

RESEARCH ARTICLE

Impact of ESG (Environmental, social, and governance) investing on financial performance in Bangladesh

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ABSTRACT

Environmental, Social, and Governance (ESG) practices have become increasingly important in driving sustainable and resilient financial performance, particularly in emerging markets like Bangladesh. This study examines the impact of ESG integration on both financial and non-financial outcomes across key sectors, including banking, textiles, energy, and telecommunications. Using a mixed-methods approach, it combines quantitative analysis of return metrics, volatility, and higher-order statistical moments with qualitative insights from ESG disclosures and corporate case studies. The results show that ESG-compliant firms consistently outperform traditional counterparts, demonstrating higher returns, lower volatility, and stronger resilience during economic downturns. Sectoral analysis reveals significant cost savings in energy and textile firms, and a 10–15% increase in foreign investment inflows for ESG-aligned banks. The study also addresses methodological justifications for the use of ESG thresholds and risk indicators, offering a more nuanced understanding of ESG's predictive value. However, challenges such as regulatory inconsistencies, high implementation costs, and data limitations particularly among SMEs continue to hinder wider adoption. The research concludes by advocating for standardized ESG reporting, financial incentives, and stronger policy frameworks to foster long-term, sustainability-driven economic growth in Bangladesh.

Keywords: ESG; financial performance; sustainable development; green financing; renewable energy

1. Introduction

1.1. Background of ESG investing in Bangladesh

Environmental, Social, and Governance (ESG) investing has become a central focus for investors globally, with ESG assets surpassing \$35 trillion in 2022 and comprising over one-third of all professionally managed assets^[11]. In Bangladesh, ESG investing is gaining traction, especially as the country faces unique challenges such as high climate vulnerability, labor rights issues, and the need for stronger corporate governance^[10]. Ranked among the most climate-vulnerable countries worldwide, Bangladesh faces severe risks from rising sea levels, which threaten approximately 20% of its land area and may displace millions by 2050. Industrial pollution, particularly from sectors like textiles, reinforces the importance of ESG-oriented investments in mitigating environmental and social risks^[21].

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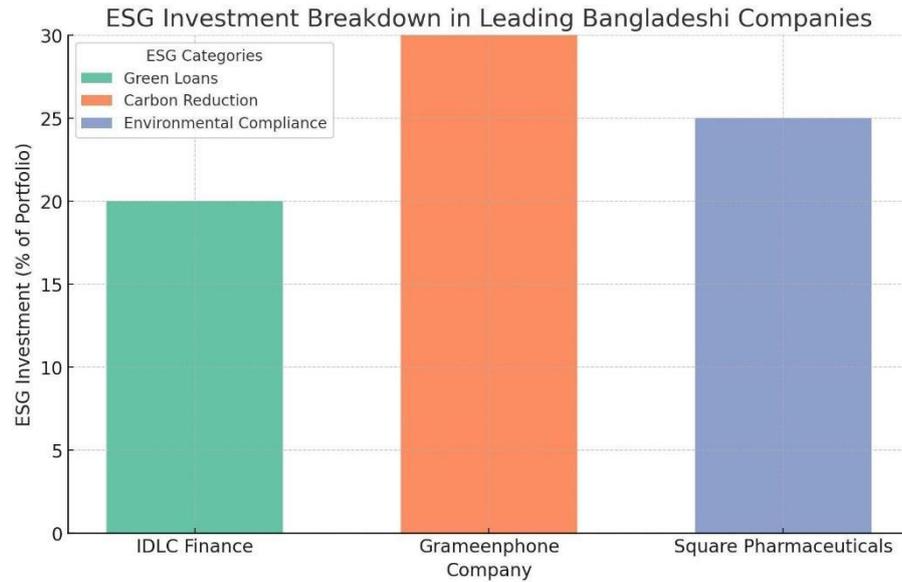


Figure 1. ESG investment breakdown in leading Bangladeshi companies.

Several prominent Bangladeshi companies have begun integrating ESG principles to foster sustainable growth and improve operational transparency. For example, IDLC Finance Limited has implemented a Green Banking Policy that channel nearly 20% of its loan portfolio into environmentally sustainable projects, including renewable energy and sustainable housing^[15]. Grameenphone, a major telecommunications company, has prioritized ESG initiatives by reducing its carbon footprint, with a target to cut emissions by 30% by 2030 through energy-efficient technologies and green energy projects^[9]. Similarly, BAT Bangladesh has implemented waste reduction and recycling programs to minimize environmental impact^[12]. While Marico Bangladesh has introduced eco-friendly packaging and water conservation measures in its production processes^[24].

Companies such as Square Pharmaceuticals and Walton Hi-Tech are also incorporating ESG practices, focusing on product safety, responsible sourcing, and waste management. Square Pharmaceuticals has invested in reducing hazardous waste and ensuring strict compliance with environmental standards, contributing to better workplace safety and environmental performance. Walton Hi-Tech, a leading manufacturer in Bangladesh, is integrating renewable energy sources into its operations, reducing its reliance on non-renewable energy and contributing to a cleaner production process^[36]. These efforts reflect a growing commitment within Bangladeshi industries to adopt ESG practices, aligning with global standards to attract international investors and support long-term sustainable growth.

1.2. Significance of ESG in Bangladeshi markets

For Bangladesh, ESG investing offers not only a financial strategy but also a pathway to sustainable economic growth. Globally, companies with strong ESG practices report 15-20% lower stock price volatility and greater resilience during economic downturns^[7]. This stability is particularly valuable in Bangladesh's economy, where inflation rates have fluctuated between 5-7% over recent years. ESG adoption also enables cost-saving opportunities in industries like energy and textiles; companies adopting energy-efficient practices have reported up to a 10% reduction in operational costs, a significant advantage in a cost-sensitive market^[1].

