

COMPARATIVE PERFORMANCE OF ESG AND NON ESG MUTUAL FUNDS IN INDIA: AN INVESTMENT DRIVER FOR SUSTAINABILITY

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Abstract: - Environmental, Social, and Governance (ESG) is one of the steps in achieving sustainability. Investment in ESG is crucial and investors expect their rate of return in every investment with calculate risk. This study aims to investigate the performance and relationship between the returns of ESG-based and non-ESG-based mutual funds in Indian markets using portfolio evaluation methods and examine the causal relationship between ESG based and non-ESG-based mutual funds across various mutual fund categories. The research utilizes secondary data. ESG investments yield higher average returns and risk compared to non-ESG investments. ESG investments show a stronger alignment with the market trends. There is no causal relationship between the selected mutual fund returns. More investors will be interested in investing in ESG funds which lead to investment in sustainability. ..

Keywords: Sustainability, ESG, Investment, Return, Mutual fund. Risk

1. INTRODUCTION

Sustainability has transcended from a niche concern to a mainstream priority, significantly influencing the landscape of investment. This shift is largely driven by the increasing recognition of critical impact that environmental, social, and the governance (ESG) factors have on long-term economic stability and societal well-being. As a result, investors are now seeking opportunities that align financial returns with positive environmental and the social outcomes, leading to the rapid growth of the sustainable mutual funds thus investment in sustainability sector(Verheyden et al., 2016). Embracing ESG principles presents compelling business opportunities for Indian companies. By integrating the sustainability into their core strategies, businesses can enhance operational efficiency, reduce the costs associated with environmental and social risks, and attract the capital from investors who prioritize responsible investing (Boido et al., 2022). Moreover, companies that excel in ESG performance often enjoy a

competitive advantage in the marketplace, as consumers and stakeholders increasingly prefer to support organizations committed to ethical practices and sustainable development (Kau

cic et al., 2023).

Environment Social Governance investments in India takes a comprehensive approach, evaluating firms not just on financial performance but also on environmental impact, social responsibility, and governance procedures. ESG-compliant organizations in India are committed to implementing sustainable practices, supporting employee welfare, guaranteeing gender equality and pay equity, and maintaining strong internal controls to prevent ethical failures (Jain et al., 2019).

Sustainable mutual funds, which include ESG criteria in their investing strategy, have grown in popularity. This surge reflects larger worldwide trends toward responsible investment, in which fund managers choose assets based not just on traditional financial indicators, but also on their sustainability performance (Ouchen, 2022). These funds seek to earn competitive returns while building a more sustainable and equitable society by investing in firms that emphasize lowering carbon footprints, guaranteeing fair labor practices, and maintaining strong governance systems (Mohanty et al., 2021).

By incorporating ESG elements into their investing strategies, these institutions not only mitigate risk but also capitalize on potential for long-term wealth development. This has resulted in significant capital inflows to ESG funds, reflecting the rising popularity and acceptability of sustainable investment (van Duuren et al., 2016). Overall, the growth of ESG investing has marked a substantial shift in the financial sector. The transition from socially responsible investments to holistic consideration of environmental, social, and governance aspects represents a significant step toward sustainability (Bell & van Vuuren, 2022). As ESG investing evolves, it is expected to remain a key component of investment strategies, demonstrating a larger commitment to aligning financial objectives with ethical ideals and sustainable practices (Sudha, 2015). Investors who invest in socially responsible investment (SRI) mutual funds are more financially sophisticated and urbanized. The investors are more dynamic and diverse in their investment activities compared to those in traditional domestic mutual funds (Mendes, 2022). The objectives of the study are a) To investigate the relationship between the returns of ESG-based and non-ESG-based mutual funds. b) To examine the performance of the mutual funds classified as ESG-based and non-ESG-based investments in Indian markets using portfolio evaluation methods and c) to examine the causal relationship between ESG based and non-ESG-based mutual funds across various mutual fund categories

2. METHODS:

The study uses a descriptive research design. The approach used here is data gathering and analysis with the aim of presenting a descriptive account of select ESG and non-ESG investments. They are Aditya Birla Bank Mutual Fund, ICICI Mutual Fund, Kotak Mutual Fund, Quantum Mutual Fund and SBI Mutual Fund.

