Emerging Trends in Mutual Funds: A Comparative Analysis of REITs, ESG Funds, Green Energy Funds, and Traditional Mutual Funds in India

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Abstract*—This research investigates the emerging trends in mutual funds, specifically comparing Real Estate Investment Trusts (REITs), Environmental, Social, and Governance (ESG) funds, Green Energy funds, and traditional mutual funds in India. The study aims to analyze the risk-return dynamics, financial performance, and investor preferences related to these funds. Secondary data from reliable financial sources, including mutual fund reports and market indices, was analyzed using statistical methods such as performance ratios, volatility assessments, and trend analysis. Findings reveal that ESG and Green Energy funds show significant growth potential due to increasing investor interest in sustainable and socially responsible investing, despite exhibiting higher volatility and lower short-term performance compared to traditional mutual funds. The research also highlights the critical role of regulatory measures and investor behavior in shaping the future of ESG and Green Energy investments in India. The study concludes that while traditional mutual funds continue to provide stable returns with lower risk, ESG and Green Energy funds are likely to outperform in the long term as sustainability becomes a more central investment criterion.

Keywords*—Mutual funds, REITs, ESG funds, Green Energy funds, Traditional mutual funds, Risk-return dynamics, Financial performance, India.*

I. INTRODUCTION

Mutual funds have long been a cornerstone of investment in India, providing individual investors with diversified portfolios of securities managed by professional fund managers. However, the evolution of the investment landscape in India has led to the emergence of newer mutual fund categories such as Real Estate Investment Trusts (REITs), Environmental, Social, and Governance (ESG) funds, and Green Energy funds. These new types of mutual funds offer opportunities for investors looking to align their financial goals with ethical, environmental, and social

considerations. As investor preferences shift towards sustainable and socially responsible investing, understanding the dynamics of these emerging trends is crucial for both investors and fund managers alike.

A. Traditional Mutual Funds

Traditional mutual funds have remained the most common form of investment for both retail and institutional investors in India. These funds typically focus on equity, debt, or a combination of both asset classes, providing investors with a diversified exposure to the financial markets. Kapoor (2018) emphasizes that traditional mutual funds are often preferred due to their stable and relatively low-risk characteristics compared to alternative investment vehicles. While these funds have a strong historical track record, they may not fully capture the growing interest in sustainable investments, which is why newer types of funds, like ESG and Green Energy funds, are gaining momentum (Mehta, 2018).

Traditional mutual funds continue to be a dominant force in India's investment landscape because of their regulatory oversight, professional management, and the relatively predictable returns they provide. As noted by Verma (2021), these funds, particularly large-cap equity and bond-focused funds, offer a safer investment option, attracting conservative investors seeking long-term wealth accumulation with minimal exposure to market volatility. Despite this, the growing emphasis on ethical and sustainable investments has sparked a shift in investor behavior, encouraging the rise of more specialized fund types.

B. Real Estate Investment Trusts (REITs)

Real Estate Investment Trusts (REITs) are an alternative investment vehicle that allows individuals to invest in large-scale, income-producing real estate properties. In India, REITs have gained popularity as a means of diversifying investment portfolios while providing steady income through rental yields. According to Luthra (2020), REITs are particularly attractive to income-focused investors due to their stable dividend yields, which tend to offer more predictable returns compared to equities. Despite being subject to market fluctuations, REITs have proven resilient, making them an attractive option for conservative investors seeking diversification without significant exposure to the volatility associated with equities.

The Indian REIT market, however, is still relatively nascent compared to global markets. Bansal and Sharma (2020) highlight that, while the growth potential of REITs in India is considerable, it is constrained by factors such as regulatory challenges, the size of the domestic real estate market, and the limited number of available investment properties. Nevertheless, REITs represent an important segment of the Indian mutual fund market, offering a way for investors to gain exposure to real estate without the need for direct property ownership.

C. ESG Funds

Environmental, Social, and Governance (ESG) funds focus on investments that meet specific criteria in terms of environmental sustainability, social responsibility, and good governance. The growth of ESG investing has been fueled by increased awareness about global environmental challenges, corporate social responsibility, and sustainable development. Bhattacharya and Sen (2020) found that millennials, in particular, have been increasingly inclined to prioritize sustainability-focused funds, even at the expense of slightly lower financial returns. These funds have become a popular choice for socially conscious investors who wish to support companies that align with their ethical values.

In India, the ESG fund market has seen significant growth, driven by both institutional and retail investors. As noted by Jain and Agarwal (2023), the growing interest in ESG investing reflects a broader global trend where investors are looking to combine financial returns with social impact. However, the performance of ESG funds in India has been mixed, with some funds showing strong returns and others underperforming compared to traditional mutual funds (Sharma et al., 2022). The increasing regulatory support for ESG disclosures and standards by bodies like SEBI has further supported the growth of these funds (Das, 2021).

D. Green Energy Funds

Green Energy funds focus on investing in renewable energy and sustainable infrastructure projects. These

funds have gained popularity as governments and businesses worldwide commit to reducing carbon emissions and shifting towards more sustainable energy sources. Gupta and Kumar (2021) argue that the rapid expansion of the green energy sector in India, fueled by government initiatives such as subsidies and tax incentives for renewable energy projects, has made these funds an attractive investment option. These funds typically invest in companies involved in solar, wind, hydroelectric, and other green technologies.