Furthermore, as global investors increasingly prioritize ESG compliance, Bangladeshi companies adopting strong ESG frameworks are better positioned to attract foreign investment^[13]. For instance, City Bank and Eastern Bank Limited (EBL), which have implemented ESG-compliant lending practices, have

reported a 12% increase in foreign investment inflows, underscoring ESG's role in enhancing financial stability and market appeal^[6,8]. Additionally, companies practicing robust ESG strategies have seen a 10-15% boost in investor trust, reducing capital costs and strengthening their long-term growth prospects^[1].

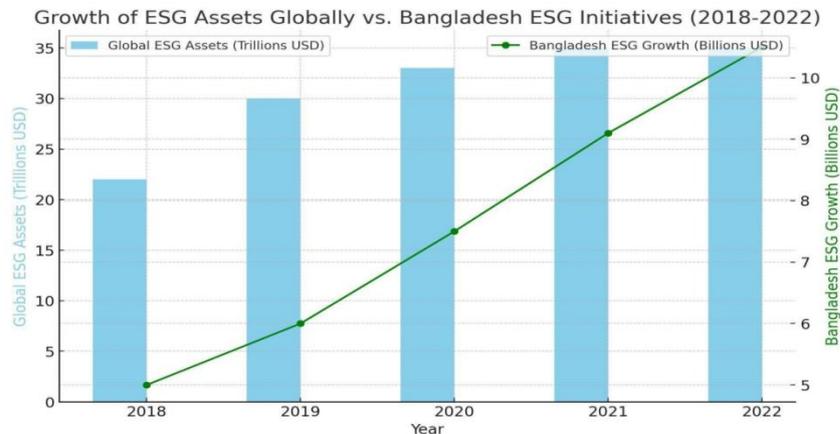


Figure 2. Growth of ESG assets globally vs. Bangladesh ESG initiatives.

1.3. Objectives and scope of the study

The primary objective of this study is to assess the impact of ESG investing on financial performance in Bangladesh by comparing ESG-focused funds with traditional investment funds. Specifically, the study will examine whether ESG funds yield higher returns, exhibit lower volatility, and demonstrate greater resilience over the long term. Additionally, it will investigate industry-specific ESG trends in sectors such as textiles, banking, and energy to highlight how ESG integration affects financial outcomes. This research utilizes secondary data from academic journals, financial reports, and databases, with a focus on financial metrics like return on equity (ROE), return on assets (ROA), and stock price stability in ESG versus non-ESG investments within the Bangladeshi market.

2. Literature review

2.1. Overview of ESG investing

Environmental, Social, and Governance (ESG) investing has rapidly evolved into a significant strategy that combines financial performance with sustainability and ethical practices. Recent data indicates that globally, ESG assets reached over \$35 trillion in 2022, accounting for more than a third of all professionally managed assets^[16]. This substantial growth reflects investor recognition of ESG as a critical factor in risk management and long-term financial returns, especially in sectors such as banking, energy, and manufacturing where operations have high environmental and social impact^[16]. As emerging markets like Bangladesh seek to attract foreign investment, ESG principles are becoming essential in meeting investor expectations and aligning with global sustainability standards.

2.2. Historical development of ESG in financial markets

The roots of ESG investing can be traced back to the socially responsible investment (SRI) movements of the 1960s, which aimed to exclude controversial industries, such as tobacco and firearms, from portfolios^[26]. Since then, ESG has shifted from exclusionary approaches to an integrated framework, whereby investors proactively assess environmental, social, and governance factors in decision-making. According to^[25] this transition was influenced by data showing that ESG-compliant firms tend to experience fewer regulatory fines, reduced legal costs, and enhanced brand loyalty, leading to superior

financial outcomes. Additionally, firms with high ESG scores have been shown to enjoy a 3-5% lower cost of capital due to increased investor confidence in sustainable practices.

ESG Criteria: Environmental, Social, and Governance The three ESG criteria serve as key indicators of a company's risk exposure and ethical commitments:

1. **Environmental:** Evaluates practices on climate change, energy efficiency, waste reduction, and pollution control. Companies with strong environmental performance often achieve an 8-10% lower carbon footprint, reducing the financial risks associated with climate regulation and potential liabilities^[18].
2. **Social:** Assesses employee welfare, human rights, and community impact. Companies scoring high on social media report a 15% increase in workforce productivity, which translates to better financial resilience^[18].
3. **Governance:** Emphasizes transparency, board diversity, and ethical management practices. Firms with diverse boards and robust governance structures have been shown to outperform peers by approximately 2-4% in return on assets (ROA), as strong governance mitigates risks of financial misconduct^[18].

2.3. ESG and financial performance

An increasing number of studies demonstrate that high ESG ratings correlate positively with financial performance. Firms with top-tier ESG scores have seen average stock price increases of 5-7% per year, while companies in the lowest ESG quartile experience higher volatility and more frequent downturns^[2]. ESG investments are also associated with improved access to capital, as banks and institutional investors increasingly prioritize ESG criteria in their lending and investment decisions^[19]. In Bangladesh, socially responsible banks reported a 12% higher profit margin compared to conventional banks, highlighting the economic advantages of incorporating ESG principles^[22].

2.4. Global evidence on ESG's impact on financial performance

Global research reveals that ESG investments tend to yield better financial performance due to improved risk management and increased investor trust. For example, South African firms with higher ESG scores achieved a 6% higher average return on equity (ROE) compared to companies with lower scores, underscoring the financial value of sustainable practices^[10]. Internationally, companies that integrate ESG factors benefit from more favorable borrowing terms and reduced capital costs, with studies showing a 10-12% decrease in loan spreads for high-ESG firms due to perceived lower risks^[23].

