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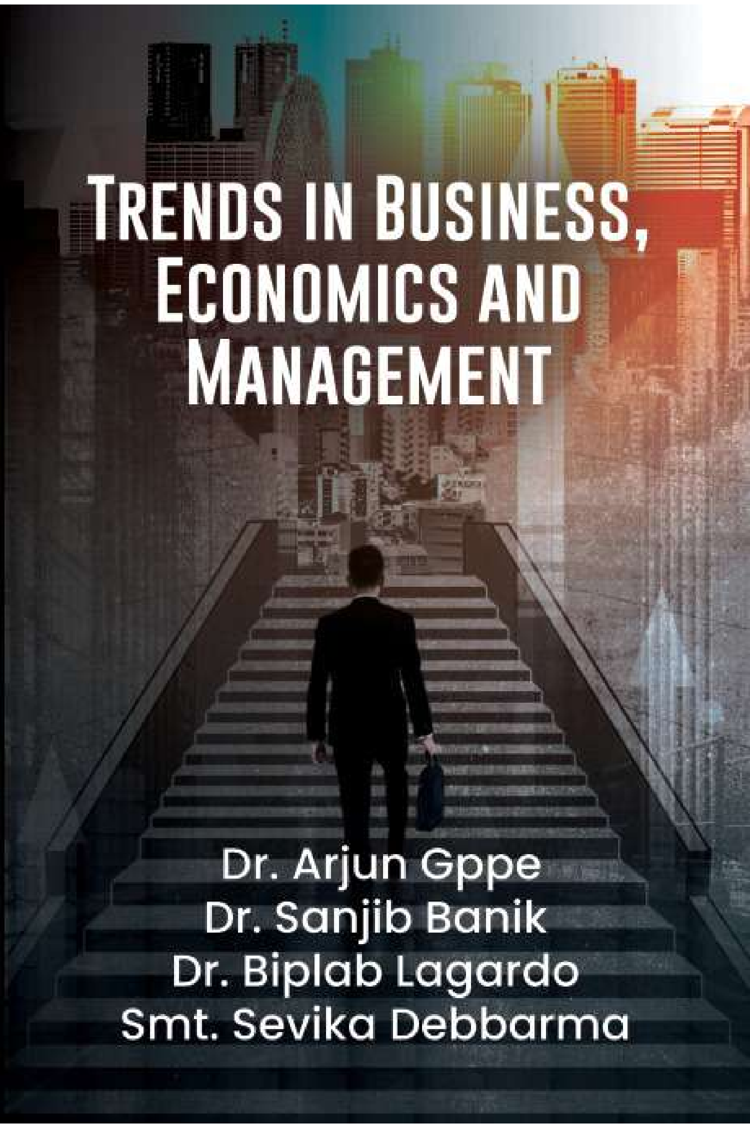
TRENDS IN BUSINESS, ECONOMICS AND MANAGEMENT

Dr. Arjun Gppe, Dr. Sanjib Banik, Dr. Biplab Lagardo, Smt. Sevika Debbarma



TRENDS IN BUSINESS, ECONOMICS AND MANAGEMENT

Dr. Arjun Gppe
Dr. Sanjib Banik
Dr. Biplab Lagardo
Smt. Sevika Debbarma

Trends in Business, Economics and Management

Edited

By

Dr. Arjun Gope
Dr. Sanjib Banik
Dr. Biplab Lagardo
Ms. Sevika Debbarma

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DEDICATED TO

Late Pramod Ranjan Bhatta Chaudhuri,

founder of

Ramthakur College

About the Book:

This edited book, Trends in Business, Economics and Management is a modest attempt to explore the business issues, as well as to provide potential remedies towards enhancing potential business environment. The book includes twenty-four research papers written by eminent academicians, researchers and scholars. The chapters cover the areas of accounting, taxation, finance, economics, management, leadership and so on. The scholarly scope of the edited book has been broadened by articles containing significant insights from the intelligentsia of many authors from across the country. The book is unique in its sort due to its state-of-the-art modus methodology, which covers many concerns connected to today's Business and Management.