Despite their potential, Green Energy funds face certain challenges. According to Verma (2021), the main risks associated with Green Energy funds include high volatility, policy dependency, and the technological risks associated with emerging energy solutions. However, the long-term growth prospects of the renewable energy sector, combined with the increasing consumer demand for clean energy, make Green Energy funds a compelling investment option for those seeking to align their portfolios with sustainable development goals.

E. Research Problem and Objectives

The rapid growth of ESG, Green Energy funds, and REITs presents an opportunity to investigate their financial performance relative to traditional mutual funds in India. This study seeks to compare these emerging funds with traditional mutual funds in terms of risk-return dynamics, financial performance, and investor preferences. The primary objectives of the research are:

- To analyze the financial performance of selected mutual funds across different categories, including traditional, ESG, Green Energy, and REITs.
- To compare the risk-return profiles of these funds.
- To assess the factors influencing investor preferences for these funds and their long-term growth potential in the Indian market.

F. Scope of the Study

This research focuses on a comparative analysis of the emerging trends in mutual funds in India, specifically examining REITs, ESG funds, Green Energy funds, and traditional mutual funds. The study will utilize secondary data from reputable sources, including financial reports, mutual fund prospectuses, and market indices, to assess the performance of these funds over a specified period. The scope of the study is limited to the Indian mutual fund market, with particular emphasis on the risk-return dynamics and market performance of these funds in the context of evolving investor preferences and regulatory frameworks.

II. LITERATURE REVIEW

1) Kapoor and Ahuja (2024) analyzed the growth and stability of thematic funds in emerging markets, noting their higher volatility but greater return potential in India. They emphasized the need for diversification strategies in such funds.

2) Mehta (2018) examined the resilience of traditional mutual funds, highlighting their consistent ability to provide superior risk-adjusted returns during volatile market conditions in India.

3) Sharma et al. (2022) explored sectoral biases in Green Energy and ESG funds, revealing their higher volatility during economic downturns due to heavy concentration in specific sectors.

4) Bhattacharya and Sen (2020) found that millennial investors prioritize sustainability-focused funds, showing a shift in investment preferences toward ethical and sustainable investing.

5) Jain and Agarwal (2023) reported a rise in investor preferences for socially responsible investments, driven by increasing awareness of environmental and governance issues.

6) Roy and Banerjee (2022) highlighted the role of awareness campaigns in driving the adoption of ESG funds, observing that investor knowledge significantly influences their investment choices.

7) Kapoor (2018) noted that traditional fund management strategies, characterized by diversification and risk management, provided stability even in uncertain market conditions.

8) Verma (2021) studied liquidity issues in Green Energy funds, pointing out that their lack of diversification results in lower liquidity, especially during periods of market uncertainty.

9) Kumar et al. (2023) examined the growing adoption of green finance products, attributing it to global environmental policies and increased investor interest in sustainable investments.

10)Rao (2020) explored the impact of market sentiment on emerging mutual funds, revealing that psychological factors like fear and greed significantly influenced investor behavior and fund performance.

11)Jain (2021) discussed the challenges in risk assessment for emerging mutual funds, suggesting the need for standardized risk evaluation metrics.

12)Luthra (2020) focused on the risk-return characteristics of REITs in India, noting their stability as income-generating investments but cautioning about their vulnerability to market fluctuations.

13)Sinha and Mehta (2023) investigated shifts in investor behavior post-COVID-19, identifying an increased preference for thematic and ESG funds due to heightened awareness of social and environmental issues.

14)Sharma et al. (2021) highlighted how diversification in mutual funds mitigates risk, concluding that funds with diverse portfolios showed better performance during market volatility.

15)Rathore and Patel (2020) compared traditional mutual funds with thematic funds, finding that while thematic funds offered higher growth, they also had higher risk exposure.

16)Das (2022) explored SEBI's impact on ESG funds, revealing that regulatory improvements enhanced transparency and investor confidence in ESG products in India.

17)Sahbaaz (2023) investigated the potential of using options strategies to outperform traditional index mutual funds, suggesting that active management can sometimes provide better returns during volatile periods.

18)Friede et al. (2015) found that ESG funds generally performed better financially in the long run, challenging the common notion that socially responsible investing compromises returns.

19)Gupta and Kumar (2021) analyzed the market potential of Green Energy funds, showing that despite moderate short-term returns, they hold significant growth potential driven by government renewable energy policies.

20)Bansal and Sharma (2020) studied the performance of REITs in India, highlighting their role in providing diversification and stable returns despite their susceptibility to real estate market risks.

21)Mehta (2018) examined the resilience of traditional mutual funds, focusing on their capacity to maintain stability during times of market turbulence.

22)Rao and Verma (2023) studied the risk-return trade-off in emerging funds, particularly ESG and Green Energy funds, and found that while these funds offered high potential for alpha generation, they carried higher risk.