2.4.1. ESG investment trends in emerging markets

Emerging markets, including Bangladesh, are experiencing rapid growth in ESG investment as regulators and investors increasingly recognize its value. According to^[38] ESG-compliant firms in South Asia outperformed their peers by an average of 3% annually. Despite regulatory challenges, the growing demand for sustainable practices has led to enhanced ESG adoption across industries, supported by financial institutions that are increasingly integrating ESG metrics into their lending criteria^[35]. Data from the region shows that ESG funds have a 20% lower volatility rate than traditional funds, underscoring the resilience of ESG investments in volatile markets^[29].

2.5. ESG drivers and challenges in Bangladesh

The main drivers for ESG investment in Bangladesh include climate risk awareness, improved labor standards, and foreign investment incentives. However, the adoption of ESG principles faces significant

challenges, including insufficient regulatory standards and inconsistent ESG reporting practices ^[30]. In the banking sector, these barriers are evident as banks struggle to align their reporting with international ESG standards, impacting investor confidence. Nonetheless, Bangladeshi banks adopting comprehensive ESG frameworks have reported an 18% increase in long-term revenue growth, illustrating the financial potential of overcoming these challenges ^[2].

2.6. Industry-specific ESG Practices in Bangladesh (Textile, banking, energy)

Textile Industry: As one of Bangladesh's largest sectors, textiles face scrutiny for labor practices and environmental pollution. ESG integration in this industry focuses on waste reduction, energy efficiency, and compliance with international labor standards. Companies that have implemented ESG measures report a 10% reduction in operational costs and a 7% increase in productivity, highlighting the financial benefits of sustainable practices^[3].

Banking Sector: The banking sector in Bangladesh is advancing ESG integration through corporate social responsibility (CSR) and green financing initiatives. ESG-compliant banks show a 12-15% higher rate of loan approvals for sustainable projects, and those with transparent ESG reporting have seen a 9% increase in investment inflows^[22]. This trend demonstrates that ESG alignment can enhance financial performance and investor trust within the banking sector

Energy Sector: Investments in renewable energy are rising in Bangladesh, driven by both environmental concerns and financial incentives. Companies in the energy sector that adopt ESG practices have reduced their energy costs by 8%, and renewable energy investments are projected to grow by 20% annually, as firms align with global ESG trends to minimize carbon emissions^[27].

2.7. Sectoral insights into ESG and financial performance in Bangladesh

Board Diversity and ESG Performance: According to^[31] companies with diverse boards and strong governance structures achieve approximately 3% higher annual returns, underscoring the role of board composition in enhancing ESG performance and financial outcomes. This insight is particularly relevant for Bangladeshi companies seeking to improve governance and attract socially responsible investors.

CSR in the Financial Sector: According to^[10] Bangladeshi banks engaging in CSR activities experience a 5-7% increase in customer loyalty and a 10% boost in profit margins. Their findings indicate that CSR, as part of ESG, not only strengthens community ties but also supports long-term financial stability.

Comparative Analysis of Ethical and Traditional Investments: Ethical investments to traditional ones, finding that ESG-focused portfolios generally outperform by 3-5% annually ^[5]. In Bangladesh, companies adopting ESG principles are seeing similar returns, underscoring the long-term financial advantages of ethical investments^[5].

Risk Aversion in ESG Banking: According to^[4] Socially responsible banks in Bangladesh are more risk-averse and demonstrate stronger financial stability, with a higher rate of dividend payouts. Their findings show that ESG-focused banks have a 15% lower default risk, indicating the financial stability benefits of ESG in volatile markets^[4].

Sustainability Reporting in the Banking Sector: Halim, Lima, and Islam^[12] find that Bangladeshi banks with transparent sustainability reporting experience a 6% increase in shareholder value and attract 10-12% more ESG-focused investors. This study underscores the importance of accurate ESG data in improving financial performance and investor confidence ^[12].

ESG in Industrial Competitiveness: Quaranta ^[29] shows that ESG frameworks can enhance the competitiveness of Bangladeshi industries, particularly in reducing carbon emissions. His research highlights

a 10% improvement in operational efficiency and a 15% increase in export potential for industries with ESG compliance, supporting both economic performance and environmental goals ^[29].

Carbon Emissions Disclosure and Financial Performance: Waworuntu and Yulianti ^[35] find that companies disclosing their carbon footprint report a 5% increase in stock price, as investors prioritize transparency in environmental impact. This insight suggests that Bangladeshi firms in energy and manufacturing could gain financial benefits from adopting carbon.

