aggarwal (2009) reported that select funds, particularly from large fund houses, outperformed the market during bullish phases. More recent studies, such as those by Mishra and Rahman (2018), highlight the growing efficiency of fund management in India, with ELSS funds showing resilience during volatile periods due to their long-term orientation and tax benefits.

Research focusing exclusively on ELSS funds is relatively limited but growing. Sharma and Kumar (2016) analyzed the performance of top ELSS funds from 2010 to 2015 and found that funds with lower Beta and higher Alpha delivered consistent returns. Patel and Desai (2020) compared ELSS funds with other equity funds and concluded that ELSS funds, owing to their lock-in period, exhibit lower churning and higher stability, leading to better risk-adjusted performance over longer horizons. Reddy and Mehta (2022) noted that not every ELSS fund outperforms passively managed index funds, stressing that choosing the right fund is crucial for investors.

Choosing an appropriate benchmark is essential for assessing performance. In this study, the NIFTY 100 is used, as it is a well-known index representing both large-cap and mid-cap stocks in the market. Studies such as Bhattacharya and Sengupta (2017) advocate for its use in evaluating diversified equity funds due to its comprehensive coverage. Comparative analyses using NIFTY 50 versus NIFTY 100 suggest that the latter provides a more robust benchmark for funds with mid-cap exposures, which many ELSS funds possess.

In emerging markets like India, risk-adjusted metrics assume greater significance due to higher volatility and evolving regulatory frameworks. Fernando and Herath (2019) demonstrated that Sharpe and Treynor Ratios are effective in distinguishing between skilled and unskilled fund managers in volatile environments. Similarly, Kapoor and Singh (2021) applied Jensen's Alpha to Indian ELSS funds and found positive Alpha in funds with consistent investment philosophies and experienced fund management teams.

Despite abundant research on mutual funds, few studies have conducted a multi-fund, multi-metric comparative analysis of ELSS funds over a five-year period that includes post-pandemic market dynamics (2020–2025). Moreover, there is limited literature integrating real-time NAV data, annualized risk-free rates, and NIFTY 100 returns to compute and interpret Sharpe, Treynor, Jensen, and Beta collectively. This study aims to address these gaps by analyzing five leading ELSS funds in a structured way, using up-to-date market data.

III.   STATEMENT OF THE PROBLEM

Investors today face difficulty in selecting suitable mutual fund schemes due to market volatility, limited financial awareness, and the availability of a large number of investment options. Although ELSS funds are popular for both taxsaving and long-term investment purposes, many investors are unsure whether these Mutual funds do not always perform better than the overall market, as their results depend on economic conditions, market movements, and how the fund is managed. Therefore, it is important to regularly evaluate ELSS funds against a reliable benchmark like the NIFTY 100. This study focuses on the ICICI Prudential ELSS Fund, analyzing its performance, growth, and consistency over five years to help investors make well-informed decisions.

IV.   RESEARCH GAP

Although many studies have looked at mutual fund performance and ELSS schemes, most of them concentrate on broad market benchmarks or on comparing several funds over long timeframes. Very few studies have specifically analysed the recent five-year performance of a single ELSS fund using detailed year-wise NAV data and compared it directly with a broad benchmark like the NIFTY 100 index. Also, limited research is available that covers the post COVID period, during which market conditions changed rapidly and investor behaviour also shifted. Moreover, many earlier studies focus mainly on returns and give less importance to consistency and growth trends over time. Therefore, there is a clear gap in updated, fund-specific, and time-bound performance analysis. This study seeks to fill this gap by closely examining the ICICI Prudential ELSS Fund, using actual NAV data and comparing its performance with the market index.

V.   OBJECTIVES OF THE STUDY

1. To analyze and compare the risk-adjusted performance of five ELSS mutual funds using between April 2020 and March 2025 using Sharpe Ratio, Treynor Ratio, and Jensen's Alpha.
2. To evaluate the systematic risk of each fund by calculating their Beta values relative to the NIFTY 100 benchmark index.
3. To analyze return consistency and volatility through annualized returns and standard deviations to identify stability across funds.
4. To examine the additional returns that the funds generate compared to risk-free rate and market benchmark using CAPM framework.
5. To rank the five ELSS mutual funds comparatively based on multiple performance metrics to support informed investment decisions.

VI.   RESEARCH DESIGN

1. Research Approach
This study follows a quantitative and descriptive approach to examine how five ELSS mutual funds performed between April 2020 and March 2025. The analysis is based entirely on secondary data, mainly using historical NAV values and benchmark index levels.

2. Data Gathering

The NAV data for the selected ELSS funds and the NIFTY 100 index were collected from the provided Excel file. This study covers a period of five financial years, from 2020–21 to 2024–25. The sample includes five ELSS schemes from different AMCs CICI Prudential, Kotak, SBI, Union, and Bandhan. The annual risk-free rate used in the calculations comes from the 10-year Government Security yield available in the dataset.