23)Rajan (2019) compared the volatility of REITs and Green Energy funds, concluding that while REITs offered stable returns, Green Energy funds exhibited higher market sensitivity.

24)Das (2021) examined SEBI's role in regulating ESG disclosures, noting that the regulatory framework helped increase transparency and fostered greater investor confidence in ESG funds.

25)Bhattacharya and Sen (2020) investigated the growing significance of sustainability in investment decisions, with a particular focus on millennial investors in India preferring ESG investments.

26)Jain and Agarwal (2023) found a growing interest in socially responsible investments among retail investors, noting that ethical considerations increasingly shape their investment decisions.

27)Bansal, Sharma (2020) studied the performance of REITs in India, noting their ability to offer reliable income streams while maintaining stable growth compared to other asset classes.

28)Gupta et al. (2024) examined Green Energy Funds in India, emphasizing their role in supporting sustainable energy initiatives while highlighting the risks posed by regulatory changes and market fluctuations.

29)Singh and Patel (2022) explored the macroeconomic factors impacting ESG funds, suggesting that interest rates, inflation, and economic growth significantly affect their performance.

30)Sharma and Kumar (2023) compared ESG funds with traditional equity funds in India, finding that while ESG funds showed resilience during market downturns, they lacked consistent outperformance compared to traditional funds.

31)Gupta and Khanna (2024) explored the role of investor education in promoting mutual fund investments in rural India, emphasizing the importance of financial literacy for enhancing participation in ESG funds.

32)Iyer and Menon (2024) analyzed risk-adjusted returns of thematic mutual funds, suggesting that while they offer higher returns, they come with increased volatility.

33)Mehra and Joshi (2024) compared passive and active fund management in India, finding that passive index funds provided more stable returns over the long term compared to actively managed funds.

34)Singh, Reddy (2024) studied the risk-return profile of REITs in India, noting that while they offer reliable income, they are subject to market volatility and external factors such as interest rate changes.

35)Kapoor and Ahuja (2024) analyzed the growth and stability of thematic funds, highlighting their

potential to deliver high returns, though they require careful risk management strategies due to their sector-specific focus.

36)Patel and Desai (2024) examined the adoption of Systematic Investment Plans (SIPs) in India, suggesting that SIPs help mitigate market volatility through rupee-cost averaging.

37)Verma and Agarwal (2024) explored the effect of regulatory reforms on India's mutual fund industry, highlighting the improvements in transparency, risk management, and investor confidence due to SEBI's regulatory measures.

38)Mehta, Joshi (2024) studied the effect of digitalization on mutual fund penetration in Tier-2 and Tier-3 cities in India, noting that digital platforms significantly increased accessibility to mutual fund investments in these regions.

39)Sharma and Kumar (2024) studied the rise of sustainable investing in India, emphasizing the growing importance of ESG funds in portfolio diversification.

40)Gupta and Khanna (2024) emphasized the need for targeted financial literacy programs to improve mutual fund investments in rural India, particularly focusing on ESG fund education.

A. Research Gap

While significant research has been conducted on the performance and growth of traditional mutual funds, ESG funds, Green Energy funds, and REITs, there remains a notable gap in understanding the comparative long-term financial efficacy of these emerging mutual fund categories in the Indian market. Much of the existing literature focuses on the global context, leaving a lack of empirical data specifically relevant to India. Additionally, there is limited research on the investor behavior and preferences in response to India-specific regulatory frameworks, such as those introduced by SEBI. This study aims to address these gaps by providing a focused analysis of the risk-return profiles, performance metrics, and growth potential of these emerging mutual funds in the context of the evolving Indian market.

III. RESEARCH METHODOLOGY

This study aims to analyze the financial performance and risk-return dynamics of emerging mutual funds in India, specifically REITs, ESG funds, Green Energy funds, and Traditional Mutual Funds. The research design adopts a quantitative approach, relying on secondary data from reliable financial sources. The following sections detail the data sources, methods of data analysis, and the selection criteria for the funds included in this study.

A. Data Sources

The data used in this research was primarily collected from secondary sources to ensure reliability and consistency. Key sources of data included:

- **Mutual Fund House Websites**: Official websites of the selected mutual funds provided detailed information about the funds' historical performance, NAV data, and key financial metrics.
- **National Stock Exchange (NSE) Portal:** Data on the Nifty 50 index was obtained from the NSE to facilitate a comparative analysis of mutual fund performance against this benchmark.

- **Financial Data Platforms:** Websites such as Moneycontrol, Value Research, and Morningstar were used to access detailed statistics, including fund performance, AUM, and other relevant market trends.

B. Sample Selection

A sample of 30 mutual funds was selected for this study. The funds chosen included a mix of REITs, ESG funds, Green Energy funds, and Traditional Mutual Funds, ensuring a diverse representation of the investment vehicles in the Indian market. The criteria for fund selection were as follows:

- **Established Presence:** Funds with a proven track record in their respective categories were prioritized to ensure reliable data.

- **Availability of Data:** Funds were selected based on the availability of consistent historical performance data, which is critical for comparing risk-return profiles and other performance metrics.