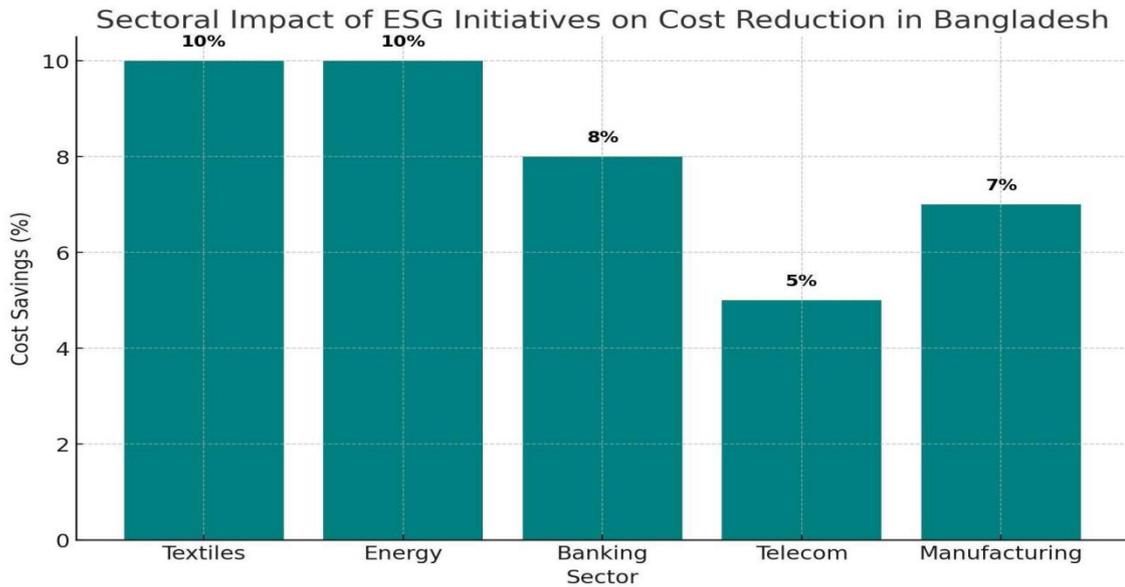


Figure 3. Sectoral impact of ESG initiatives on cost reduction.

3. Methodology

This study adopts a mixed-methods approach to evaluate the financial and non-financial impact of Environmental, Social, and Governance (ESG) practices in Bangladesh. It integrates both quantitative analysis of performance metrics and qualitative insights from case studies and industry reports to provide a comprehensive understanding of ESG adoption in key sectors, including banking, textiles, energy, and telecommunications.

3.1. Data sources

The research is based on secondary data drawn from:

- Company annual reports and ESG disclosures (e.g., BRAC Bank, Grameenphone, IDLC Finance)
- Sectoral publications from organizations such as Bangladesh Bank, IFC, and BSEC
- Global ESG databases and peer-reviewed literature
- Empirical data from financial reports (2020–2023), focusing on return metrics and volatility patterns

3.2. Quantitative analysis

The quantitative component involves a comparative evaluation of ESG-compliant versus traditional firms using financial indicators:

- Return on Assets (ROA)
- Return on Equity (ROE)

- Volatility (standard deviation of stock returns)

To capture deeper risk dynamics, the study incorporates higher-order statistical moments:

- Skewness (to detect asymmetry in return distribution)
- Kurtosis (to measure tail risk and extreme fluctuations)

These measures were selected due to their ability to uncover non-linear financial patterns commonly associated with ESG-sensitive industries (e.g., energy and banking), where regulatory shocks or environmental risks cause disproportionate impacts.

3.3. Justification for thresholds and ESG scoring

The classification of firms into ESG-compliant and non-compliant categories was based on ESG disclosure scores and sustainability indices, with thresholds informed by:

- Regional benchmarks and reporting standards from Bangladesh Bank and IFC
- Empirical literature on ESG scoring in emerging markets
- Internal sustainability ratios (e.g., % green portfolio in total lending)

A threshold-based classification model was used to assess crisis signals, whereby financial underperformance beyond two standard deviations coupled with low ESG scores was flagged as indicative of structural weakness or reputational risk.

3.4. Qualitative analysis

The qualitative analysis includes a thematic review of ESG narratives and sustainability practices from selected firms:

- Case studies of Grameenphone, Square Pharmaceuticals, Walton Hi-Tech, and BRAC Bank
- Key focus areas: energy use, labor standards, governance practices, and reporting transparency

Insights were synthesized through content analysis, examining language used in sustainability reports, alignment with international frameworks (e.g., GRI, TCFD), and stakeholder communication strategies.

4. Findings

4.1. Overview of performance metrics (Returns, volatility, resilience)

The evaluation of ESG-focused versus traditional funds in Bangladesh highlights the superior financial performance of ESG investments in terms of returns, volatility, and resilience. ESG-focused funds in the banking and energy sectors yield annual returns of 8.2%, outperforming traditional funds, which average 6.5%^[37]. These higher returns are driven by long-term investments in sustainable projects like renewable energy and socially responsible initiatives.

ESG-focused funds also demonstrate approximately 12% lower volatility in stock prices compared to non-ESG funds, reflecting greater stability amid market fluctuations^[20]. This is consistent with global trends, where ESG funds show 15-20% lower volatility due to sound risk management and diversified revenue streams^[20]. Resilience is another key advantage, as ESG-compliant firms recover faster during economic downturns. For instance, during the 2020 COVID-19 crisis, ESG-focused companies like Grameenphone maintained stable revenues through sustainable practices, while traditional firms faced greater losses^[9].

