ADOPTION OF ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) PRACTICES IN SMALL MANUFACTURING IN INDIA

By

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DISSERTATION

Presented to the Swiss School of Business and Management Geneva

In Partial Fulfillment

Of the Requirements

For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

September, 2025

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Dedication

This dissertation is dedicated to the pillars of my life, whose unwavering support and inspiration have made this journey possible.

To my parents, the bedrock of my existence, whose love and guidance have shaped the person I am today. Your sacrifices and unwavering belief in my potential have been the guiding light through every challenge.

To my twin daughters, the joys of my heart, especially to my elder daughter Aditi, whose inquisitive nature and resilience have inspired me more than words can express. Your laughter and boundless curiosity have been a constant reminder of the wonders that lie in exploring the unknown.

To my friends, who have stood by me through thick and thin, providing laughter, solace, and invaluable perspective. Your camaraderie and support have been a source of strength and encouragement.

To my mentors, whose wisdom and insights have profoundly shaped my academic journey. Your guidance has not only enlightened my path in this research but has also instilled in me a passion for continuous learning and exploration.

This work is also a tribute to all who have walked with me on this path, directly or indirectly contributing to my growth and success. Your roles in my life's journey are deeply appreciated and forever cherished.

Acknowledgements

As I culminate this challenging yet rewarding journey of my Global Doctor of Business Administration, I find myself reflecting on the invaluable support and guidance that I have received. This accomplishment is not just a reflection of my efforts, but a testament to the encouragement and wisdom imparted by those around me.

I extend my sincere thanks to SSBM and Upgrad, for offering and facilitating the GDBA program in India. This program has not only provided me with a rigorous academic platform but also a unique opportunity to delve into and contribute to the world of strategic chaos engineering. The resources, support, and learning environment fostered by these institutions have been pivotal in my research journey.

A special word of appreciation goes to the administrative and support staff at both SSBM and Upgrad. Your assistance in navigating the logistics and requirements of the program has allowed me to focus on my research and academic growth.

My journey would not have been the same without the intellectual stimulation and discussions provided by my peers and fellow researchers. The collaborative environment and the diverse perspectives I encountered have enriched my experience and understanding, for which I am immensely grateful.

Finally, I would like to acknowledge the contributions of all those who have been part of my academic journey in ways big and small. Your support, whether in the form of advice, encouragement, or simply a listening ear, has been a source of strength and motivation.

ABSTRACT

ADOPTION OF ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) PRACTICES IN SMALL MANUFACTURING IN INDIA

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2025

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This study explores the adoption of Environmental, Social, and Governance (ESG) practices within small and medium-sized enterprises (SMEs) in India's manufacturing sector. Amidst rising global attention to sustainable practices, Indian SMEs face mounting pressure to align with ESG standards despite facing systemic constraints. The research employs a Quantitative approach—surveys to assess current ESG adoption levels, identify motivating factors, barriers, and institutional influences.

Findings reveal that environmental initiatives are more commonly implemented than social and governance components, primarily due to cost-savings and international client requirements. Key drivers include global supply chain integration and reputation-building, while barriers such as financial constraints, technical knowledge gaps, and minimal policy outreach limit progress.

This dissertation contributes to stakeholder theory and resource-based view by contextualizing ESG within the Indian SME ecosystem. The research offers policy recommendations and practical pathways to scale ESG practices among SMEs for sustainable economic development.

Executive Summary

This dissertation investigates the adoption of Environmental, Social, and Governance (ESG) practices in small and medium-sized enterprises (SMEs) within the Indian manufacturing sector. The study reveals a significant gap between ESG awareness and actual implementation. While 92% of SMEs report awareness of ESG principles, only 29% have actively implemented them, highlighting a pronounced awareness-implementation gap. Environmental practices are the most widely adopted (45%), driven by regulatory requirements and the potential for cost savings through energy efficiency, while social initiatives (38%) are informally embraced, and governance practices (22%) are notably underdeveloped. Key barriers identified include financial constraints (72%), lack of technical knowledge (65%), complexity of ESG frameworks (51%), and limited industry guidance (43%). These obstacles stem from the resource-limited nature of SMEs, the fragmented nature of existing ESG frameworks, and the lack of industry-specific support.