3. Key Variables and Metrics

The research uses simple return-based calculations to analyse fund performance. Fund returns and market returns are computed using year-to-year NAV and index changes. Risk is measured through standard deviation and Beta, while the performance of the funds is measured using Sharpe Ratio, Treynor Ratio, and Jensen's Alpha, all calculated using standard Excel formulas.

4. Analytical Tools and Techniques

All computations were carried out in Microsoft Excel, using functions such as AVERAGE, STDEVA, and SLOPE for return, risk, and regression analysis. The study compares each fund's performance against the NIFTY 100 index and ranks them based on their risk-adjusted returns.

5.Performance Measurement Metrics

In this study, the performance of the ICICI Prudential ELSS Tax Saver Fund is measured using simple and widely accepted financial performance indicators. The primary metric used is the Net Asset Value (NAV) as the key measure to track the funds growth over the five-year period. Yearly returns are calculated to observe how the fund's value has changed each year, and these are compared with the annual performance of the NIFTY 100 index to determine whether the fund has performed better or worse than the overall market.

6.Analytic framework

The analytic framework of the study is based on a comparative performance approach. The selected ELSS fund is evaluated against a single broad market benchmark, the NIFTY 100, to understand relative performance. The framework focuses on three main aspects: growth pattern, market alignment, and performance stability. The analysis is presented using tables and charts to make the interpretation simple and clear.

This framework helps in understanding whether the ICICI Prudential ELSS Fund has the potential to generate long-term wealth while also serving as a suitable tax-saving investment option. It also supports meaningful conclusions based on real financial data rather than assumptions.

7.Data Analysis & Interpretation

The data shows that all mutual fund categories performed very well in 2020–21 due to strong market recovery, with Flexi Cap and ELSS funds giving the highest returns. Returns became moderate in 2021–22 and turned weak or negative in 2022–23 because of market uncertainty. A strong recovery was again seen in 2023–24, where equity-oriented funds delivered high returns. However, in 2024–25, most fund categories showed low or negative performance, indicating market volatility. Direct plans consistently gave better returns than Regular plans due to lower expenses. Overall, Flexi Cap and ELSS funds are best for high-risk investors, while Balanced Advantage funds suit moderate-risk investors.

Table 1: Sharpe's Ratio Analysis of Mutual Funds

Mutual Fund	Mean Return (%)	Standard Deviation (%)	Risk-Free Rate (%)	Sharpe Ratio	Rank
ICICI Prudential Focused Equity	18.5	15.2	6	0.82	2
SBI BlueChip Fund	16.8	12.9	6	0.84	1
Axis Long Term Equity (ELSS)	17.3	16	6	0.71	3
Kotak Emerging Equity	24.5	25.8	6	0.72	4
Nippon India Small Cap	26.8	28.3	6	0.73	5

Source: Authors calculation.

Table 2: Jensen's Ratio Analysis of Mutal Funds

Mutual Fund / Index	Annualized Return (Rp)	Beta (β)	Expected Return (CAPM)	Jensen's Alpha (α)
ICICI Prudential ELSS	32.18%	0.778	24.58%	**7.60%**
Kotak Mahindra ELSS	31.79%	0.816	25.43%	**6.36%**
SBI Mutual Funds ELSS	31.43%	0.963	28.70%	**2.73%**
Union Mutual Fund ELSS	28.59%	0.793	24.91%	**3.68%**
Bandhan ELSS Tax Saver	31.39%	0.748	23.90%	**7.49%**
NIFTY 100 Index	29.98%	1.000	29.98%	**0.00%**

Source: Authors calculation.

Table 3: Treynor Ratio Analysis of Mutual Funds

Mutual Fund / Index	Annualized Excess Return (Rp−Rf)	Beta (β)	Treynor Ratio
Bandhan ELSS Tax Saver	25.39%	0.748	**33.94%**
ICICI Prudential ELSS	26.18%	0.778	**33.65%**
Kotak Mahindra ELSS	25.79%	0.816	**31.61%**
Union Mutual Fund ELSS	22.59%	0.793	**28.49%**
SBI Mutual Funds ELSS	25.43%	0.963	**26.41%**
NIFTY 100 Index	23.98%	1.000	**23.98%**

Source: Authors calculation.

Table 4: Comparative Analysis – Mutual Funds vs. Benchmark indices

Performance Metric	ICICI Prudential ELSS	Kotak Mahindra ELSS	SBI Mutual Funds ELSS	Union Mutual Fund ELSS	Bandhan ELSS Tax Saver	NIFTY 100 Index (Benchmark)
Annualized Return {R_p}	32.18%	31.79%	31.43%	28.59%	31.39%	**29.98%**
Annualized Std. Deviation (Total Risk)	27.60%	29.47%	35.85%	28.69%	26.63%	**34.00%**
Beta (Systematic Risk)	0.778	0.816	0.963	0.793	0.748	**1.000**
Sharpe Ratio (Reward per Unit of Total Risk)	0.95	0.87	0.71	0.79	**0.95**	**0.71**
Treynor Ratio (Reward per Unit of β)	33.65%	31.61%	26.41%	28.49%	**33.94%**	**23.98%**
Jensen's Alpha (Manager Skill)	**7.60%**	6.36%	2.73%	3.68%	7.49%	**0.00%**

Source: Authors calculation.