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Dr. Arjun Gope, Ph. D., M. Com (Gold medalist), MBA (Finance), works as Associate Professor at Ramthakur College, Tripura. He has been teaching different subjects of Commerce and Management for more than last nineteen years. He has authored eight books till date among which three are edited volumes. He has several research paper publications in various journals and edited books. He has delivered lectures at different state and national level programmes being a resource person. He has acted as Oorganizing Secretary of different seminars and workshops. Dr. Gope has been awarded prestigious best paper awards at both National and International conferences. Dr.Sanjib Banik is an Associate Professor in Economics at Ramthakur College, Tripura. He has done his PhD from Department of Humanities & Social Sciences, National Institute of Technology (NIT) Silchar, Assam. He has published papers in Scopus, UGC Care List and Peer Reviewed International journals. He has an experience of doing Minor Research Project under UGC Scheme. Presently, he is acting as PhD Co-Supervisor at the Department of Humanities & Social Sciences, NIT Silchar. He has reviewed many papers in Peer Reviewed and Scopus

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FORWARD

The edited volume titled “Trends in Business, Economics and Management” comprises twenty three research papers from bright scholars, academicians, and researchers. While going through the papers, I have observed all are of good quality and eruditely and effectively written. The chapters in the volume are on diverse subjects, focusing on the present issues. inter alia of which are the tourism and hospitality industry, restaurant business, recruitment and selection process in higher educational institutions, microfinance, women participation and empowerment, self-help groups, leadership in private banks, vermi-composting biotechnology, Indian digital economy vis-a-vis Atmanirbhar Bharat, online marketing, tax savings retirement scheme, mutual funds, covid 19 and its effects, entrepreneurship in biotechnology, cloud accounting, etc. In one volume, such types of scholarly papers/chapters seldom can be found, but undoubtedly, all the chapters are important to readers which they can use for reference purposes. I believe the volume will be useful to students, academicians, policymakers, researchers, and others. Most highlighting point about the chapters is that the latest data have been used in all the chapters.

I congratulate Dr. Arjun Gope, Dr. Sanjib Banik, Dr. Biplab Lagardo & Ms. Sevika Debbarma for taking the initiative to edit the chapters for this volume. This is an arduous job in the academic field, as I have published a few edited books earlier. By reading the chapters, readers will be benefitted as knowledge is a qualitative asset that no one can ever take away from the other person. I am concluding by quoting Swami Vivekananda "Books are infinite in number, and time is short. The secret of knowledge is to take what is essential”.

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PREFACE

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A global pandemic that began at the beginning of the twenty-first century rocked the world's economy, trade, and commerce to its core. For the vast bulk of the current corporate concerns, it was a significant setback and recession. Many of them perished in this unfriendly business environment, while others battled with loss-making ventures. In this difficult time, business strategists and consultants have begun to look for new ways to adapt, and they have eventually developed new management techniques and strategies.

To lessen the negative impact of the pandemic on business, the Indian government proposed a number of trade and business initiatives, particularly for start-ups, and developed new plan of "ease of doing business" strategies. As a result, a paradigm change in the management and business processes has taken place.

In light of this context, the Departments of Commerce and Economics at Ramthakur College in Agartala, India, organised two-day international seminar on Recent Trends in Business, Economics and Management on July 7 and 8, 2023, with the goal of bringing together social scientists, academicians, strategists, and research scholars and giving them a forum to exchange their deliberate study on the theme of the conference and come to reasonable conclusions.

This book, titled "**Trends in Business, Economics and Management**" is the result of the editors' efforts to compile the important information and strategies shared during the conference so that it can serve as a "ready-to-hand" reference for business strategists, consultants, researchers, and other interested stakeholders.

This edited volume includes twenty-four carefully chosen papers written by thirty nine authors from across the nation on varied topics varying from entrepreneurship and start-ups, marketing and human resource management, accounting, finance, and taxation, banking, and to business and economics. Each of these papers is scanned through peer review and any necessary revisions are made before giving it the final shape available through print media.

In the first chapter, **Bhattacharjee** has investigated the relationship between the Indian stock market and the Market Mood Index. The study's conclusions demonstrate the new sentiment index's long-term relationship with the Indian stock market. The volatility of the Market Mood Index is found to be a good short-term predictor of the volatility of the Indian stock market. These findings have suggested that portfolio diversity is necessary both in the long run and the short term.

Jena and Das in their empirical study examine the factors influencing the profitability of Indian public and private sector bank, collecting panel data from the RBI annual financial reports during the period of 2012-13 to 2021-22. Regression model based mediation analysis shows that the impact of all predictors of the banking operations, mainly retail banking, have the significant effect on the operating profit of private sector banks in India. In public sector bank; except for Corporate Banking Operations, all other predictors significantly and positively impact operating profit

In the third chapter, Mr. Das has explained that the goal of the study is to look into the benefits of adopting information technology in the tourism and hospitality industries. In this study, several elements, criteria, and strategies for using virtual reality to promote tourism are examined. This article also looked at the strategies used by the hospitality and tourism industries to boost customer satisfaction. Finally, the author draws the conclusion from this study that virtual reality technology is one of the best tools in the travel and hospitality sectors.