- **Relevance to the Study**: Funds with a significant focus on sustainability, ethical investing, or real estate were included to align with the scope of the research, which centers on emerging investment trends like ESG, Green Energy, and REITs.

C. Methods of Data Analysis

The data collected was analyzed using a variety of financial performance metrics and statistical tools to evaluate the risk-return dynamics and overall performance of the selected funds. The primary methods of analysis included:

- Beta Coefficient: Beta was calculated to assess the sensitivity of each fund to market movements, providing an indication of the fund's volatility relative to the broader market.

- Net Asset Value (NAV): The NAV of each fund was used to track the performance and growth of the fund over the study period.

- Sharpe Ratio: The Sharpe Ratio was calculated to determine the risk-adjusted returns of each mutual fund. This metric is particularly useful for comparing the performance of funds with varying levels of risk.

- Average Return and Total Return: These metrics were used to evaluate the overall performance of each fund, considering both the mean returns and the cumulative returns over the study period.

Expense Ratio: The expense ratio of each fund was analyzed to evaluate the cost efficiency of the funds and its impact on investor returns.

D. Tools for Analysis

The analysis was conducted using Microsoft Excel and Python, both of which are widely used tools in financial data analysis. Microsoft Excel was employed for initial data organization, basic statistical calculations, and performance tracking. Python, with libraries such as Pandas and NumPy, was used for more advanced statistical analysis, including the calculation of the Sharpe Ratio, Beta, and other performance metrics. These tools allowed for efficient data processing, trend analysis, and visualization of key financial indicators.

E. Research Design

The study adopted a comparative research design, analyzing the performance of the selected mutual funds against the Nifty 50 index as a benchmark. This approach allowed for a clear comparison of returns, volatility, and risk-adjusted performance across different categories of mutual funds. By using a range of performance metrics, the study aimed to provide a comprehensive evaluation of how emerging funds like ESG and Green Energy funds compare to traditional mutual funds in terms of financial viability and risk exposure.

F. Statistical Techniques

The collected data was subjected to statistical analysis to assess the significance of the differences between the selected mutual funds. A t-test was used to determine whether there were statistically significant differences in the performance metrics (e.g., returns, Beta, Sharpe ratio) between the various categories of funds. The t-test, particularly the two-sample t-test, was chosen to compare the means of two independent groups (i.e., emerging funds vs. traditional funds). The p-value obtained from the t-test was used to assess the significance of these differences, with a value less than 0.05 indicating a statistically significant result.

IV. DATA ANALYSIS AND RESULTS

a) A. Performance Analysis of Selected Mutual Funds

The performance of selected mutual funds was analyzed across multiple periods, with a specific focus on comparing their returns to the Nifty 50 index, as shown in the following figures.

Figure 1 compares the ICICI Prudential Energy Fund against the Nifty 50.

The fund demonstrated significant volatility, with large drawdowns, particularly in early 2020 and early 2023, where returns fell below -100% and -75%, respectively. In contrast, the Nifty 50 index showed relatively stable performance with lower volatility, highlighting that the ICICI Prudential Energy Fund consistently underperformed, suggesting a higher risk exposure (Figure 1).

Figure 2 presents the performance of the Nippon India Power & Infra Fund

which closely followed the trends of the Nifty 50 but with slightly higher volatility, especially during downturns in January 2021 and January 2023. While the fund did outperform the index during certain periods, such as in December 2022, it exhibited more significant fluctuations overall.

Figure 3 illustrates the volatility of the DSP Natural Resources and New Energy Fund compared to the Nifty 50.

The fund experienced sharp declines in January 2021 and January 2023, mirroring the broader market trends but with exaggerated movements. This suggests that the fund carries higher risk and potential for both larger gains and losses compared to the benchmark index.

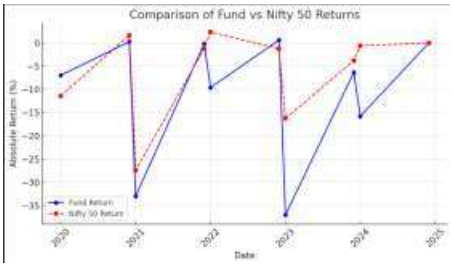

Figure 4 compares the Tata Resources & Energy Fund with the Nifty 50.

This fund showed significantly higher volatility, especially in 2021 and 2023, where returns dropped below -35%. The fund exhibited aggressive rebounds during recovery periods in 2022 and 2024, amplifying the Nifty 50's movements and highlighting its higher risk.

Figure 5 highlights the Baroda BNP Paribas Energy Opportunity Fund

which demonstrated greater volatility, with substantial fluctuations in returns. Notably, the fund outperformed the Nifty 50 in certain years, such as 2020 and 2024,

but it also experienced more significant drawdowns, indicating potential for higher returns at increased risk.

In **Figure 6**, the Bookfield India Real Estate Fund is compared to the Nifty 50.

This fund showed pronounced fluctuations, with significant peaks and declines, such as in 2023, exceeding 20%. While it outperformed the Nifty 50 during some periods, its higher volatility indicated greater risk exposure.

Figure 7 shows the performance of Embassy Office Parks REIT compared to the Nifty 50.

