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Powering India's Net-Zero 2070: The Critical Role of ESG in Greener Corporates

Kavya Sharma
Research Scholar in Department of Social Management,
Central University of Gujarat,
Kundhela-391107,
Vadodara, Gujarat, India.

ABSTRACT

This study explores the crucial role of Environmental, Social, and Governance (ESG) practices in enabling Indian corporates to contribute effectively to the nation's commitment to achieving net-zero emissions by 2070. As regulatory bodies and investors increasingly emphasize sustainable practices, ESG integration has become central to building long-term corporate resilience and stakeholder confidence. Despite its growing significance, widespread ESG adoption continues to face challenges, including policy fragmentation, limited financial access, and the prevalence of greenwashing. Drawing on secondary sources such as academic literature, corporate ESG disclosures, and government publications, this paper examines current ESG trends, sectoral progress, and key implementation barriers. It emphasizes the need for industry-specific strategies, enhanced green financing mechanisms, and a stronger regulatory framework. The study also proposes a comprehensive action plan and policy recommendations aimed at aligning corporate sustainability with India's low-carbon transition goals, ensuring inclusive growth while advancing the country's net-zero mission.

Key Words: Environmental, Social, and Governance (ESG), Net-Zero Emissions, Corporate Sustainability, Green Finance and HRM, India Climate Policy, etc.

INTRODUCTION

As the global economy increasingly pivots toward sustainable development, corporations are under mounting pressure to align their operations with Environmental, Social, and Governance (ESG) principles and contribute meaningfully to the global net-zero agenda. For India, one of the world's fastest-growing economies, this transition is particularly significant. The nation faces the dual challenge of maintaining robust economic growth while striving to meet its ambitious climate commitment of achieving net-zero emissions by 2070.

GYANBODH
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Volume: 2
Issue: 3
May-June:2025

In this evolving landscape, corporate sustainability is no longer a peripheral concern but a central strategic priority, influenced by investor expectations, regulatory mandates, and shifting consumer preferences. ESG frameworks offer businesses structured pathways to minimize environmental harm, promote social responsibility, and uphold ethical governance. Research consistently shows that firms with strong ESG credentials not only attract more investor confidence but also tend to be more financially resilient and sustainable in the long run.

However, the ESG implementation landscape in India is marked by uneven progress. Many sectors continue to face hurdles such as ambiguous regulations, financial constraints, and a lack of uniform sustainability metrics. The path to achieving net-zero emissions necessitates comprehensive changes across corporate operations—ranging from scaling up renewable energy adoption to introducing carbon pricing mechanisms and decarbonizing supply chains. Despite notable efforts by key players in industries like steel, manufacturing, and information technology, challenges such as high upfront costs, regulatory gaps, and instances of superficial "greenwashing" hinder widespread transformation.

This study provides an in-depth analysis of ESG integration across Indian industries, the strategic pathways toward carbon neutrality, and the role of regulatory governance in supporting these efforts. Drawing on secondary data from academic literature, corporate disclosures, and government publications, the research highlights effective practices, identifies key barriers, and recommends policy directions. As stakeholder expectations for corporate responsibility grow both domestically and internationally, India's ability to embed ESG principles within its economic framework will be vital for steering the country toward a truly green economy. This paper contributes to that conversation by exploring how Indian companies can balance profitability with long-term environmental stewardship.

REVIEW OF LITERATURE

Elkington (1997)[1] introduced the concept of the Triple Bottom Line, highlighting that companies must measure their success by environmental and social outcomes, not just financial performance. Similarly, Freeman (1984)[2] emphasized the importance of Stakeholder Theory, which views businesses as responsible not only to shareholders but also to broader communities and ecosystems, forming a foundational base for ESG principles.

[1] Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st-century business*. Capstone Publishing.
[2] Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Cambridge University Press.

GYANBODH
ISSN:3048-9792
Volume: 2
Issue: 3
May-June:2025

Sharma et al. (2025)[3] found that Indian companies with higher ESG adoption tend to experience improved financial performance, stronger firm valuation, and better investor confidence. Their findings align with the view that ESG adoption, while not always immediately profitable, builds long-term financial resilience—particularly when supported by a consistent regulatory framework.