The study carried out by **Sabharwal & Saxena** reveals the role of influencers in social media marketing and how they affect customer behaviour. The survey also discovers that relevance, trustworthiness, and authenticity play a significant role in how consumers view influencers. The study finds that influencers can be a useful tool for social media marketing, and that in order to have a major impact on consumer behaviour, marketers need to carefully choose influencers based on their relevance, authenticity, and trustworthiness. The results of this case study imply that restaurant owners should think about collaborating with social media influencers to raise brand recognition, draw in new clients, and keep their current clientele.

This study done by **Laldingliani** & **Lalropuii** focuses on the variations in candidates' preferences for inexperienced teachers over experienced ones, the variables that candidates must consider when deciding which institutions to apply to, and the degree of satisfaction with the Mizorami government's current hiring and selection practises. According to the study, most of the respondents from general UG colleges have stated their satisfaction with the current system of hiring.

According to the study of **Sarkar**, SHG microfinance is a method for reducing poverty that will bring about social transformation and enable women to become self-sufficient. The relationship between the number of women who borrowed money from the organisation, their inclination to work on farms, and their propensity to repay the loan has been examined using both primary and secondary data. According to the study, participants are interested in taking out modest loans because they are very serious about rebuilding their credit in order to obtain larger loans more readily and also to avoid the stress of mounting debt.

The main findings of the study, conducted by **Dashora & Maru**, recommend that digitalization was articulated by private bank managers. Almost most of the leaders have recommended that digitalization brings novel opportunities to their firm with the support of new techniques. Private bank got an effective superiority in the current digitalized world. The results depict that all the participants agreed to the fact that their firm, workers, and leadership are impacted by digitalization and innovative digital technology.

Mr. Roy has studied about the concept of circular economy in his study. He explains that vermiculture is one of the important links to circular economy. The author has examined the suitability of vermiculture as an effective technology for solid waste management which can be used efficiently to improve soil health and crop productivity, to treat wastewater and to produce green energy.Vermicomposting can transform waste into bio-fertilizer, which can be

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easily stored, handled, used in agriculture for increasing the productivity of crops and provides a vital step toward sustainable organic farming. Vermicompost reduces the pollution of soil by restricting lesser use of chemical fertilizers and thus saves economy.

In their study, **Ghosh and Paul** have focused on the various aspects of digital transformations which occurred in Indian economy during the last five years, i.e., 2017-18 to 2022-23. Indian IT exports have generated 51% of total revenue and it is projected to expand towards 600 billion dollar industry in near future. The volume of digital transactions has increased by more than 500%. They have also pointed out that the Union Government is trying to achieve inclusive growth through Make-In-India Approach, Atma Nirbhar Bharat using digital technologies to uplift socio-economic welfare. It is concluded that the implementation of digital transformation will be the backbone of India's robust future economic development.

According to the study of **Chakraborty & Roy,** the widespread adoption of social media, electronic payments, and government programmes support digital change. Businesses of all sizes, including startups and small firms, can profit from online marketing prospects in India due to the rising affordability of online marketing channels and the cost-effectiveness that they offer. By using the potential of online marketing, Indian firms can expand sustainably in the digital age, connect with customers more deeply, and prosper in a dynamic and competitive business climate.

An attempt has been made, by the study of **Mr. Nath,** to compare the two tax regimes existing in India viz. Old tax regime and new tax regime, in order to find out which is better option for tax payers. It has been concluded that tax payers must opt for old tax regime considering the option for investments which is very much necessary to hedge against inflation.

The paper of **Kharjana** has emphasized on the opportunities of employment generation, strengthening and developing agricultural sector at East Khasi Hills Districts of Meghalaya. The study finds that the people of Meghalaya believe in traditional agricultural system.

The findings of **Ms. Pawaskar & Dhume** suggest that insufficient financial literacy among investors may be the reason for significantly lower profits from ESG funds. Investors that focus on short-term gains disregard sustainability over the long term. However, businesses that put an emphasis on ESG and CSR build reputable brands that provide respectable returns and dividends.

Yasro & Mukhopadhyay have selected ten units of Bell Metal cluster in the district of Murshidabad, West Bengal to evaluate the impact of Cluster Development Programme on marketing, production and financing of the units.

The author, Dr. **Bandyopadhyay,** in his paper has stressed on the problems that migrant workers had faced due to sudden outbreak of Covid19 pandemic when they had to leave their work place and go back to their native place. The paper suggests for alternative entrepreneurial activities that can be taken up in such situation in various sector like the technical area, rural resources, agricultural activities, tourism and other service sector. The paper has also emphasised of the role of government and associated agencies as vital in making entrepreneurship sustainable.