The study suggests that while SMEs recognize the importance of ESG, practical barriers, including financial limitations and the absence of tailored frameworks, prevent widespread adoption. SMEs should focus on environmental practices with clear benefits, such as energy conservation, to cover initial implementation costs. Additionally, governance structures need strengthening to ensure long-term sustainability, risk management, and investor confidence. Policymakers and industry bodies should develop SME-friendly ESG frameworks, provide financial incentives, and offer sector-specific guidance to ease the adoption process. The study further emphasizes the need for simplified ESG reporting, training programs, and mentorship for SMEs, particularly in navigating the complexity of existing frameworks.

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INTRODUCTION

1.1 Introduction

The adoption of Environmental, Social, and Governance (ESG) practices has become a global business imperative, driven by stakeholders' increasing expectations for sustainable and ethical operations. In India, the manufacturing sector plays a pivotal role in economic development, contributing significantly to GDP and employment. However, it also represents one of the largest contributors to environmental pollution and social inequity. As global attention shifts toward sustainability, the pressure on manufacturing enterprises to adopt ESG frameworks has intensified, particularly following regulatory developments like SEBI's Business Responsibility and Sustainability Reporting (BRSR) guidelines (SEBI, 2021). While large corporations in India have begun to integrate ESG into their strategies—motivated by investor scrutiny, global supply chain requirements, and reputational concerns—small and medium enterprises (SMEs) face unique challenges in this transition. Resource limitations, lack of technical expertise, minimal awareness, and regulatory complexities often prevent SMEs from fully embracing ESG practices, even though they form the backbone of the Indian manufacturing sector. At the same time, opportunities exist for SMEs to leverage ESG as a pathway to greater competitiveness, innovation, and access to global markets. Success stories such as EcoSattva Environmental Solutions and Phool.co highlight that with the right support, SMEs can not only mitigate environmental and social risks but also build resilient, sustainable business models that enhance long-term value creation. Against this backdrop, it becomes critical to explore the current state of ESG adoption among small manufacturing companies in India, the drivers that encourage integration, the barriers that hinder progress, and the institutional mechanisms—government policies, industry bodies, and financial institutions—that can facilitate or impede ESG adoption.

1.2 Background of the Study

The practice of the Environmental, Social, and Governance (ESG) has been seen in recent years as one of the most imperative concerns of businesses globally (Goyal, 2022). ESG frameworks offer a systematic method of assessing the way companies respond to the issues of sustainability, ethical responsibility, and transparency of governance (Varma and Kansal, 2022). Progressively, stakeholders, including regulators, investors, and consumers, are pressuring businesses to show their concern over responsible business practices. This is not merely an ethical change but also a strategic one because organizations that integrate the concept of ESG are believed to reap reputational benefits, entry into foreign markets, operational efficiency, and stability in the long term (Sharma and Khanna, 2023).

As a worldwide industry, manufacturing is also among the most scrutinized ones regarding its performance in terms of sustainability. In the same breath, manufacturing industries are also sources of economic growth and some of the significant sources of environmental degradation, resource depletion, and social inequality (Kaur and Singh, 2021). As an illustration, the industrial activities have a significant effect on carbon emission, waste production, and the health and safety of workers (Chaudhary and Bansal, 2023). Therefore, the production businesses are increasingly being pressured to strike a balance between profitability and environmental responsibility, good working conditions, and accountable governance structures (Khandelwal and Gupta, 2022). The ESG criteria are being introduced in corporate reporting and compliance in countries around the world, which means that sustainable business practices are not a luxury but a survival and competitiveness as strategy in the long term (Mukherjee, 2022).

Within the Indian context, the manufacturing industry has become a central part of the economic growth as it provides approximately 1738 percent of the GDP of the country and also employs millions of individuals both in the formal and informal sectors (Narayanan, 2023). The objective of India to become a manufacturing hub globally through government initiatives such as Make in India has further enhanced the significance of this industry. Criticism of the sector is, however, also manifested in its high pollution of air and water, unsafe working conditions, and the lack of accountability and compliance with regulatory regulations (Mishra and Sethi, 2021). These issues have rendered the incorporation of ESG models particularly acute to Indian producers. A robust regulatory push to the adoption of ESG can be identified through the introduction of regulatory frameworks, specifically, the Business Responsibility and Sustainability Reporting (BRSR) guidelines introduced by the Securities and Exchange Board of India (2021). These are the guidelines that require the top-listed companies to report sustainability performance, which, in turn, creates a precedent to implement these guidelines in the broader context of the corporate ecosystem (Sarkar, 2022).