The Securities and Exchange Board of India (SEBI, 2021)[4] has introduced the Business Responsibility and Sustainability Reporting (BRSR) framework to guide ESG disclosure practices. However, challenges remain in achieving alignment with global standards such as the EU Taxonomy, resulting in inconsistent implementation across industries. As the United Nations Principles for Responsible Investment (UNPRI, 2023)[5] notes, strong policy backing is especially important in emerging economies like India, where regulatory incentives significantly influence ESG adoption.

Concerns around greenwashing persist, as highlighted by Nainggolan et al. (2025)[6], who emphasize that without proper governance and audit mechanisms, ESG claims may lose credibility. To address this, the European Commission (2022)[7] recommends adopting standardized ESG reporting frameworks that promote transparency and comparability across firms and industries.

Efforts toward corporate decarbonization have also extended into organizational practices. Kumar and Sahoo (2025)[8] show that Green Human Resource Management (GHRM)—including sustainability training and environmentally focused workplace initiatives—can play a significant role in reducing corporate carbon footprints.

On the policy side, the International Energy Agency (IEA, 2024)[9] stresses the value of carbon pricing and emissions tracking in helping countries like India integrate sustainability into financial decision-

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[3] Sharma, S., Prashar, A., & Sharma, R. (2025). ESG adoption and firm valuation in India: A multi-sector study. *Journal of Environmental Management, 310*, 113267.
[4] Securities and Exchange Board of India (SEBI). (2021). *Business responsibility and sustainability reporting framework (BRSR)*. Retrieved from https://www.sebi.gov.in
[5] United Nations Principles for Responsible Investment (UNPRI). (2023). *The role of ESG in sustainable investing*. Retrieved from https://www.unpri.org
[6] Nainggolan, R., Mishra, D., & Ghosh, A. (2025). Greenwashing risks and corporate transparency: The Indian perspective. *Indian Journal of Entrepreneurship*.
[7] European Commission. (2022). *EU taxonomy for sustainable activities: A regulatory framework for corporate ESG compliance*. Retrieved from https://ec.europa.eu
[8] Kumar, A., & Sahoo, C. (2025). Green HRM and associated sustainable practices: A case study from India's steel sector. *International Management Perspective*. Retrieved from https://www.researchgate.net/publication/388647573
[9] International Energy Agency (IEA). (2024). *India's energy outlook 2024: Net-zero pathways and policy recommendations*. Retrieved from https://www.iea.org

making. Additionally, technological innovation plays a growing role: Chhabra et al. (2024)[10] discuss how Industry 4.0 tools are being used to support decarbonization across sectors, reflecting a growing reliance on AI and digital solutions in sustainability management.

Finally, Gupta (2024)[11] examines the Indian power sector's efforts to balance economic growth with environmental goals. His findings show that reaching net-zero by 2070 will require a substantial increase in clean energy investments, particularly in industries with heavy emissions.

RESEARCH OBJECTIVES

1. To evaluate the relationship between ESG adoption and performance of Indian corporates, with a focus on how ESG integration influences profitability, market valuation, and investor confidence.
2. To examine the sector-specific strategies adopted by Indian companies to achieve net-zero emissions, including the implementation of Green HRM practices, renewable energy transitions, and carbon pricing mechanisms.
3. To identify the key regulatory challenges hindering ESG implementation and net-zero goals in India, and assess how corporate governance frameworks and government policy can address these barriers.

METHODOLOGY

This study adopts a qualitative, research design grounded in secondary data analysis to examine how Indian corporations implement ESG frameworks and pursue net-zero emission goals. It will synthesize relevant and recent academic findings, policy frameworks, and corporate sustainability initiatives to offer a contextual and sector-wise understanding of ESG impact and net-zero readiness in India.

- **Research Design and Approach**

  The research follows a non-experimental, descriptive approach, focusing on the systematic examination of existing studies rather than collecting primary data.

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[10] Chhabra, S., Rana, R. K., & Agarwala, N. (2024). *Naval sector and decarbonization using Industry 4.0*. Conference Proceedings of the Institute of Marine Engineering, Science & Technology. Retrieved from https://library.imarest.org/record/11167

[11] Gupta, K. (2024). Balancing economic growth and emission reductions: Policy trade-offs in India's power sector towards achieving the 2070 net-zero goal. *Journal for Global Business and Community, 15*(1), 88–102.

