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A Comparative Study of ESG and Non-ESG Mutual Funds Based on Performance and Risk Metrics

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Abstract- Environmental, Social, and Governance (ESG) investing has gained considerable traction globally, with Indian investors increasingly exploring sustainable investment alternatives. Despite this growing interest, empirical evidence comparing the performance of ESG and non-ESG mutual funds in India remains limited. This study examines the comparative performance of ESG and non-ESG mutual funds in India over the period January 2022 to March 2025. Using secondary data obtained from the Association of Mutual Funds in India (AMFI) and the National Stock Exchange (NSE), six ESG funds were paired with comparable non-ESG funds from the same Asset Management Companies (AMCs) based on Assets Under Management (AUM). Fund performance was evaluated using annualized returns, standard deviation, beta, Sharpe Ratio, Treynor Ratio, and Jensen's Alpha. The results indicate that ESG funds deliver performance comparable to traditional funds, with relatively stable risk-adjusted returns. The findings suggest that ESG mutual funds can serve as a viable and sustainable investment alternative for Indian investors without significantly compromising financial performance.

Keywords: ESG Funds, Non-ESG Funds, Mutual Funds, Risk-Adjusted Returns, Sustainable Investing

I. INTRODUCTION

The mutual fund industry plays a crucial role in mobilizing household savings and channeling them into productive investments. In India, mutual funds have evolved significantly since the establishment of the Unit Trust of India (UTI) in 1963, transitioning from a monopolistic structure to a competitive, well-regulated industry. With rising financial literacy, technological advancements, and regulatory support from the Securities and Exchange Board of India (SEBI), mutual funds have become a preferred investment avenue for retail and institutional investors.

In recent years, Environmental, Social, and Governance (ESG) investing has emerged as a transformative trend in global financial markets. ESG funds integrate sustainability and ethical considerations into investment decision-making, focusing on environmental responsibility, social impact, and sound corporate governance. In India, ESG investing is still in its nascent stage but is gaining momentum due to regulatory initiatives such as the Business Responsibility and Sustainability Reporting (BRSR) framework and increasing awareness among investors.

While ESG funds are often perceived as socially responsible, concerns persist regarding their financial performance relative to conventional non-ESG funds. Critics argue that ESG screening may limit diversification and reduce returns, whereas proponents contend that ESG integration enhances long-term stability and risk management. Given the limited empirical research in the Indian context, particularly studies controlling for fund size and AMC-specific characteristics, a systematic comparison of ESG and non-ESG mutual fund performance is warranted.

II. RESEARCH METHODOLOGY

Research Design

The study adopts a quantitative and comparative research design, focusing on evaluating and comparing the performance of ESG and non-ESG mutual funds in India using standard risk and return metrics. A quantitative approach is appropriate as the analysis relies on numerical data derived from historical fund performance. The comparative design enables a systematic examination of differences in returns, risk, and risk-adjusted performance between ESG and conventional funds operating under similar market conditions. This approach ensures objectivity and allows meaningful performance comparison across fund categories.

Data Source
The study is based exclusively on secondary data, collected from reliable and publicly available sources to ensure accuracy and transparency. The primary sources of data include:

Association of Mutual Funds in India (AMFI): Used to obtain information on mutual fund schemes, Net Asset Values (NAVs), and Assets Under Management (AUM).

National Stock Exchange (NSE): Used to obtain benchmark index data for performance comparison.

Sample Selection
Six ESG mutual funds were selected based on the availability of consistent historical data and their comparability with conventional mutual funds. Each ESG fund was paired with a corresponding non-ESG fund from the same Asset Management Company (AMC), matched on the basis of Assets Under Management (AUM). This pairing method helps control for differences arising from fund size, management style, and institutional factors, thereby ensuring fairness and reducing potential bias in performance comparison.

Table 1: List of Funds under Study

ESG Fund	AUM (₹ Cr)	Corresponding Non-ESG Fund	AUM (₹ Cr)
SBI ESG Exclusionary Strategy Fund	5830.17	SBI Magnum Medium Duration Fund	6501.87
Axis ESG Integration Strategy Fund	1272.50	Axis Dynamic Bond Fund	1278.98
ICICI Prudential ESG Exclusionary Strategy Fund	1548.66	ICICI Nifty 100 Low Volatility ETF FOF	1499.93
Quantum ESG Best in Class Strategy Fund	108.57	Quantum Multi Asset FOF	105.38
Aditya Birla Sun Life ESG Fund	652.99	ABSL Equity Savings Fund	689.47
Invesco India ESG Integration Fund	490.86	Invesco Equity Savings Fund	409.16

Period of Study
The study covers the period January 2022 to March 2025. This time frame was selected based on the availability of consistent ESG benchmark data in India and captures recent market trends and fund performance behavior.

Tools and Techniques
To evaluate and compare fund performance, the following tools and techniques were employed:

Annualized Returns to measure overall fund performance
Standard Deviation to assess total risk
Beta to measure systematic risk
Sharpe Ratio to evaluate excess returns per unit of total risk
Treynor Ratio to assess returns relative to systematic risk
Jensen’s Alpha to measure fund manager performance
Independent sample t-tests to test the statistical significance of performance differences

III. RESULTS AND DISCUSSION

Return and Risk Analysis
The analysis reveals that ESG mutual funds generate returns broadly comparable to non-ESG funds, while maintaining relatively lower volatility in certain cases.

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Funds such as ICICI Prudential ESG and Quantum ESG recorded positive Jensen's Alpha values, indicating superior stock selection and effective fund management.

Table 2: Average Performance Comparison

Metric	ESG Funds (Average)	Non-ESG Funds (Average)
Annualized Returns (%)	Moderate	Slightly Higher
Standard Deviation (%)	Lower to Moderate	Moderate
Beta	< 1	< 1
Sharpe Ratio	Positive	Mixed
Treynor Ratio	Positive	Mixed
Jensen's Alpha	Mostly Positive	Mixed

Risk-Adjusted Performance

ESG funds exhibited relatively stable Sharpe and Treynor ratios, indicating efficient risk management and consistent performance. While some non-ESG funds delivered higher absolute returns, they also experienced weaker risk-adjusted performance in certain cases. Overall, ESG funds demonstrated resilience, supporting the view that sustainability-based screening does not necessarily reduce financial efficiency.

Hypothesis Testing

The results of the independent sample *t-tests* indicate that the differences in returns and risk-adjusted performance measures between ESG and non-ESG mutual funds are not statistically significant. Hence, the null hypotheses are accepted, suggesting that ESG and non-ESG funds perform similarly in the Indian market during the study period.

IV. CONCLUSION

The study concludes that ESG mutual funds in India offer performance comparable to traditional non-ESG funds while aligning investments with sustainable and ethical objectives. The findings suggest that ESG investing does not impose a significant performance penalty and can serve as a viable long-term investment alternative. With increasing regulatory support and growing investor awareness, ESG mutual funds are expected to play an important role in India's evolving financial landscape. Future research may extend the analysis over longer time horizons and include a larger sample of ESG schemes.

V. APPENDIX

The appendix includes detailed calculations of annualized returns, standard deviation, beta, Sharpe Ratio, Treynor Ratio, Jensen's Alpha, and *t-test statistics*. Due to space constraints, these calculations are not presented in the main body but are available upon request.

VI. ACKNOWLEDGMENT

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