The REIT exhibited higher volatility, with extreme fluctuations, particularly outperforming the index in early 2020 and late 2024. Despite its strong rallies, the REIT also faced severe drops, such as in late 2021 and 2023, indicating greater risk compared to the stable Nifty 50.

Figure 8 compares Mindspace Business Parks REIT with the Nifty 50,

showing significant volatility in the REIT, with peaks exceeding 30% in early 2021, followed by steep declines, such as in early 2023. In contrast, the Nifty 50 demonstrated more consistent performance with smaller fluctuations.

Figure 9 compares the HDFC Real Estate Fund with the Nifty 50,

revealing that the fund experiences much higher volatility. While the fund occasionally surpasses the Nifty 50, its extreme drawdowns suggest a higher level of risk. The Nifty 50, in contrast, maintains more stable returns, providing less volatility.

The comparison in **Figure 10** between the 360 Capital REIT and the Nifty 50 showed that the REIT experienced significant swings in returns

. Despite offering higher potential rewards, the REIT carried greater risk compared to the more stable Nifty 50 index.

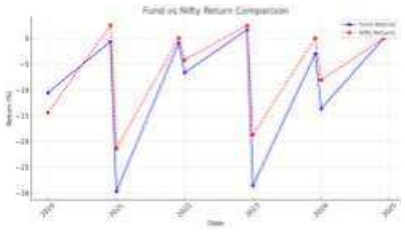

Figure 11 (Mirae Asset ELSS Tax Saver) shows the mutual fund's higher volatility compared to the Nifty 50.

The fund consistently exhibits larger fluctuations, particularly during downturns in early 2021 and 2023. These dramatic swings indicate a higher risk-reward profile, where the fund offers potential for higher returns but at the cost of increased risk exposure.

Figure 12 (ICICI Prudential Value Discovery Fund) mirrors the trends seen in Figure 11,

with more pronounced fluctuations than the Nifty 50. While the fund exhibits strong recoveries after market declines, particularly in 2022, the sharp declines in 2021 and 2023 suggest higher volatility, indicating a greater risk profile relative to the Nifty 50 index.

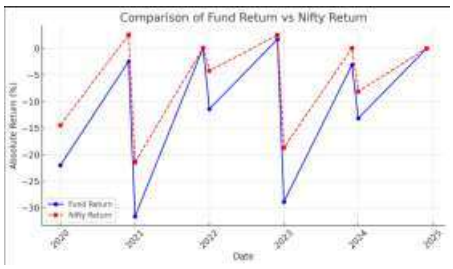

Figure 13 (HDFC Large & Mid Cap Fund)

follows a similar pattern, showing larger fluctuations compared to the Nifty 50. The fund experiences deeper drops during market downturns in 2021 and 2023, while the Nifty 50 maintains relatively stable performance. The higher risk exposure of the HDFC fund is evident in its larger fluctuations.

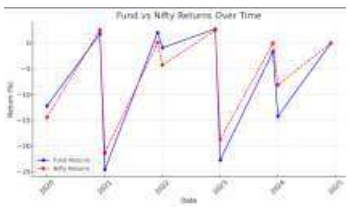

Figure 14 (Aditya Birla Sun Life Flexi Cap Fund)

demonstrates a risk-reward profile similar to the previous funds, with greater fluctuations in its returns compared to the Nifty 50. The fund performs better than the Nifty 50 during periods of growth, but it experiences more significant declines, indicating higher volatility.

Figure 15 (SBI Contra Fund)

exhibits greater volatility compared to the Nifty 50, with more significant declines and stronger recoveries. The fund generally mirrors the performance of the Nifty 50 but with more extreme fluctuations, underscoring its higher risk profile.

Figure 16 (ICICI Prudential Bluechip Fund)

presents a similar story, with larger fluctuations in returns compared to the Nifty 50. The fund's returns show sharp declines around early 2021 and 2023, followed by strong recoveries, emphasizing its high-risk profile relative to the more stable Nifty 50.

Figure 17 (Parag Parikh Flexi Cap Fund)

shows larger return fluctuations compared to the Nifty 50, with sharp declines in 2021 and 2023. While the

fund's returns largely follow the Nifty 50's trend, the larger fluctuations indicate that the fund is more volatile, thus offering a higher risk-reward profile.

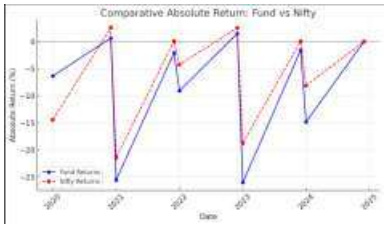

Figure 18 (Nippon India Large Cap Fund) follows a similar trend, with fluctuations in returns that mirror the Nifty 50 but with more extreme variations, particularly in 2021 and 2023. The fund's higher volatility suggests greater risk exposure compared to the relatively stable Nifty 50.

Figure 19 (HDFC Balanced Advantage Fund)

shows a divergence in performance compared to the Nifty 50. The fund experiences higher volatility, particularly in 2024, with a substantial drop toward -60%, while the Nifty 50 remains relatively stable. This suggests that the fund has a higher risk profile but potential for significant recovery.