The data used for analysis in this report was obtained in raw form directly from the

Association of Mutual Funds in India (AMFI) website. The data pertains to the net asset value (NAV) of the mutual funds over a specified period and includes both ESG (Environmental, Social, and Governance) and non-ESG mutual funds. Additionally, data for the BSE Sensex for the same period was collected for comparative analysis.

The report analyses the performance of five mutual funds managed by different financial institutions. They are Aditya Birla Mutual Fund (ESG mutual fund plan Aditya Birla Sun Life

ESG and Non-ESG mutual fund plan Aditya Birla Sun Life Frontline Equity Fund Direct Plan

Growth) , ICICI Mutual Fund (ICICI Prudential ESG Exclusionary Strategy Fund Direct Plan Growth vs ICICI Prudential Blue-chip Fund Direct Plan Growth), Kotak Mutual Fund (Kotak ESG Exclusionary Strategy Fund Regular Plan Growth Option vs Kotak Emerging Equity Fund Regular Plan Growth Option), Quantum Mutual Fund (Quantum ESG Best in Class Strategy

Fund Regular Plan Growth Option vs Quantum Long-Term Equity Fund Regular Plan Growth Option) and SBI Mutual Fund (SBI ESG Exclusionary Strategy

Fund Regular Plan- Growth vs SBI Blue-chip Fund Regular Plan Growth) for a period January 2021 to July 2024)

3. RESULTES

This is divided into three parts. The first part deals with the correlation of Co-relation of ESG and Non-ESG with Market index for NAV returns, second part deals with performance of ESG and non ESG mutual with and third part deals with identification causality.

The below table show the correlation of ESG and Non ESG with market index.

Table 1 Correlation with BSE

Mutual Fund	ESG	Non ESG
Aditya Birla Mutual Fund	0.837	0.198
ICICI prudential Mutual Fund	0.878	0.138
Kotak Mutual Fund	0.930	0.351
Quantum Mutual Fund	0.895	0.145
SBI Mutual Fund	0.946	0.7778

Source: From SPSS

The correlation data shows that ESG investments tend to move closely with BSE returns. Non-

ESG investments have less consistent relationships, indicating they don't always follow the same patterns as ESG funds. This means ESG and Non-ESG funds behave differently in response to market changes.

The second part deals with performance analysis of the funds.

4. PERFORMANCE RATIOS

The performance ratios reveal how different mutual funds perform relative to risk and market conditions. Average returns, risk-free rates, standard deviations, and beta values illustrate the returns and risks associated with each fund. The Sharpe and Treynor ratios further highlight the risk-adjusted performance and market risk exposure.

Table 2 Performance ratios for ESG and Non-ESG

Mutual Fund	Investment Type	Average return	Risk free Return	Standard deviation	Beta of Portfolio	Sharpe Ratio	Treynor Ration
Aditya Birla Mutual Fund	ESG	0.060	0.056	0.821	0.949	0.545	0.472
	Non ESG	0.024	0.056	0.088	0.244	-36.916	-13.313
ICICI Prudential Mutual Fund	ESG	0.078	0.056	0.766	1.069	2.885	2.067
	Non ESG	0.026	0.056	0.088	0.219	-34.205	-13.709
	ESG	0.099	0.056	0.761	0.906	5.611	4.711

Kotak Mutual Fund	Non ESG	0.032	0.056	0.087	0.329	-27.577	-7.309
Quantum Mutual fund	ESG	0.073	0.056	0.826	1.010	2.037	1.666
	Non ESG	0.023	0.056	0.114	0.212	-28.684	-15.440
SBI Mutual Fund	ESG	0.077	0.056	0.899	1.023	2.348	2.064
	Non ESG	0.045	0.056	0.231	-0.179	-4.605	5.940

From the above performance ratios, we can say that Aditya Birla Mutual Fund's ESG investments exhibit superior performance with a Sharpe Ratio of 0.545 and a Treynor Ratio of 0.472, indicating better returns per unit of risk compared to Non-ESG investments, which have very negative ratios. This comparison reveals that ESG investments not only provide higher returns but also manage risk more effectively. The significant difference in performance highlights the advantage of choosing ESG investments over Non-ESG ones in terms of both profitability and risk management.