ISSN:3048-9792
Volume: 2
Issue: 3
May-June:2025

- **Data Sources**

  Secondary data were gathered from peer-reviewed journal articles, academic publications, industry white papers, and government policy reports. Sources were primarily drawn from reputable databases such as Scopus, Web of Science, Elsevier, MDPI, and ScienceDirect. Supplementary data were obtained from official documents and sustainability disclosures of Indian corporates, as well as from global bodies such as the UNFCCC, IEA, and the World Economic Forum.

SCOPE OF THE STUDY

The study focuses on Indian corporates, especially in sectors with significant environmental impact such as energy, steel, manufacturing, and IT. It relies on secondary data from peer-reviewed journals, corporate sustainability disclosures, and policy documents. The scope includes analyzing how companies are aligning ESG principles with India's 2070 net-zero goals, identifying institutional and financial barriers, and exploring practices like Green HRM, clean energy investments, and carbon management tools. The study also considers the interplay between regulatory support and corporate commitment in advancing India's green economic transformation.

FINDINGS AND DISCUSSION

1. ESG Integration and Its Influence on Corporate Performance

- **ESG and Financial Outcomes**

Several research studies indicate a strong link between ESG adoption and improved financial performance among Indian companies. Paridhi and Ritika (2025), writing in *Business Strategy Development*, observed that corporations with robust ESG systems witnessed notable gains—an average 7.3% rise in return on assets (ROA) and a 5.8% improvement in stock liquidity. Supporting this, Bang (2025), in *Vikalpa*, found that non-family businesses with structured ESG policies performed better in terms of market resilience and overall valuation compared to family-run enterprises.

- **ESG and Market Capitalization**

Empirical evidence from Sharma et al. (2025) in the *Journal of Environmental Management* shows that 350 Indian publicly listed companies which aligned their operations with Sustainable Development Goals (SDGs) and ESG norms experienced a 12% increase in market capitalization over a span of three years. However, Nainggolan et al. (2025) cautioned in the *Indian Journal of*

Entrepreneurship that ESG efforts without adequate governance transparency risk falling into greenwashing practices, which can ultimately erode investor trust.

- **ESG Disclosure in Emerging Markets**

A study by Dwibedi, Pahi, and Mishra (2025) in the *Indian Journal of Finance* highlights a significant lag in ESG transparency among Indian firms compared to global counterparts, with only 64% of companies publishing comprehensive ESG disclosures. The study emphasizes the critical role of regulatory enforcement in making ESG reporting more standardized and transparent across sectors.

2. Strategies for Achieving Net-Zero Emissions

- **Green HRM and Workforce Transformation**

Employee-centered sustainability practices, particularly Green Human Resource Management (GHRM), have emerged as effective tools in reducing corporate carbon footprints. Research by Kumar and Sahoo (2025), as shared on ResearchGate, revealed that steel companies incorporating structured environmental training for employees managed to cut carbon emissions by over 11% in just two years.

- **Renewable Energy Investments and Clean Transition**

Studies have pointed to significant policy-driven momentum in India's transition towards renewable energy. Narassimhan et al. (2024), in *Climate Policy*, projected that current initiatives would lead to emission stabilization by mid-century. Choudhury, Pratap, and Pohit (2024), writing in *The Indian Journal of Labour Economics*, projected that India's clean energy shift could generate approximately 4.5 million new jobs by 2050—albeit requiring an estimated $200 billion in infrastructure investment. Similarly, Gupta (2024), in the *Journal for Global Business and Community*, stressed that supporting economic growth while transitioning to net-zero demands a 40% surge in clean energy funding.

- **Carbon Pricing and Regulatory Barriers**

Despite global progress in climate pricing mechanisms, India lags in corporate-level adoption. According to Bharatam and Varadi (2024) in SSRN, only 32 Indian companies have embedded carbon pricing in their strategic planning, compared to the global average of 58%. Additionally, Sharma, Prashar, and Sharma (2025), in *The International Journal of Productivity and Performance Management*, used the Grey-DEMATEL technique to identify key hurdles to corporate decarbonization. Their findings highlight policy instability and limited tax-based incentives as major challenges impeding broader net-zero adoption in India.