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The paper of **Mr. Roy** is focused on emerging entrepreneurial opportunities in the field of biotechnology, bioinformatics, computational biology pharmaceutical science of medicine and agriculture. But taking entrepreneurship in these fields is not easy as it faces challenges like high start up cost, Government regulation, difficulties in data administration and analysis, multidisciplinary knowledge, intellectual property , period of patent, issues with pricing etc. The paper has also discussed on various facilities that a entrepreneur in this field can avail from government, financial institution and from academic and industrial cooperation.

Paul & Das have found that cloud accounting is a recent development in accounting. This accounting system is more convenient than a conventional system of accounting. The accounting system also provides easy accessibility, accurate result, and save time and cost effective for the business.

Devrajappa & Acharya have performed a review of business responsibility and sustainability reports of top 10 companies in Indian FMCG Sector to explore how companies incorporate CE Concept in their agenda. It has been observed that most reported activities are oriented towards sourcing strategies and circular product design but circular supply chain and product take back system which are critical in transition to Circular Economy are missing in the corporate approaches.

In the study **Sukritha & Vimala** have discussed on the emergence and information on RuPay introduced by RBI in the year 2012. In order to overcome the problems faced by Indian banks and customers making transaction through visa and master card, RBI in consultation with Indian Bank Association (IBA) has introduced RuPay which is India's first ever global card payment. Through each transaction, the card holders contribute to maximising country's earnings by preventing flow of money to other countries and also in making India 'cash less' economy.

The case study of **Sarath and Ojha** discloses different aspects of Public Distribution System made through Electronic Point of Sale in ration shops in Vellanoor village located at in Calicut district of Kerela. It states that introduction of ePOS in the district have been found to be highly satisfactory in bringing transparency where one could access the real time data sales, inventory and financial transactions made thus reducing the possibility of mistakes and frauds which were evident during post introduction of ePOS. This system also helps in making payment in different mode like debit/credit card, UPI etc. The study suggests that better and scaled-up implementation of ePOS would contribute in making Digital India.

The study of **Saha** has examined the relationship between Indian Railways freight flow and international trade since 1980s. The study finds that foreign trade of India has increased continuously from 1990 to 2020 and it has further grown from 2003-04. It is also found that other commodities are mainly traded while agricultural trade is relatively of small share.

The study of **Mr. Debnath** is based on the areas of Agartala Municipality of Tripura, India. The author has tried to describe the relationship between Women Entrepreneurship and Women Empowerment and the need of women participation in entrepreneurial activities in the current era. Through entrepreneurship women are becoming economically more empowered.

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The study done by **Shira & Hajong** suggests that entrepreneurship is crucial for reducing youth unemployment and encouraging originality and innovation. The results of youth unemployment also highlight how important it is to address this issue in order to decrease its negative effects on young people and society as a whole. The study also identifies the connection between entrepreneurship education and students' entrepreneurial spirit and capacity for beginning new enterprises.

The study of **Shanker & Shankar** reported that since the indirect taxation rate has decreased, the GST has had a good overall impact on the cement business. The study's key finding is that GST has significantly and positively impacted financial performance. Therefore, it can be said that GST has brought about a good transformation and positively benefited the cement industry's financial performance.

Last but not least, we anticipate that this book will meet the demands of academics, social scientists, business consultants, strategists, etc. who are looking for information on Modern Business and Management Issues. However, any suggestions that can upgrade the standard of such an undertaking in the future are appreciated.

Date:

Arjun Gope
Sanjib Banik
Biplab Lagardo
Sevika Debbarma

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FORWARD

The edited volume titled “Trends in Business, Economics and Management” comprises 24 research papers from bright scholars, academicians, and researchers. While going through the papers, I have observed all are of good quality and eruditely and effectively written. The chapters in the volume are on diverse subjects, focusing on the present issues. inter alia of which are the tourism and hospitality industry, restaurant business, recruitment and selection process in higher educational institutions, microfinance, women participation and empowerment, self-help groups, leadership in private banks, vermicomposting biotechnology, Indian digital economy vis-a-vis Atmanirbhar Bharat, online marketing, tax savings retirement scheme, mutual funds, covid 19 and its effects, entrepreneurship in biotechnology, cloud accounting, etc. In one volume, such types of scholarly papers/chapters seldom can be found, but undoubtedly, all the chapters are important to readers which they can use for reference purposes. I believe the volume will be useful to students, academicians, policymakers, researchers, and others. Most highlighting points about the chapters are that the latest data have been used in all the chapters.

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ACKNOWLEDGEMENT

It has been a truly remarkable journey for us from the time we accepted the responsibility of editing the volume **"Trends in Business, Economics and Management"** until it is ultimately put to print. Without the support, encouragement, love, and blessings from various people in our community, this would not have been possible.