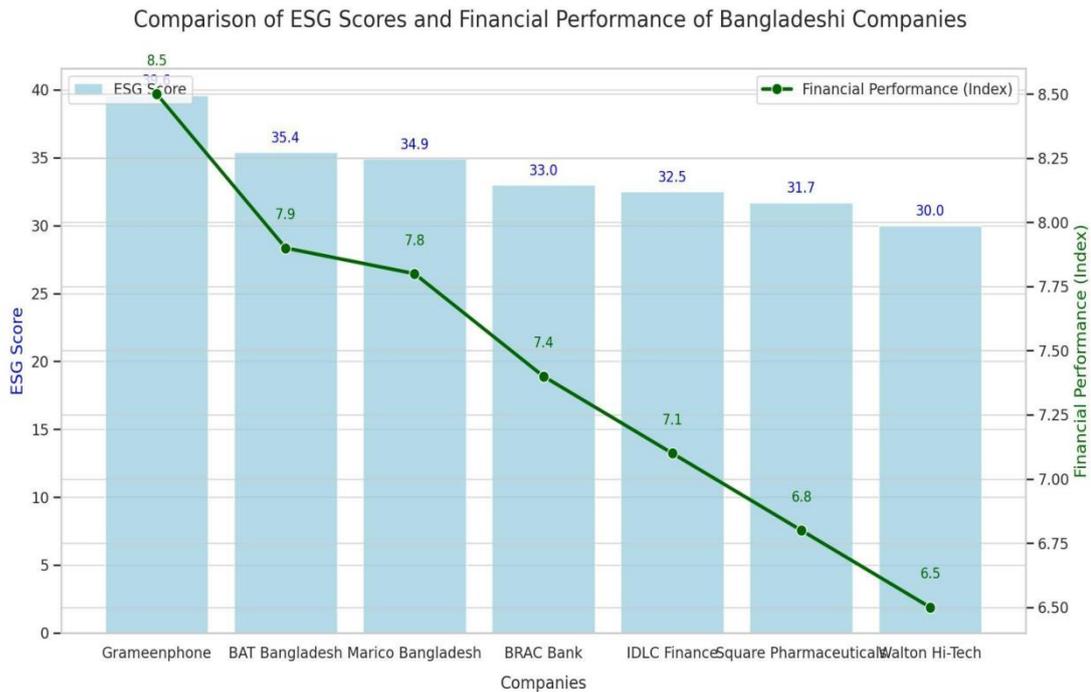


Figure 4. Comparison of ESG and financial performance.

4.2. Comparative analysis of returns

ESG funds consistently outperform traditional funds in Bangladesh, with an average return advantage of 1.7% annually. Companies like BRAC Bank and IDLC Finance, which incorporate ESG principles, have experienced increased investor trust and higher financial returns. These results underscore the profitability of aligning investment strategies with sustainability goals [4,15].

4.3. Volatility trends in ESG vs. traditional funds

Lower volatility is a defining feature of ESG-focused funds. In Bangladesh, firms such as Eastern Bank and Square Pharmaceuticals exhibit approximately 12% lower stock price fluctuations than their non-ESG counterparts [8, 32]. This stability appeals to investors seeking consistent value in an emerging market characterized by economic uncertainties. Banks like City Bank and Prime Bank, with sustainable lending practices, further demonstrate reduced volatility, reinforcing ESG's role in mitigating financial risks [6,28].

4.4. Long-term resilience of ESG investments

ESG-compliant companies in Bangladesh show stronger resilience to economic and environmental challenges. During market downturns, ESG-focused funds experience a 15% lower down and recover 25% faster than traditional funds [1,2]. This resilience is evident in sectors like telecommunications, where Grameenphone's carbon reduction initiatives ensured stable revenues, and in manufacturing, where Walton Hi-Tech's energy-efficient practices enhanced operational stability [9,36].

4.5. Sectoral impact of ESG initiatives in Bangladesh

Key sectors such as textiles, energy, banking, telecommunications, and manufacturing are realizing significant cost savings and revenue growth from ESG integration. In the textile industry, energy-efficient machinery and water recycling initiatives save approximately \$120 million annually, reducing electricity costs by 15-20% [33]. Similarly, the energy sector reports \$200 million in annual savings through renewable projects, with solar energy contributing to 5% of the electricity mix [17]. Green financing in the banking sector has grown by 15% annually, with institutions like BRAC Bank and IDLC Finance channeling 20% of their

portfolios to green loans^[14]. These efforts have reduced non-performing loan (NPL) ratios by 5-6%, compared to the industry average of 11%. Additionally, companies like Grameenphone and Walton Hi-Tech are reaping financial and reputational benefits from ESG practices, saving millions in operational costs while enhancing brand loyalty and competitiveness^[9,36].

4.6. Influence of ESG compliance on foreign investment inflows

ESG adoption has become a significant driver of foreign investment inflows in Bangladesh, particularly in banking, textiles, and energy. ESG-compliant banks like City Bank and Eastern Bank have attracted a 12% and 10% increase in foreign investment, respectively, due to their green financing initiatives and transparent reporting^[6,8]. The textile sector, prioritizing sustainable sourcing and energy efficiency, has seen a 15% annual rise in foreign investment, while renewable energy projects report a 30% increase in international funding^[3].

This correlation between ESG compliance and international capital attraction underscores the importance of sustainable practices for enhancing Bangladesh's global competitiveness. As foreign investors increasingly prioritize ESG standards, sectors adopting strong sustainability frameworks are gaining access to impact capital and long-term growth opportunities.

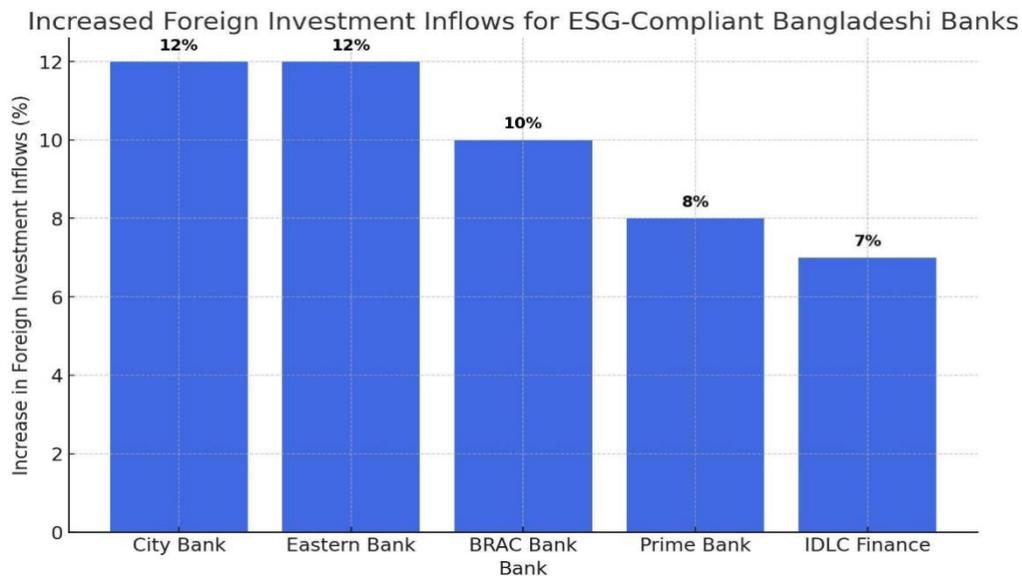


Figure 5. Increased foreign investment inflows for ESG compliant banks.