In case of ICICI Prudential Mutual Fund, ESG investments show impressive results with a Sharpe Ratio of 2.885 and a Treynor Ratio of 2.067, significantly outperforming Non-ESG investments, which have very negative ratios. These high ratios for ESG investments suggest that they offer much better returns relative to the risk taken, making them a more prudent investment choice. The clear superiority of these ratios underscores the strong performance of ESG investments in both return and risk-adjusted terms.

For Kotak Mutual Fund, ESG investments stand out with a Sharpe Ratio of 5.611 and a Treynor Ratio of 4.711, far exceeding the highly negative ratios of Non-ESG investments. This indicates that ESG investments deliver much better returns and handle risk more effectively. The substantial difference in these ratios reinforces the notion that ESG investments offer superior performance, making them a more attractive option compared to Non-ESG investments. In the Quantum Mutual Fund, ESG investments present a Sharpe Ratio of 2.037 and a Treynor Ratio of 1.666, which are significantly better than the very negative ratios of Non-ESG investments. This suggests that ESG investments provide higher returns for the risk taken, highlighting their strong performance in risk-adjusted terms. The favourable ratios for ESG investments underscore their effectiveness in delivering strong returns relative to the risks involved.

For SBI Mutual Fund, ESG investments are characterized by a Sharpe Ratio of 2.348 and a

Treynor Ratio of 2.064, which are notably superior to the negative ratios observed for Non-ESG investments. This indicates that ESG investments offer better returns relative to the risk, suggesting they are more advantageous in terms of risk-adjusted performance. The improved ratios emphasize the benefits of ESG investments, making them a better option for investors seeking both higher returns and effective risk management.

The Aditya Birla Mutual Fund's performance shows a clear advantage for ESG investments. From July 2021 to July 2024, the ESG NAV consistently climbed, indicating higher returns and better growth potential. In contrast, the Non-ESG NAV grew at a much slower pace. This suggests that choosing ESG investments with Aditya Birla Mutual Fund has been a smarter move for better financial outcomes. When we look at the ICICI Prudential Mutual Fund, it's obvious that ESG investments have done a lot better. Over the past few years, from July 2021 to July 2024, ESG options have steadily increased in value, whereas non-ESG investments have barely moved. Choosing ESG has been a wiser decision for better returns here. The Kotak Mutual Fund's performance clearly shows that ESG investments have been the better choice. From January 2023 to July 2024, the ESG NAV has risen sharply, delivering much higher returns compared to the relatively stagnant Non-ESG NAV. This indicates that opting for ESG investments with Kotak Mutual Fund has been more profitable and rewarding. The performance analysis for Quantum Mutual Funds indicates that ESG investments have outperformed Non-ESG investments over the period from July 2021 to July 2024. The ESG NAV shows a consistent upward trend, particularly accelerating from January 2023 onwards.

In comparison, the Non-ESG NAV has shown steady growth but at a much slower pace. The BSE Close also indicates a general market uptrend, but the ESG NAV's higher rise suggests that ESG investments with Quantum Mutual Funds have been more profitable and rewarding during this period.

In the performance analysis for SBI Mutual Fund, the ESG NAV has consistently stayed above the Non-ESG NAV throughout the period from July 2021 to July 2024. Both ESG and Non- ESG NAVs have shown an upward trend, but the ESG NAV exhibits higher volatility and greater growth, especially noticeable from January 2023 onwards. The BSE Close tracks the overall market trend, which also shows a rising pattern. This analysis suggests that ESG investments with SBI Mutual Fund have provided better returns compared to Non-ESG investments over the observed period. The third part is Granger causality test

After analysing the correlation to understand the relationship's nature and strength, we conducted Granger causality tests to determine the direction of the relationship between ESG and Non-ESG mutual funds. The results are as follows:

Table 3 Granger Causality test output for ESG and Non-ESG NAV returns

Mutual fund	Investment Type	P-Value	Null Hypothesis	Causality	Representation
Aditya Birla mutual fund	ESG	0.0072	Rejected	One-way Causal relationship	ESG → Non-ESG
	Non ESG	0.7088	Accepted		
ICICI prudential mutual fund	ESG	0.0803	Accepted	No Causal relationship	ESG ≠ non-ESG
	Non ESG	0.7597	Accepted		
Kotak Mahindra Mutual fund	ESG	0.0187	Rejected	One-way Causal relationship	ESG → Non-ESG
	Non ESG	0.3943	Accepted		
Quantum mutual fund	ESG	0.4614	Accepted	No Causal relationship	ESG ≠ Non-ESG
	Non ESG	0.5464	Accepted		
SBI mutual fund	ESG	0.2325	Accepted	One-way Causal relationship	ESG ← Non-ESG
	Non ESG	0.0196	Rejected		

Examining the results, it is evident that for Aditya Birla Mutual Fund, the p-value of 0.0072 for ESG returns is below the 0.05 threshold, demonstrating a significant predictive relationship where ESG returns impact Non-ESG returns. In contrast, the p-value of 0.7088 for Non-ESG returns is much higher, indicating that Non-ESG returns do not significantly affect ESG returns. This reveals a one-way influence from ESG to Non-ESG returns.

In the case of ICICI Prudential Mutual Fund, the p-value of 0.0803 for ESG returns surpasses the 0.05 level, showing that ESG returns do not significantly predict Non-ESG returns. Additionally, the p-value of 0.7597 for Non-ESG returns indicates that these returns do not have a significant impact on ESG returns. These results suggest there is no significant causal relationship between ESG and Non-ESG returns for this fund.

For Kotak Mutual Fund, the p-value of 0.0187 for ESG returns is below 0.05, which implies that ESG returns have a significant effect on Non-ESG returns. However, the p-value of 0.3943 for Non-ESG returns suggests that Non-ESG returns do not predict ESG returns. This establishes a one-way causality where ESG returns influence Non-ESG returns, but not vice versa.

In the Quantum Mutual Fund analysis, both p-values are above the 0.05 level—0.4614 for ESG returns and 0.5464 for Non-ESG returns. This indicates that there is no significant predictive relationship between ESG and Non-ESG returns. Both returns appear to operate independently without significant influence on each other.

For SBI Mutual Fund, the p-value of 0.2325 for ESG returns is higher than 0.05, suggesting ESG returns do not predict Non-ESG returns. Conversely, the p-value of 0.0196 for Non-ESG returns is below 0.05, indicating that

Non-ESG returns significantly predict ESG returns. This shows a one-way causal relationship where Non-ESG returns influence ESG returns, while ESG returns do not affect Non-ESG returns.

5. DISCUSSION

ESG investments tend to provide higher average returns compared to Non-ESG investments across various mutual funds. This indicates that incorporating Environmental, Social, and Governance (ESG) criteria into investment decisions can lead to greater profitability. Investors who prioritize sustainability and ethical considerations may find that their portfolios perform better than those focused solely on traditional financial metrics (Gupta & Chaudhary, 2023).

ESG investments exhibit greater variability in returns, meaning they can achieve substantial gains but also carry more risk compared to Non-ESG investments. This variability suggests that while ESG funds have the potential for higher returns, they also experience more significant fluctuations. Investors should be prepared for periods of both high growth and potential downturns, necessitating a thorough risk management strategy (Cheng et al., 2023).

ESG returns generally align more closely with market trends in most mutual funds, while

Non-ESG returns do not track market movements as consistently. This alignment implies that ESG investments are more sensitive to overall market conditions, which could be advantageous for investors seeking to capitalize on market trends. It also suggests that ESG funds might be more integrated with broader economic activities and investor sentiment (Ashwin Kumar et al., 2016). In multiple funds, the historical performance of ESG investments can be a useful indicator for predicting the future performance of Non-ESG investments. This suggests a potential influence of ESG returns on Non-ESG returns, indicating that the positive performance trends observed in ESG investments could spill over to the broader market. Investors might use ESG performance as a leading indicator for market trends and make informed decisions for both ESG and Non-ESG investments (Bennani et al., 2018).

ESG investments demonstrate superior performance in terms of both returns and risk management, as evidenced by higher Sharpe Ratios compared to Non-ESG investments. The Sharpe Ratio measures the risk-adjusted return, and higher values indicate that ESG investments offer better returns for each unit of risk taken. This superior performance metric highlights the efficiency and effectiveness of ESG funds in managing risk while achieving higher returns (Sehgal et al., 2022).