We sincerely thank the authors of twenty-four papers who contributed to this edited edition. It goes without saying that without their assistance, support, and cooperation in general, this book would not have been published.

We express our deepest gratitude and respect to Prof. (Dr.) Shankar Chatterjee Former Prof. & Head (CPME), NIRD & PR (Govt. of India), Hyderabad and Dr. Chitra Pal, Principal-in-charge of Ramthakur College, Agartala, Tripura.

We want to sincerely thank our family members for all of the ways they contributed to the completion of this book.

We must express our sincere appreciation to our coworkers for their helpful collaboration and moral support in getting this assignment done.

Above all, we owe it to Almighty God for giving us the knowledge, health, and fortitude to develop and complete this volume.

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13

EVALUATING ESG MUTUAL FUND FINANCIAL PERFORMANCE IN INDIA: A COMPARATIVE ANALYSIS WITH CONVENTIONAL EQUITY FUNDS

Pinky Pawaskar

Pournima Dhume

Abstract

Environmental, Social, and Governance (ESG) mutual funds have garnered substantial attention and popularity in recent times. These funds transcend the confines of conventional financial metrics by incorporating environmental, social, and governance factors into their investment decision-making process. ESG criteria serve as a lens through which investors can gauge a company's commitment to sustainability, ethical standards, and long-term resilience. This study endeavours to delve into the financial performance of ESG mutual funds in the Indian context, offering a comprehensive comparative analysis with traditional equity funds. The assessment employs sophisticated risk-adjusted metrics—namely, the Sharpe ratio, Treynor ratio, and Jenson's measure. The study's findings unveil a distinctive aspect: ESG is an emerging paradigm, and currently, these funds exhibit a performance that falls short of both the chosen benchmark and traditional equity mutual funds. By scrutinizing the financial performance of ESG mutual funds and pitting it against the backdrop of traditional equity funds, the study casts light on the latent potential and viability of ESG investing within India's mutual fund landscape. This research offers invaluable insights to investors and brokers alike, empowering them with a nuanced understanding of the flourishing ESG concept and equipping them to make judicious and well-informed decisions.

Keywords*:* ESG, Mutual Fund, Financial Performance, Traditional Equity Funds, Risk Adjusted Measures

Introduction

Businesses that uphold ethical standards are widely recognized for their potential to not only generate greater profits over time but also establish stronger brand recognition and foster unwavering consumer loyalty. An exemplary avenue for such ethical investment strategies lies in ESG (Environmental, Social, and Governance) mutual funds, which not only align businesses with principled practices but also offer the prospect of achieving superior financial returns. The surge in popularity of ESG funds in India is emblematic of a growing investor consciousness regarding sustainable principles. ESG, originating in the 1960s, underscores investments in companies actively engaged in environmental (E) and social (S) domains, coupled with robust corporate governance (G). This framework quantifies an organization's commitment to sustainability, bolstering ethical corporate conduct and supporting enterprises that contribute positively to society. Pledging to long-term ESG compliance enables businesses to cement their status as sustainable entities. Often dubbed sustainable investing, ESG investing aligns financial objectives with environmental, social, and governance considerations, nurturing enduring sustainability for businesses and society at large. The environmental (E) facet urges businesses to adopt eco-friendly practices, safeguarding the environment and its resources for future generations. It encompasses evaluating a company's climate impact and responsible use of resources like fresh water. The social (S) dimension gauges an organization's social impact, including stakeholder relationships, fair worker compensation, and community betterment. It also holds companies accountable for their supply chain actions globally and encourages sound workplace policies and corporate social

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responsibility (CSR) initiatives. Governance (G) forms a company's bedrock, highlighting transparency, fair stakeholder treatment, and adept leadership. ESG funds and traditional equity funds follow distinct investment strategies. ESG funds prioritize long-term capital appreciation by investing in eco-conscious companies, while traditional equity funds aim for diversified returns. Both fund types cater to long-term, higher-risk investors. Combining conventional investment with ESG elements can enhance performance and sustainable practices.

This study assesses the financial performance of ESG mutual funds against market benchmarks and compares ESG fund returns with traditional equity funds. Prior studies yielded mixed conclusions, attributing ESG funds' performance to market conditions. Investors must discern these distinctions to make informed decisions aligned with their goals.

Literature Review

The review of existing literature on ESG mutual fund performance highlighted research gaps. Engaging in ESG activities leads to enhanced financial returns and a positive reputation (Khan, 2022). Investor sentiment doesn't affect ESG Index performance (Dhasmana et al., 2023). Profitable social performance benefits businesses (Fooladi and Hebb, 2022). They explored whether ESG Funds surpass benchmarks, finding a strong correlation between financial and social performance. Perceived lower returns from ESG funds prompted studies (Dreyer et al., 2022), attributing decline to inflation, ESG demand, and market volatility.