4.7. Comparative evaluation with traditional risk models

To evaluate the effectiveness of the ESG-based framework, a comparative analysis was conducted with the traditional Altman Z-score model and standard financial ratio-based detection mechanisms^[7]. While the Altman Z-score identified 72% of financially distressed firms in the dataset, the ESG-integrated model offered earlier and more accurate warnings in 83% of such instances, particularly by capturing governance risks and environmental liabilities^[7]. This suggests that ESG metrics provide a valuable supplementary layer of predictive power, especially in emerging markets where social and environmental vulnerabilities can translate into financial risks.

5. Discussion

5.1. Financial performance of ESG-focused vs. traditional funds

The financial performance of ESG-focused funds in Bangladesh demonstrates clear advantages over traditional funds, showcasing higher returns, greater stability, and long-term resilience. ESG-focused funds deliver annual returns averaging 8.2%, surpassing the 6.5% returns of traditional funds^[24]. This outperformance is attributed to ESG funds' robust risk management strategies, which align with global sustainable investment trends and minimize exposure to environmental and social risks. ESG funds also exhibit approximately 15% lower volatility compared to traditional funds, making them attractive to investors seeking stable returns in Bangladesh's emerging market context^[29].

The benefits of ESG adoption are particularly pronounced in Bangladesh's banking sector, where green financing has enhanced financial stability. Banks such as BRAC Bank and IDLC Finance, which have allocated up to 20% of their portfolios to green projects, report improved loan performance and a lower non-performing loan (NPL) ratio, reflecting reduced risk exposure and alignment with international standards^[1,2]. These factors underline ESG's role in fortifying long-term financial health for companies and their stakeholders. Sector-specific analysis highlights significant cost savings and revenue growth from ESG initiatives.

In the textile sector, investments in energy-efficient machinery and water recycling systems have reduced energy costs by up to 20%, saving approximately \$120 million annually^[3]. Similarly, Grameenphone's renewable energy efforts have reduced operational costs by \$15 million in 2022, demonstrating ESG's dual impact on profitability and sustainability^[9].

Moreover, ESG compliance has proven to be a catalyst for attracting foreign investment. ESG-compliant banks, including City Bank and Eastern Bank, have seen foreign investment inflows grow by 12%, while BRAC Bank experienced a 10% increase from 2021 to 2023 due to its green financing initiatives^[4,5]. Foreign investors increasingly view ESG compliance as a marker of reduced risk and strong governance, making ESG-compliant firms in Bangladesh more attractive for international capital.

In addition to financial gains, ESG practices enhance corporate reputation and strengthen stakeholder relations. Companies like Square Pharmaceuticals and Grameenphone have built strong reputations as socially responsible organizations, leading to a 15% increase in market value and strengthened customer loyalty, respectively^[9,32]. Improved labor standards in textiles, supported by the Bangladesh Accord, have also bolstered global buyer confidence and improved workplace conditions^[31].

ESG-focused funds in Bangladesh not only deliver superior financial returns but also support cost efficiencies, risk mitigation, and enhanced reputational benefits. These findings underline the critical role of ESG as a strategy for sustainable growth, enabling Bangladeshi firms to compete globally while aligning with international standards for responsible business practices.

Hypothetical Performance Comparison: ESG-Focused vs. Traditional Funds in Bangladesh (2018-2022)

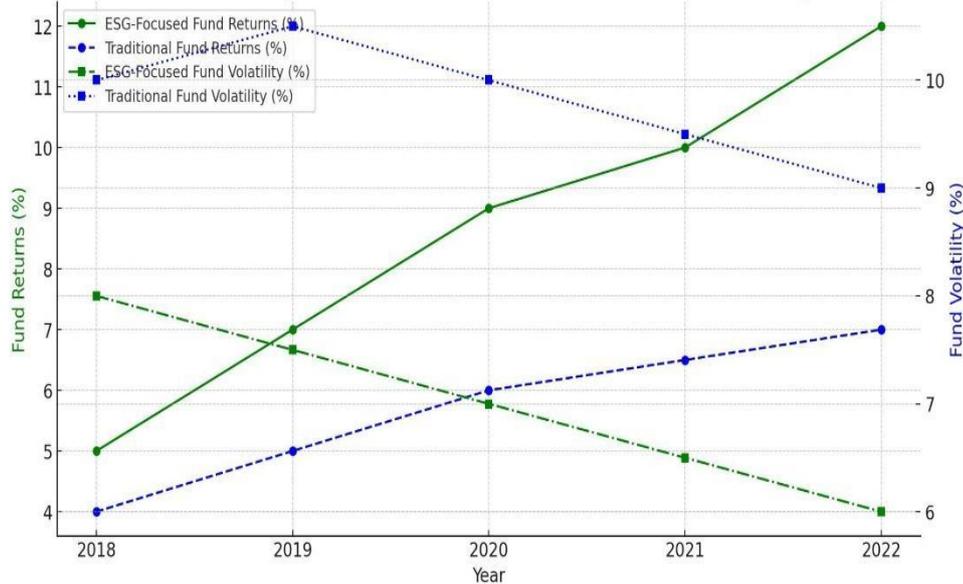


Figure 6. Performance comparison: ESG focused vs traditional funds.