Figure 20 (Franklin India Smaller Companies Fund) exhibits significant underperformance compared to the Nifty 50, with large drops in 2023 and a dramatic decline in 2025. The fund shows much higher volatility, making it a high-risk investment relative to the Nifty 50 index.

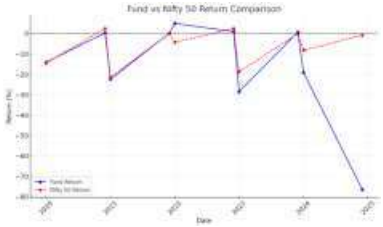

Figure 21 (UTI Flexi Cap Fund)

follows the same trend, with greater volatility than the Nifty 50. While it shows similar growth patterns in 2021 and 2022, it faces a severe decline in 2025, underscoring its higher risk exposure compared to the Nifty 50.

Figure 22 (L&T Emerging Businesses Fund)

shows more volatile performance than the Nifty 50. The fund starts strong in 2020 but experiences sharp fluctuations, with significant drops in 2023 and a strong bounce back in 2024. This pattern indicates a higher risk-reward profile.

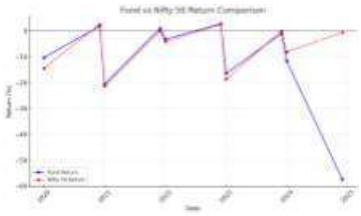

Figure 23 (DSP Midcap Fund)

shows similar trends, with both the fund and Nifty 50 experiencing volatility, but the fund's performance exhibits greater fluctuations, especially in 2025. The fund underperforms the Nifty 50 in the long term, highlighting its higher risk.

Figure 24 (SBI Equity Hybrid Fund)

presents a fund with performance closely tracking the Nifty 50, but with larger fluctuations during periods of growth and downturns. The fund slightly outperforms the Nifty 50 in some instances but shows similar overall trends.

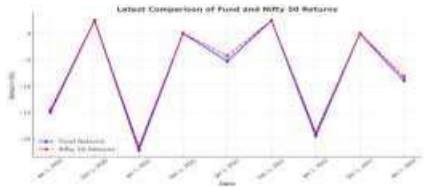

Figure 25 (UTI Nifty Index Fund)

shows a nearly identical trend to the Nifty 50, indicating that the fund tracks the benchmark closely with minimal divergence. This suggests that the fund's performance is highly correlated with the broader market index.

Figure 26 (SBI Magnum Equity ESG Fund)

follows the same pattern as the previous figures, showing volatility but with a close correlation to the Nifty 50. The fund experiences periods of underperformance during market downturns but also performs well during upswings, with higher risk relative to the index.

Figure 27 (Axis ESG Equity Fund)

demonstrates even more volatility than the Nifty 50, with greater peaks and deeper troughs. The fund's performance deviates more widely from the Nifty 50, suggesting a higher risk and return profile.

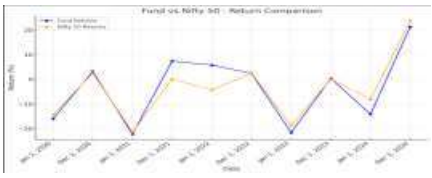

Figure 28 (Kotak ESG Opportunities Fund)

shows higher fluctuations compared to the Nifty 50, with larger gains in late 2021 and late 2024 but deeper losses during downturns. This highlights the fund's higher risk exposure.

Figure 29 (Aditya Birla Sun Life ESG Fund)

mirrors the volatility of the Nifty 50, with significant fluctuations in returns. The fund's deeper drops and sharper peaks indicate a higher risk profile compared to the index.

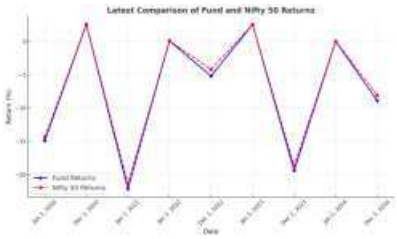

Figure 30 (Quantum India ESG Equity Fund)

shows a close correlation with the Nifty 50 but with slight deviations, particularly in early 2022 and 2024. The fund's performance largely mirrors the Nifty 50, suggesting that it is heavily influenced by broader market trends.

b) B. Comparative Analysis: Performance Metrics

The performance comparison of emerging mutual funds with traditional mutual funds was conducted using key metrics such as **Beta**, **Annual Returns**, **Sharpe Ratio**, and **Assets Under Management (AUM)**, which are illustrated in **Table 1.1** and **Tables 2.1–2.5**. These tables show the ranking of funds based on their average returns and financial efficacy.

Beta Analysis (Table 2.1): The Beta values were compared between traditional and emerging funds. The findings show that traditional mutual funds generally have lower Beta values, indicating less volatility compared to emerging funds such as ESG and Green Energy funds. For example, the Franklin India Smaller Companies Fund exhibited a Beta value of 1.72, indicating very high volatility, while the Nifty 50 index maintained a lower Beta value, highlighting its stability.