GYANBODH
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Volume: 2
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CONCLUSION

As India transitions towards a green economy, the role of ESG becomes pivotal in steering corporate behavior toward long-term sustainability and environmental responsibility.

Several key insights emerge from the analysis:

1. **Strengthening ESG Regulations and Ensuring Corporate Accountability:** While awareness of ESG practices is gradually increasing among Indian corporations, the absence of uniform, robust regulatory systems continue to hinder consistent implementation. Compared to international frameworks such as the EU Taxonomy, India's ESG disclosure mechanisms remain disjointed. To address this, there is a pressing need for mandatory and harmonized reporting norms. Additionally, ensuring corporate accountability by mandating independent audits and penalizing misleading ESG claims will be essential in preserving investor confidence and public trust.
2. **Establishing Sector-Specific Decarbonization Pathways:** While sectors like steel and heavy manufacturing are gradually embracing sustainable practices, others such as logistics and construction still face infrastructural and financial barriers. Formulating industry-wise roadmaps with specific emission benchmarks can help bridge these gaps and promote equitable progress across all sectors.
3. **Expanding Accesses to Green Finance:** Achieving a green economy will depend heavily on mobilizing substantial financial resources, particularly for renewable energy and clean technologies. Large firms have started leveraging tools like internal carbon pricing and emissions trading, but smaller businesses often lack access to such capital. Strengthening financial instruments—such as green bonds, concessional loans, and ESG-linked credit—can help overcome this hurdle and support the widespread adoption of low-carbon solutions.
4. **Building Green Workforce Capacity and Technological Integration:** A successful transition to sustainability must be supported by a skilled and environmentally conscious workforce. Introducing green HR practices, offering training in ESG principles, and linking performance to sustainability outcomes are key steps in this direction. Moreover, integrating digital tools such as AI-based ESG monitoring systems can enhance corporate transparency and drive operational efficiency in sustainability efforts.
5. **Creating a Holistic and Inclusive Policy Framework:** To meet its 2070 net-zero target, India must establish a comprehensive and collaborative policy environment. This entails

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implementing carbon pricing regulations, providing incentives for clean energy adoption, and making emissions disclosures compulsory. Furthermore, fostering partnerships between government bodies and private firms will be essential in accelerating innovation and aligning corporate behavior with national sustainability priorities.

Therefore, as India charts its path to carbon neutrality, ESG adoption must evolve from a compliance-based approach to a strategic imperative embedded in corporate fabric. The transformation toward a low-carbon future depends not just on voluntary initiatives, but on coordinated action among businesses, regulators, financial institutions, and civil society. A policy-driven, well-financed, and workforce-supported ESG framework will be essential for Indian enterprises to lead responsibly in a rapidly greening global economy.

RECOMMENDATIONS AND ACTION PLAN

1. **Reinforce ESG Disclosure Standards**: Mandate ESG reporting aligned with global frameworks like GRI and EU Taxonomy. Ensure consistency across sectors and penalize misleading sustainability claims.
2. **Advance Corporate Net-Zero Pathways**: Encourage companies to commit to science-based emission reduction targets and adopt clean energy through financial incentive and clear policy.
3. **Expand Green Financing Options**: Promote sustainable investment through green bonds, ESG-linked loans, and targeted tax benefits to ease capital access for green projects.
4. **Develop a Skilled Green Workforce**: Integrate sustainability into corporate HR practices. Invest in employee training, leadership development, and innovation-driven green culture.
5. **Enhance Public-Private Collaboration**: Foster partnerships among corporations, NGOs, and government bodies to accelerate clean energy adoption and ecosystem restoration.

Source: Drawn by Researcher

For a comprehensive ESG action plan, the integration of ESG into academic curricula is placed at its foundation to cultivate future generations which are environmentally and socially responsible professionals. Building on this base, the plan emphasizes regulatory reforms, corporate net-zero initiatives, sustainable finance, and workforce development to drive India's transition toward a greener economy.

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GYANBODH
ISSN:3048-9792
Volume: 2
Issue: 3
May-June:2025

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