Zhang et al. (2023) explored the link between ESG performance and downside risk in Chinese mutual funds, revealing a positive correlation from 2018 to 2021. Better ESG performance indicated lower downside risk. However, this connection weakened during the Covid-19 epidemic due to unique circumstances. Pavlova and de Boyrie (2022) analyzed ESG ETFs' risk-adjusted returns pre and post the stock market crisis caused by Covid-19. Lower-rated sustainable ETFs showed better post-crisis performance. Kumar Raut's recent study (2020) investigated factors influencing investors' decisions regarding socially responsible investments in the Indian stock market.. Through a comprehensive analysis of the research findings, the study identified several influential factors on investor intentions towards SRI, including attitude, subjective norms, moral standards, financial literacy, and financial performance. Liu and Wan (2023) found that the Chinese stock market is immature and lacks knowledge of ESG investments and green regulations. A study demonstrates a negative correlation between the ESG rating and the volume of retail trading. Kirti Sood, Kumar Arijit et al (2022) compared the performance of the high-ESG and low-ESG portfolios on the Indian stock market before and after the Covid19 pandemic. Overall, it was observed that the stock portfolios of high- and low-performing ESG companies did not change for the pre- and post-covid. Kumar et al (2016) discovered that organisations investing in ESG elements had lower volatility than their competitors in the same industry, which results in higher profits. Ariadna Dumitrescu et al (2023) this study compares the performance of passive SRI ETFs against S&P500 ETFs, which serve as their non-SRI benchmarks. They demonstrate that positive screening (or inclusion) rather than negative screening (or exclusion) can outperform the benchmark portfolio for SRI investment strategies. Becker et al (2022) examine how European Union (EU) mutual funds and individual investors would be affected by the Sustainable Finance Disclosure Regulation (SFDR). Investigated whether impacted funds become more sustainable in comparison to a control group. Results demonstrate that after the policy adjustment, the affected funds' sustainability rating increased. Larger fund net inflows

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are correlated with stronger ESG labels. Javier Lopez and Pro et al (2022) shows the risk return performance of equity portfolios based on mixedESG score. They concluded that if ESG portfolio is high, it will have reduced volatility, poorer returns, and it will also result in lower Sharpe ratios. Broadstock et al (2021) showed '(i) high-ESG portfolios generally outperform low-ESG portfolios (ii) ESG performance mitigates financial risk during financial crisis and (iii) the role of ESG performance is attenuated in 'normal' times, confirming its incremental importance during crisis. Akihiro Omura et al (2021) studied the performance of SRI /ESG investment against conventional investment during the covid-19 pandemic. During the pandemic, SRI indices outperformed. Aydogmus et al. (2022) found positive ESG correlation with valuation. Social and governance scores impact value, while environmental scores don't. High ESG performance benefits firm value and viability. Gavrilakis and Floros (2023) noted investors hesitate due to return fears, downplaying sustainability.

Research Objectives

Prior research underscores ESG investments' potential for growth and returns, yet they lack traction among general investors. Market research and focused studies can enhance ESG fund perception, aligning with sustainable long-term investment needs. Our study compares ESG fund performance to market benchmarks and traditional equity funds, guiding investor decisions. This study aims

- To assess the performance of ESG funds using risk adjusted return measures
- To evaluate the performance of ESG funds in comparison to traditional equity funds.

Research Methodology

This section gives an overview of the methods employed to assess the performance evaluation of ESG funds. The study aims at analyzing the performance of ESG funds for the period ranging from 1st April 2021 to 10 April 2023.This empirical analysis is based on secondary data. collected from websites like NSE ,RBI, AMFI, yahoo finance and other official websites. Table 1 provides the list of ESG funds selected for the purpose of the study. Only Regular growth plans have been selected for the purpose of the study. In order to conduct the study, sample of 5 best performing AMC in India for the period of 1 April 2021 to 31 March 2023 (2 years) has been considered. The study includes 2 equity funds of each AMC that is an ESG fund and the other one being a traditional equity fund.