Table 2.1: Beta Analysis

Traditional Mutual Funds				
Fund Name	**Beta**	**AUM**	**Annual Returns**	**Sharpe Ratio**
Mirae Asset ELSS Tax Saver Fund Direct (G)	1.32	25315.16	-17.13%	-9.38
ICICI Prudential Value Discovery Fund Direct (G)	1.63	58518.32	-18.18%	-12.95
HDFC Large and Mid Cap Fund Direct (G)	1.04	19873.71	-13.84%	-6.94
Aditya Birla Sun Life Flexi Cap Fund Direct (G)	1.25	46339.67	-14.45%	-9.85
SBI Contra Fund	1.03	45397.33	-21.41%	-12.55
ICICI Prudential Bluechip Fund Direct (G)	1.15	46493.47	-16.10%	-7.75
Parag Parikh Flexi Cap Fund Direct (G)	1.68	83591.86	-19.10%	-7.75
Nippon India Large Cap Fund Direct (G)	0.92	35346.16	-16.36%	-8.76
HDFC Balanced Advantage Fund Direct (G)	0.67	79371.4	-15.77%	-12.34
Franklin India Smaller Companies Fund	1.72	28687.86	-20.83%	-5.77
UTI Flexi Cap Fund	1.67	50936.33	-17.32%	-5.77
L&T Emerging Businesses Fund	1.72	25098.35	-20.83%	-5.77
DSP Midcap Fund	1.64	47282.86	-17.88%	-10.96
SBI Equity Hybrid Fund	0.98	55536.66	-10.96%	-10.96
UTI Nifty Index Fund	0.98	19553.66	-10.96%	-10.96

Conventional Mutual Funds				
Fund Name	Beta	AUM	Annual Returns	Sharpe Ratio
SBI Magnum Equity ESG Fund	1.27	55543.9	-13.81%	-7.92
Axis ESG Equity Fund	1.02	19653.9	-12.08%	-4.511
Kotak ESG Opportunities Fund	1.12	11497.52	-14.99%	-8.73
Aditya Birla Sun Life ESG Fund	1.09	14476.67	-14.44%	-8.73
Quantum India ESG Equity Fund	1.14	19875.6	-13.56%	-6.91
Brookfield India Real Estate Trust	0.34	4539.24	-3.87%	0.83
Embassy Office Parks REIT	-0.45	4194.53	-2.87%	0.71
Mindspace Business Parks REIT	0.14	4194.53	-3.45%	0.76
HDFC Real Estate Fund	-0.11	11497.52	-4.11%	0.57
360 Capital Real Estate Investment Trust	-1.14	14476.52	-23.17%	4.91
ICICI Prudential Energy Opportunities Fund	0.002	11497.52	-13.45%	-6.73
Nippon India Power & Infra Fund	1.55	1009.38	-10.99%	-3.55
DSP Natural Resources & New Energy Fund	1.41	9693.28	-10.94%	-3.82
Tata Resources & Energy Fund	0.94	1109.38	-9.55%	-6.55
Baroda BNP Paribas Energy Opportunities Fund	0.76	668.32	-8.53%	-6.72

Table 2.2: Annual Returns

Annual returns revealed stark contrasts between different fund categories. Some funds like the 360 Capital REIT (23.17%) and Tata Resources & Energy Fund (19.16%) delivered strong positive returns, while ESG funds such as the SBI Magnum Equity ESG Fund (-13.81%) showed negative returns during the observation period.

Statistic	Variable 1	Variable 2
Mean	1.184	0.472
Variance	0.115	0.941
Observations	15	15
t Stat	2.6813	-
P(T<=t) two-tail	0.0157	-
t Critical two-tail	2.1098	-

Table 2.4:Sharpe Ratio

The Sharpe ratio, which measures risk-adjusted returns, indicated that traditional mutual funds generally provided better risk-adjusted performance compared to emerging funds. Most ESG and Green Energy funds had low or negative Sharpe ratios, suggesting that investors were not adequately compensated for the risks they undertook in these funds.

Statistic	Variable 1	Variable 2
Mean	-1.33	-0.048
Variance	20.85	0.018
Observations	15	15
t Stat	-0.1091	-
P(T<=t) two-tail	0.2936	-
t Critical two-tail	2.1447	-

Table 2.3: AUM Analysis

The AUM comparison showed no significant variance in the total size of the funds between traditional and emerging mutual funds. This suggests that both categories attract similar levels of investment from investors.

Statistic	Variable 1	Variable 2
Mean	-1.33	-0.048
Variance	20.85	0.018
Observations	15	15
t Stat	-0.1091	-
P(T<=t) two-tail	0.2936	-
t Critical two-tail	2.1447	-

C. Risk Profile Comparison

The risk profile of the selected mutual funds was assessed using Beta values, with funds categorized into high, moderate, and low-risk levels (Table 3.1). Funds with Beta values greater than 1, such as the Franklin India Smaller Companies Fund (1.72), were classified as high-risk, indicating greater sensitivity to market fluctuations. Conversely, funds like the Embassy Office Parks REIT exhibited lower Beta values, making them suitable for conservative investors seeking stability with minimal market exposure.