ESG investments also show superior performance in terms of risk-adjusted returns, as evidenced by higher Treynor Ratios compared to Non-ESG investments. The Treynor Ratio measures returns in relation to systematic risk (market risk). Higher Treynor Ratios for ESG investments suggest that these funds are not only managing overall risk effectively but are also delivering higher returns relative to their exposure to market risk (Stempler, 2021).

The higher variability in ESG returns indicates a need for careful risk assessment and management when considering these investments. Investors must be aware that while ESG funds have the potential for high returns, they also come with higher volatility. Diversification, regular portfolio reviews, and a clear understanding of ESG criteria are crucial for mitigating risks associated with these investments (Biswas et al., 2023).

The alignment of ESG returns with market trends suggests that ESG investments are more sensitive to overall market conditions. This sensitivity could be advantageous for investors looking to capitalize on market movements. However, it also means that ESG funds may be more affected by market downturns. Investors should monitor economic indicators and market trends closely to make timely decisions about their ESG investments (Aldieri et al., 2023).

Combining ESG and Non-ESG investments can create a balanced portfolio that mitigates risks and enhances returns. This approach spreads investments across different asset classes and sectors, reducing overall portfolio volatility. By diversifying, investors can benefit from the stability of traditional investments while leveraging the growth potential of ESG funds (Habermann, 2020).

Regular risk assessments are crucial for maintaining an investment strategy that matches an investor's risk tolerance (Shobande & Ogbeifun, 2022). Continuous monitoring helps investors understand the impact of market changes on their portfolios. By adjusting their investments accordingly, they can manage risks and maintain a stable portfolio (Caporale et al., 2022).

Keeping an eye on risk profiles allows investors to make timely adjustments in response to market conditions. This proactive approach helps protect investments from unexpected downturns and ensures long-term financial

stability (Antoncic et al., 2020). Regularly rebalancing the portfolio helps maintain the desired risk level. Integrating ESG factors into investment strategies aligns portfolios with market trends and regulatory requirements (Zheng et al., 2022). As sustainability becomes more important, ESG integration ensures that investments are socially responsible and future-proof (Hong et al., 2022). This approach not only enhances sustainability but also positions investors to benefit from regulatory incentives. Aligning investment strategies with current market trends is essential for maintaining relevance and effectiveness (Broadstock et al., 2021). Regular analysis of economic and environmental shifts helps optimize portfolios in response to changing conditions. By staying informed, investors can seize opportunities and maintain a competitive edge, ensuring optimal investment outcomes (McBride et al., 2022).

6. CONCLUSION

The study indicates that ESG (Environmental, Social, and Governance) investments consistently deliver superior performance compared to Non-ESG investments across various mutual funds, with higher average returns and more effective risk management. Performance ratios for ESG investments, such as those in Aditya Birla, ICICI Prudential, Kotak, Quantum, and SBI, show notable improvements, including elevated Sharpe and Treynor Ratios, compared to Non-ESG investments. For example, ESG investments in Aditya Birla Mutual Fund have a Sharpe Ratio of 0.545 and a Treynor Ratio of 0.472, significantly higher than the negative ratios of Non-ESG investments. This pattern underscores that ESG investments not only achieve better returns relative to their risk but also demonstrate enhanced financial outcomes. Additionally, ESG investments exhibit a stronger alignment with market trends, as evidenced by their positive correlations with BSE returns, suggesting they are better placed to capitalize on favourable market conditions. Non-ESG investments, on the other hand, they show weaker correlations and less consistency with market fluctuations (Zhou et al., 2019). ESG investments not only outperform in terms of returns and risk management, but also align with contemporary investor preferences. According to the study results, ESG standards play an important role in boosting financial success and controlling investment risks. This increased acknowledgment of ESG elements in the financial sector emphasizes their importance in producing strong investment results and responding effectively to market dynamics (De Lucia et al., 2020). Sustainability can be achieved by different components ESG is one of them. Investment in ESG should be encouraged.

Disclosure statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability statement

Data available on request from the authors

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