Table 5: Sector-wise Sharpe Ratio Comparison of Financial Services Mutual Funds

Mutual Fund (ELSS Category)	Annualized Return (Rp)	Annualized Standard Deviation (σp)	Sharpe Ratio
Bandhan ELSS Tax Saver	31.39%	26.63%	**0.95**
ICICI Prudential ELSS	32.18%	27.60%	**0.95**
Union Mutual Fund ELSS	28.59%	28.69%	0.79
Kotak Mahindra ELSS	31.79%	29.47%	0.87
SBI Mutual Funds ELSS	31.43%	35.85%	0.71
NIFTY 100 Index	29.98%	34.00%	0.71

Source: Authors calculation.

VII.   INTERPRETATION

Table 1: The Sharpe Ratio indicates how efficiently a fund delivers extra returns relatives to the total risk (volatility) taken by an investor. In this group, the Bandhan ELSS Tax Saver and ICICI Prudential ELSS funds tied for the highest Sharpe Ratio of 0.95, signaling that they were the most efficient performers; Bandhan achieved this through remarkably low volatility, while ICICI leveraged its high absolute returns. Conversely, the SBI Mutual Funds ELSS fund, despite strong growth, had the lowest ratio (0.71) due to its high volatility, making its returns less efficient compared to the risk endured. Ultimately, every fund in this ELSS comparison demonstrated a risk-adjusted performance that was either better than or equal to the NIFTY 100 benchmark.

Table 2: Jensen's Alpha is essentially a score card for manager skill, measuring the excess return a fund generated beyond what was expected for the amount of systematic market risk (β) it took on. In simple terms, the ICICI Prudential ELSS (7.60%) and Bandhan ELSS Tax Saver (7.49%) funds showed the most evidence of skillful management, as they were the most successful in delivering performance well above their predicted market risk level. Conversely, the SBI Mutual Funds ELSS fund, despite strong growth, had the lowest Alpha (2.73%), indicating that most of its return was simply compensation for its high market risk, with less genuine value added by the fund manager's active decisions. Crucially, since all funds had a positive Alpha, every manager successfully proved their worth by beating their theoretical benchmark.

Table 3: Jensen's Alpha acts as a report card for the fund manager's skill, quantifying how much return they generated purely through talent, over and above what their market risk level (β) required. In simple terms, the ICICI Prudential ELSS (7.60%) and Bandhan ELSS Tax Saver (7.49%) funds showed the most evidence of skillful management, as they were the most successful in delivering performance well above their predicted market risk level. Conversely, the SBI Mutual Funds ELSS fund, despite strong growth, had the lowest Alpha (2.73%), indicating that most of its return was simply compensation for its high market risk, with less genuine value added by the fund manager's active decisions. Crucially, since all funds had a positive Alpha, every manager successfully proved their worth by beating their theoretical benchmark.

Table 4: The five-year comparative analysis confirms that all five actively managed ELSS funds successfully outperformed the passive NIFTY 100 Index on both an absolute return basis and, more critically, after adjusting for risk. The Bandhan ELSS Tax Saver and ICICI Prudential ELSS funds were the undisputed champions of efficiency. These two funds not only delivered high returns but did so with excellent risk management—boasting both the highest Sharpe Ratios (reward per unit of total risk) and the highest Jensen's Alpha (evidence of superior manager skill). While the SBI Mutual Funds ELSS also grew strongly, its higher volatility made it the least efficient choice, proving that active management successfully added significant, measurable value over simply tracking the market.

Table 5 The Sharpe Ratio results show that the ELSS funds differ widely in how well they balance return and risk. Bandhan ELSS and ICICI Prudential ELSS perform the best because they combine strong returns with lower volatility. Kotak ELSS also does well but is slightly more volatile. Union ELSS gives the weakest outcome with the lowest return, while SBI ELSS, although offering good returns, has the highest volatility, making it the riskiest. Overall, most active funds outperform the NIFTY 100 on a risk-adjusted basis, and the comparison clearly shows that lower volatility plays a bigger role in improving efficiency than high returns alone.

VIII.   CONCLUSION

The five actively managed ELSS funds generally proved their value by outperforming the NIFTY 100 Index over the five-year period. The analysis consistently identifies the Bandhan ELSS Tax Saver and ICICI Prudential ELSS funds as the superior and most efficient investment options. They excelled across the board, earning the highest scores for both the Sharpe Ratio (return per unit of total risk) and Jensen's Alpha (proof of manager skill), demonstrating a remarkable

ability to deliver high returns while effectively controlling volatility. While the SBI Mutual Funds ELSS achieved the highest 5-Year CAGR, it also required investors to accept the highest level of risk, making it the least efficient choice among the group. Ultimately, the data confirms that choosing a fund that prioritizes risk-efficiency, like Bandhan or ICICI, alongside the general principle of favoring Direct plans for lower fees, offers the optimal path for long-term wealth creation.

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