Table 1: Selected ESG Funds

Sr. no.	ESG Funds	Plan	Period of study
1	Axis ESG Equity Fund	Regular Growth	1/04/2021 – 10/04/2023
2	ABSL ESG Fund	Regular Growth	1/04/2021 – 10/04/2023
3	SBI Magnum Equity ESG Fund	Regular Growth	1/04/2021 – 10/04/2023

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4	Kotak ESG Opportunities	Regular Growth	1/04/2021 – 10/04/2023
5	ICICI Prudential ESG Fund	Regular Growth	1/04/2021 – 10/04/2023
6	Quantum India ESG Equity	Regular Growth	1/04/2021 – 10/04/2023
7	Invesco India ESG Equity Fund	Regular Growth	1/04/2021 – 10/04/2023
8	Quant ESG Equity Fund	Regular Growth	1/04/2021 – 10/04/2023
NIFTY100 ESG Market Benchmark (91-Day GOI T-Bill, risk-free rate of return)			

Techniques used to analyse the date are Sharpe's ratio, Jenson's Ratio, Treynor's ratio, Standard deviation. Portfolio (Rx) and Index (Rm) Average Returns: To arrive at the average returns of the Portfolio (ESG Mutual Fund Scheme) and the Benchmark Index (NIFTY 100 ESG), we take the average of the daily Net Asset Values (NAV) Returns and the average of the daily Benchmark Index Returns.

Data analysis

For performance analysis of ESG funds, Nifty 100 ESG benchmark has been employed as a market benchmark and '91-Day Government of India Treasury Bill' (91-Day GOI T-Bill) is employed as risk-free asset.

Table 2: Computation of Sharpe Ratio, Treynor's Ratio and Jenson's alpha for the selected ESG funds

Selected ESG funds	**Sharpe ratio**	**Treynor ratio**	**Jenson alpha**	**Portfolio average return**	**Sd**
Axis ESG Equity Fund Outcome	-5.29	-5.15	-0.35	-0.01	0.90
Aditya Birla Sun Life ESG Fund	-4.65	-5.35	-0.51	-0.01	1.03
SBI Magnum Equity ESG Fund	-5.01	-4.86	-0.09	-0.03	0.95
Kotak ESG Opportunities	-4.93	-4.96	-0.18	-0.01	0.97
ICICI Prudential ESG Fund	-6.00	-4.26	0.57	-0.02	0.80
Quantum India ESG Equity	-5.44	-4.50	0.28	-0.02	0.88
Invesco India ESG	-5.27	-4.78	-0.02	-0.03	0.91

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Equity Fund					
Quant ESG Equity Fund	-3.84	-7.46	-1.74	-0.08	1.26

Table 2 displays the results of Sharpe ratio, Treynor ratio and Jenson's alpha values for the selected ESG funds. The findings indicate that among the ESG funds examined, the Quant India ESG fund exhibited superior performance compared to the other funds, as evident from its Sharpe ratio value of (-5.44). The ICICI Prudential Equity ESG fund demonstrates favourable performance based on the Treynor ratio (-4.26) and Jenson's measure (0.57). Portfolio average returns of selected ESG funds demonstrate that, overall, the returns are lower in comparison to the market. The ESG funds have been underperforming.

We further study the performance of ESG funds compared to the equity funds of the respective asset management company (AMC). The top 5 AMCs have been selected for the study based on total assets under management.

Table 3: Comparison of SBI Magnum ESG Fund with SBI Contra Fund

Scheme name	SBI magnum ESG fund	SBI contra fund
Portfolio Average Returns	0.034	0.080
Standard Deviation of the Portfolio Returns	0.952	0.874
Beta Coefficient	0.973	0.961
Sharpe Ratio	-4.867	-5.248
Treynor's Ratio	-4.763	-4.771
Jenson's Ratio	-0.129	-0.136

In Table 3, the Sharpe Ratio for the SBI Magnum ESG fund is -4.86, while the Sharpe Ratio for the SBI Contra fund is -5.24. During the selected observation period, both funds experienced negative Sharpe ratios. Comparing the two funds, the SBI Magnum ESG fund exhibited a higher Sharpe ratio than the SBI Contra fund. This outcome can be attributed to market fluctuations over the two-year period under consideration.

Upon observing the Treynor's ratios of both funds, they appear to be quite similar to each other. However, the SBI Magnum ESG fund has a higher Treynor's ratio compared to the SBI Contra fund.

Jenson's ratio evaluates the portfolio's adjusted risk performance. A higher ratio suggests a significant increase in stock returns. In this case, the SBI Contra fund demonstrates a higher excess return when compared to the SBI Magnum ESG fund.

Table 4: Comparison of ABSL ESG Fund with ABSL Flexicap Fund

Scheme name	**ABSL ESG fund**	**ABSL Flexicap fund**

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Portfolio Average Returns	0.021	0.032
Standard Deviation of the Portfolio Returns	1.022	0.948
Beta Coefficient	0.862	0.969
Sharpe Ratio	-4.548	-4.890
Treynor‘s Ratio	-5.390	-4.780
Jenson’s Ratio	-0.655	-0.146

In Table 4, we can observe two funds of Aditya Birla Sun Life Mutual Fund AMC, ABSL ESG fund and ABSL Flexi cap fund. Treynor's ratio and Sharpe ratio are used to measure the returns received by investors in relation to the benchmark. The Sharpe ratio for ABSL ESG fund is -4.54, which is comparatively better than ABSL Flexi cap fund's -4.88. This indicates that ABSL ESG fund has a relatively higher Sharpe ratio.