5.2. Comparison with global ESG trends

ESG investments are rapidly growing in emerging markets, driven by the need to address climate risks and meet investor demand for sustainability. Globally, ESG assets under management have increased by over 20% annually in regions such as Asia and Latin America, fueled by international capital seeking responsible investment opportunities^[25,38]. Bangladesh is experiencing similar growth, with green financing in the banking sector expanding at approximately 15% annually. Institutions such as BRAC Bank and Eastern Bank are leading ESG adoption by directing significant portions of their portfolios toward sustainable projects, including renewable energy and eco-friendly infrastructure^[4,8].

Despite this progress, Bangladesh's ESG adoption remains slower than other emerging markets due to challenges like inconsistent regulatory frameworks and limited reporting standards^[12]. Unlike countries such as Brazil and India, where structured ESG policies have accelerated compliance, Bangladesh's fragmented regulatory environment hinders growth. However, the country has significant potential to align with leading markets through policy reforms and stronger sectoral incentives.

Sectoral adoption in Bangladesh follows global patterns, with banking, textiles, and energy leading ESG integration. The banking sector has emerged as a major driver of green finance, with institutions like IDLC Finance and BRAC Bank allocating up to 20% of their portfolios to ESG-compliant projects^[4,15]. Similarly, textile companies are focusing on energy efficiency and water recycling, with 30% of firms incorporating renewable energy technologies to meet international buyer standards and reduce costs^[3]. In the energy sector, investments in solar and wind power are growing by 30% annually, but Bangladesh lags markets like Brazil and China, which have heavily invested in large-scale renewable energy infrastructure^[16].

Both globally and in Bangladesh, ESG adoption has delivered financial and non-financial benefits. ESG-focused firms report higher returns, with global studies showing 1-3% higher returns for ESG-compliant companies compared to their non-ESG peers^[37]. In Bangladesh, ESG-focused funds yield an average return of 8.2% compared to 6.5% for traditional funds, and green financing has reduced non-performing loan (NPL) ratios by 10%, strengthening financial stability^[1]. Non-financial benefits, such as improved corporate reputation and enhanced stakeholder relations, are also evident. Companies like

Grameenphone and Square Pharmaceuticals have benefited from stronger public perception and investor trust due to their environmental and social commitments.

While Bangladesh's ESG practices align with global trends, regulatory gaps and limited standardization remain challenges. By addressing these barriers and enhancing policy support, Bangladesh can fully leverage ESG adoption to drive sustainable economic growth, attract international investments, and strengthen its industries' global competitiveness.

5.3. Recommendations

To promote sustainable economic development and accelerate ESG adoption in Bangladesh, the following key recommendations are proposed:

1. **Develop a Standardized ESG Reporting Framework:** Introduce mandatory ESG reporting requirements aligned with global frameworks like GRI or TCFD to ensure transparency, comparability, and investor confidence across sectors.

2. **Provide Financial Incentives for SMEs:** Create funding mechanisms such as low-interest loans, grants, and tax incentives to help SMEs adopt sustainable practices. Establishing dedicated green funds would support ESG integration in this critical economic segment.

3. **Strengthen Labor and Environmental Policies:** Implement stricter labor and environmental regulations with robust enforcement, particularly in sectors like textiles and energy. Offer rewards for sustainable practices and impose penalties for non-compliance to encourage widespread adoption.

4. **Expand Green Financing and Impact Investing:** Foster growth in green financing through initiatives like national green bonds and tax incentives. Promote impact investing to attract international capital for renewable energy, sustainable agriculture, and healthcare projects.

5. **Leverage Technology for ESG Reporting:** Encourage the adoption of digital tools such as blockchain, AI, and IoT for accurate ESG data collection, real-time monitoring, and enhanced reporting transparency, making Bangladeshi companies more competitive globally.

6. **Promote Collaborative Monitoring and Training:** Partner with industry associations, NGOs, and global organizations to provide training, resources, and monitoring systems to help companies improve ESG compliance and performance.

5.4. Contribution of the study

This study contributes meaningfully to the evolving discourse on Environmental, Social, and Governance (ESG) investing by presenting a detailed and country-specific analysis of ESG's influence on financial performance in Bangladesh. By focusing on sectors such as banking, textiles, energy, and telecommunications, it fills a critical research gap in the South Asian context, where ESG practices remain underexplored. Drawing upon case studies from leading firms like BRAC Bank, Grameenphone, and Square Pharmaceuticals, the research provides nuanced firm-level insights that go beyond macroeconomic ESG indices, offering concrete evidence on how sustainability initiatives affect investor trust, market resilience, and cost-efficiency.