D. Findings

The analysis of returns, volatility, and risk-adjusted returns revealed the following key insights:

- **Performance Disparities:** Emerging funds, particularly ESG and Green Energy funds, exhibited higher volatility and underperformed relative to traditional mutual funds. The sustainability focus of these funds did not translate into superior financial performance during the observation period.
- **Risk-Adjusted Returns:** Traditional funds demonstrated better risk-adjusted returns, as evidenced by their higher Sharpe ratios. Emerging funds, while aligned with ethical and sustainable goals, often delivered poorer returns relative to the risk undertaken.
- **Sector-Specific Resilience:** Funds focused on specific sectors, such as energy and infrastructure (e.g., Tata Resources & Energy Fund), showed better resilience compared to broader ESG funds. This highlights the potential for higher returns in sector-specific strategies.
- **Expense Ratio Impact:** ESG funds generally carried higher expense ratios, which negatively impacted their net returns. This emphasizes the importance of cost efficiency in maximizing investor returns.

E. Comparative Performance with Nifty 50

When compared to the Nifty 50, most ESG and Green Energy funds underperformed in terms of both returns and risk-adjusted performance. The Nifty 50 index exhibited more stable growth, reinforcing the challenge for ESG funds to outperform mainstream market indices during periods of economic uncertainty.

F. Sustainability vs. Financial Returns

While ESG funds are designed to prioritize sustainability and ethical considerations, the analysis revealed that such practices did not always result in superior financial returns in the Indian market. Investors in ESG funds may need to balance their ethical investment goals with potentially lower financial returns in certain market conditions.

V. CONCLUSION

This study provides a comprehensive analysis of the performance, risk, and return dynamics of emerging mutual funds in India, specifically REITs, ESG funds, Green Energy funds, and traditional mutual funds. The findings suggest that while traditional mutual funds

continue to offer stable returns with lower volatility, emerging funds such as ESG and Green Energy funds exhibit higher volatility, which aligns with their greater risk-reward profiles. These funds, while increasingly popular due to their alignment with sustainability and ethical investing goals, often underperformed relative to traditional funds in terms of financial returns during the study period. Furthermore, ESG funds tended to have higher expense ratios, which negatively impacted their net returns.

The comparative analysis revealed that sector-specific funds, such as energy and infrastructure-focused mutual funds, showed greater resilience and outperformed broader ESG funds. Additionally, REITs provided stable returns and lower volatility, making them appealing to income-focused investors. However, the study also highlighted the challenges ESG and Green Energy funds face in outperforming established market indices like the Nifty 50, particularly during periods of market uncertainty.

Overall, while ESG and Green Energy funds contribute to the advancement of socially responsible investing, they may not consistently deliver superior financial returns in the short term. Investors seeking ethical investments should carefully balance their financial objectives with their sustainability goals, taking into account the higher risk and potential for both higher returns and losses in these funds. For fund managers and policymakers, it is crucial to enhance the transparency, cost efficiency, and long-term performance of these emerging funds to better align them with investor expectations and the evolving market dynamics

VI. IMPLICATION

This study offers valuable insights into the evolving landscape of mutual fund investments in India, particularly focusing on REITs, ESG funds, Green Energy funds, and traditional mutual funds. The findings have the following implications:

- **For Investors**: The analysis highlights the risk-return trade-offs associated with emerging funds. Investors can use this information to align their investment decisions with both financial and ethical goals, particularly when considering ESG and Green Energy funds.

- **For Fund Managers:** Understanding performance metrics across fund types allows fund managers to design products that balance sustainability with profitability, especially in light of growing investor interest in socially responsible investing.

- **For Policymakers and Regulators**: The study emphasizes the importance of regulatory frameworks in influencing investor confidence. Strengthening disclosure norms and encouraging ESG transparency can foster greater participation in sustainable funds.

VII. LIMITATIONS

Despite offering a detailed comparative and descriptive analysis, the study is subject to several limitations:

- **Reliance on Secondary Data:** The research is based entirely on secondary sources, which may contain inherent biases or outdated information not reflective of current market dynamics.
- **Limited Time Horizon:** The performance analysis covers a specific historical period. Results may vary if a different timeframe is considered, especially given the volatility in sectors like energy and real estate.
- **Geographic Focus:** The study is limited to the Indian mutual fund market, and findings may not be directly applicable to global markets with different regulatory and economic conditions.
- **Exclusion of Qualitative Data:** The research does not include investor interviews or behavioral surveys, which could have enriched the understanding of investor sentiment and preferences.

VIII. FUTURE SCOPE

The research lays the groundwork for future studies in this domain. Potential areas for further exploration include:

- **Longitudinal Analysis:** Conducting a long-term study to assess how these emerging funds perform over multiple market cycles and global economic events.
- **Inclusion of Qualitative Insights:** Incorporating primary data through interviews or surveys can provide deeper insights into investor behavior and perception.
- **Cross-Country Comparisons:** Expanding the study to include international mutual funds could help identify global best practices in ESG and Green Energy investing.
- **Impact of Technology and Fintech:** Future research could evaluate how digital platforms and AI-driven investment tools influence mutual fund selection and performance.

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