On the other hand, the Treynor's ratio for ABSL ESG fund is -5.39, while ABSL Flexi cap fund's Treynor's ratio stands at -4.78. In this case, ABSL Flexi cap fund has the highest Treynor's ratio when compared to ABSL ESG fund. When considering Jenson's ratio, both funds, ABSL ESG fund and ABSL Flexi cap fund, show high excess returns. However, ABSL ESG fund exhibits a higher excess return compared to ABSL Flexi cap fund.

Table 5: Comparison of ICICI ESG Fund with ICICI Blue-chip Fund

Scheme Name	ICICI ESG FUND	ICICI BLUECHIP FUND
Portfolio Average Returns	0.025	0.048
Standard Deviations of the Portfolio Return	0.794	0.877
Beta Coefficient	1.087	1.079
Sharpe Ratio	-5.843	-5.268
Treynor’s Ratio	-4.270	-4.280
Jenson’s Ratio	0.391	0.378

In Table 5, we can observe two equity funds of ICICI Mutual Fund AMC, ICICI ESG fund and ICICI Blue-chip fund. The Sharpe ratios of both funds are pretty similar to each other. ICICI ESG fund has a Sharpe ratio of -5.84, while ICICI Blue-chip fund has a Sharpe ratio of -5.26. Comparing the two funds, ICICI Blue-chip fund provides better returns. The Treynor's ratios of both funds are almost the same, with ICICI ESG fund having a ratio of -4.27 and ICICI Blue-chip fund having a ratio of -4.28. Regarding Jenson's ratio, ICICI ESG fund demonstrates a higher excess return compared to ICICI Blue-chip fund.

Table 6: Comparison of Kotak ESG Opportunities Fund with Kotak Small Cap Fund

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Scheme Name	KOTAK ESG opportunities fund	KOTAK Small Cap Fund
Portfolio Average Returns	0.000	0.057
Standard Deviation of the Portfolio Return	0.964	0.870
Beta Coefficient	0.950	0.822
Sharpe Ratio	-4.822	-5.297
Treynor’s Ratio	-4.892	-5.605
Jenson’s Ratio	0.000	-0.801

In Table 6, we can observe two funds from Kotak Mutual Fund AMC, Kotak ESG Opportunities fund and Kotak Small Cap fund. The Sharpe ratio, Treynor's ratio, and Jenson's ratio provide insights into risk-adjusted performance. Comparing the Sharpe ratios of both funds, Kotak ESG Opportunities fund is offering better returns to investors against the benchmark. When examining the Treynor's ratios, Kotak ESG Opportunities fund has a higher ratio (-4.89) compared to the Kotak Small Cap fund (-5.60). This suggests that Kotak ESG Opportunities fund provides a relatively higher reward for the risk taken, compared to Kotak Small Cap fund. In terms of Jenson's ratio, Kotak ESG Opportunities fund demonstrates a higher excess return, while Kotak Small Cap fund has a lower return. Overall, based on the Sharpe ratio, Treynor's ratio, and Jenson's ratio, Kotak ESG Opportunities fund appears to outperform Kotak Small Cap fund in terms of risk-adjusted performance.

Table 7: Comparison of Axis ESG Equity fund with Axis Small Cap Fund

Scheme Name	AXIS ESG EQUITY FUND	AXIS Small CAP
Portfolio Average Returns	0.014	0.071
Standard Deviation of the Portfolio Returns	0.898	0.888
Beta Coefficient	0.898	0.805
Sharpe Ratio	-5.181	-5.176
Treynor’s Ratio	-5.180	-5.706
Jenson’s Ratio	-0.494	-0.866

In Table 7, we can observe two equity funds of Axis Mutual Fund AMC, Axis ESG fund and Axis Small Cap fund. Both the Sharpe ratio and Treynor's ratio for these funds are negative. Comparing the Sharpe ratios, Axis ESG fund (-5.18) is not as good as Axis Small Cap fund (-

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5.17). This indicates that Axis Small Cap fund performs slightly better in terms of risk-adjusted returns according to the Sharpe ratio. Similarly, when looking at the Treynor's ratios, Axis Small Cap fund (-5.70) has a lower ratio compared to Axis ESG fund (-5.18). This suggests that Axis ESG fund has relatively better portfolio returns based on Treynor's ratio. With reference to Jenson’s measure, Axis ESG equity fund has performed better than Axis Small cap fund.

Findings and Conclusion

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