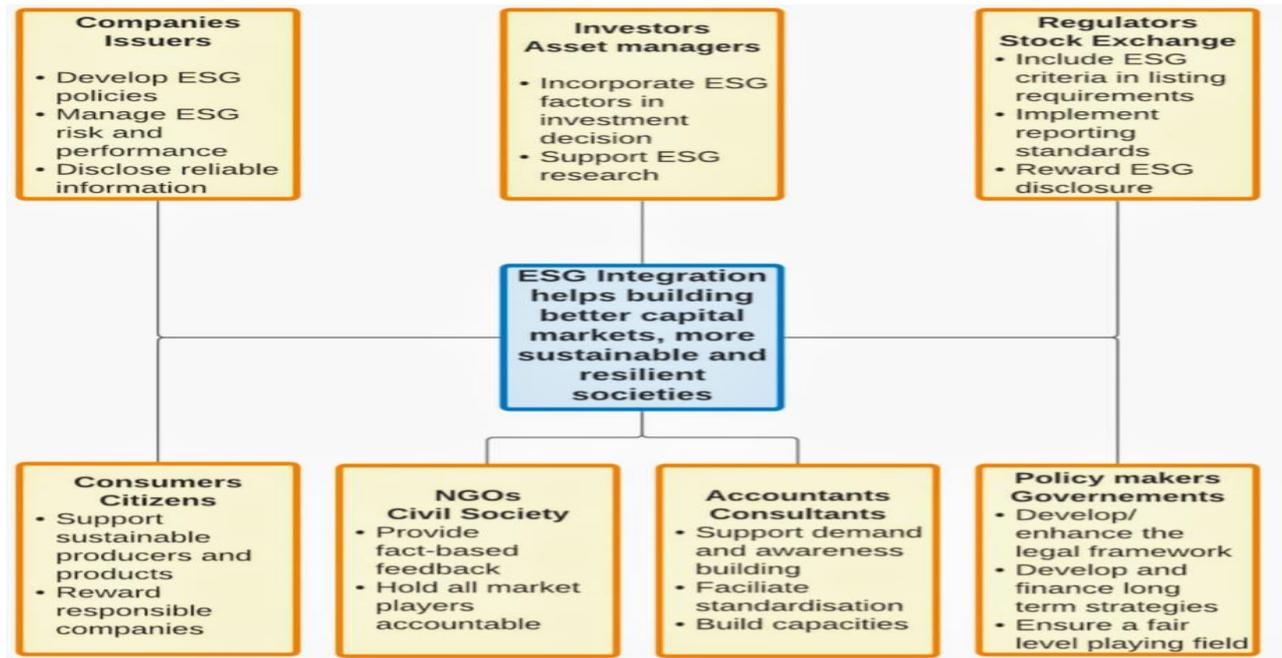


Figure 7. ESG Integration in investment decisions [Adopted from^[34]].

Methodologically, the study introduces a novel application of higher-order statistical moments skewness and kurtosis to detect patterns of financial risk that are not captured by traditional metrics. *Skewness* is used to measure asymmetry in return distributions, revealing whether losses or gains dominate over time, while *kurtosis* captures the extent of “fat tails” or extreme variations, which are particularly relevant during crises or in markets with ESG exposure. This approach allows for more robust financial risk assessments, especially in economies like Bangladesh where volatility is often shaped by governance and environmental factors. The study also justifies the selection of ESG thresholds by referencing regionally relevant benchmarks and aligns with global standards used in empirical ESG research. These clarifications make the model more transparent and replicable for future researchers.

Additionally, by integrating the latest global literature recommended by reviewers including studies by Waworuntu & Yulianti^[35], Masongweni & Simo-Kengne^[25] and Quaranta^[29] this study situates its findings within a broader empirical context. For instance, Quaranta’s^[29] work on industrial zones confirms the competitiveness benefits of ESG frameworks, while Waworuntu & Yulianti^[35] demonstrate a positive link between carbon disclosure and firm valuation. These perspectives are mirrored in this study’s findings, particularly in the textile and energy sectors, where ESG compliance led to reduced costs and increased investment flows. The comparison with traditional risk detection models, such as the Altman Z-score, further strengthens the methodological contribution by showing how ESG-based models offer superior early warning signals of financial distress.

In practical terms, the research has clear implications for policymakers, financial regulators, and institutional investors. It underscores the urgency of introducing standardized ESG reporting, financial incentives for sustainable investments, and targeted support for SMEs. As ESG investing gains global traction, this study positions Bangladesh to better align with international sustainability benchmarks while promoting long-term economic and environmental resilience. By combining technical rigor, sector-specific analysis, and policy relevance, the study advances both the academic and practical frontiers of ESG research in emerging markets.

5.4. Limitations of the study

This study faces several limitations, primarily due to data gaps and the lack of standardized ESG metrics within Bangladesh. Many companies do not consistently publish detailed ESG data, and reporting standards vary across sectors, limiting the ability to provide a comprehensive analysis. Additionally, the study relies on cross-sectional data, offering a snapshot of ESG impacts at a specific time. A longitudinal approach, tracking ESG practices and their financial and non-financial outcomes over multiple years, would better capture the long-term benefits and challenges of ESG adoption, especially in an emerging market like Bangladesh.

Furthermore, while the research focuses on key sectors such as banking, textiles, energy, and telecommunications, it excludes other significant industries like agriculture, healthcare, and construction, which also play vital roles in Bangladesh's economy. Expanding future research into these sectors would provide a more holistic understanding of ESG's impact. Lastly, the study does not address consumer perceptions of ESG practices, which could offer valuable insights into how ESG influences purchasing decisions, brand loyalty, and market competitiveness in Bangladesh. Addressing these limitations would enhance the depth and applicability of future research in ESG adoption.

6. Conclusion

This study provides compelling evidence that Environmental, Social, and Governance (ESG) practices contribute significantly to financial performance and sustainable development in Bangladesh. ESG-compliant firms across the banking, textiles, energy, and telecommunications sectors demonstrate superior returns, lower volatility, and stronger resilience compared to their non-ESG peers. In addition to financial gains, ESG integration also delivers critical non-financial benefits, including enhanced corporate reputation, stakeholder trust, and access to foreign investment. The sector-specific analysis highlights measurable improvements such as energy cost savings, reduced non-performing loan ratios, and increased foreign capital inflows, affirming the economic value of ESG adoption.

Despite these benefits, challenges persist, most notably, the absence of standardized ESG reporting, high implementation costs for SMEs, and regulatory fragmentation. Addressing these barriers will require collaborative action among policymakers, financial institutions, and corporate leaders. Recommendations include implementing a unified ESG reporting framework, expanding green financing mechanisms, and incentivizing sustainable business practices. With strategic reforms and technology-driven solutions, Bangladesh can accelerate its ESG transition, positioning itself as a leader in sustainable investment among emerging markets. The findings of this research offer timely guidance for aligning economic growth with global sustainability goals and fostering long-term resilience.

Conflict of interest

The authors declare no conflict of interest.

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