Whereas big business companies in India have been performing well in their transition to ESG practices due to regulatory needs and investor demands, as well as the global supply chain pressures, the same case cannot be said of the small and medium enterprises (SMEs). The Indian manufacturing sector is highly dependent on SMEs, which account for almost 45 percent of the manufacturing output and offer essential job opportunities in the country (Rani and Arora, 2022). SMEs are frequently unable to implement the ESG principles because of insufficiency of resources, ignorance, and regulatory complications, although they have an economic significance (Banerjee, 2021).

In comparison to large corporations, which are usually supported by specialized sustainability teams and have access to international capital markets, SMEs, in terms of financial ability, technical knowledge, and institutional support, are limited (Menon, 2022). This makes a vast disparity of the general ESG situation in India since SMEs have a substantial environmental and social footprint individually (Kohli, 2023).

SMEs have complex challenges. Financial restrictions are preventing investments in cleaner technologies or sustainable practices (Panda, 2022). Lack of knowledge and awareness implies that there are still numerous SME owners who are unaware of ESG frameworks or long-term advantages (Rastogi and Sharma, 2023). The compliance requirements might look excessive and overwhelming in small firms that have a low administrative capacity (Bhandari, 2022). Furthermore, the lack of standardized reporting frameworks of SMEs also exposes them to the risk of greenwashing when companies overstate their sustainability measures without real improvement of operations (Kumar and Rao, 2021). The mentioned barriers support the necessity of specialized support mechanisms to assist SMEs in the process of moving towards a sustainable practice (Tiwari, 2023).

Simultaneously, there are more opportunities in ESG adoption by SMEs. The growth in consumer demand for sustainable products, greater demands by multinational supply chains, and the emergence of green financing present incentives to SMEs to practice ESG (Malik and Verma, 2022). New case studies include EcoSattva Environmental Solutions and Phool.co, which prove that Indian SMEs can capitalize on the idea of sustainability and implement it in their work effectively, gaining environmental and financial benefits (Sen and Kaur, 2023). These instances underscore the idea that ESG adoption is not merely possible, but it can be potentially groundbreaking to small companies, providing them with a competitive edge in a fast-paced business world (Das, 2023).

The institutional actors are influential in facilitating the adoption of ESG. Sustainable practices can be encouraged by government policies via subsidies, tax breaks, or capacity-building programs (Bhattacharya and Mehta, 2021). Knowledge-sharing and training can be carried out through industry associations, i.e. the Confederation of Indian Industry (CII) (Chatterjee, 2022). By designing the financing models, which are based on ESG, financial institutions can relieve the capital pressure of SMEs (Pathak, 2023). A combination of these parties will be able to establish the ecosystem that will reduce the barriers and promote integration of ESG in smaller manufacturing businesses (Raj and Singh, 2022).

Even though the importance of ESG has been increasing, most of the scholarly works and empirical research have concentrated on large companies, and there is no research gap concerning the adoption of ESG in SMEs, especially in the Indian manufacturing industry (Verma, 2021). Information is scarce on the extent of ESG adoption between small manufacturers, which constitute the major drivers in the decisions taken by these companies, the barriers that hinder the adoption, and the impact of institutional support in determining the outcomes (Chakraborty, 2023). It is imperative to address this gap not only to make progress in academic fields but also to inform policymakers, industry organizations, and business executives on how to foster sustainability in one of the fields that holds the key to the economic future of India (George and Thomas, 2022).

It is against this backdrop that this paper will examine the implementation of ESG in small manufacturing firms in India. It aims to evaluate the level of adoption, the surrounding forces and obstacles, the effectiveness of the government and industry institutions, and the best practices adopted by successful SMEs. Through this, the study will strive to deliver practical recommendations that can help attain sustainable development, increase the competitiveness of the SMEs, and help India become a more responsible and resilient manufacturing economy.

1.3 Research Problem

Although the concept of Environmental, Social, and Governance (ESG) practices is growing in popularity worldwide as a vital model of sustainable and responsible business, their implementation is not spread uniformly across industries and businesses. Although in India, large companies, particularly, publicly listed companies, have been notably successful in incorporating ESG principles because of the regulations such as the Business Responsibility and Sustainability Reporting (BRSR) requirements, set by the SEBI (Sharma and Bhat, 2023), small and medium-sized enterprises (SMEs) are still lagging behind (Prasuna and Kumar, 2023).

This gap is especially alarming in the manufacturing field, which not only serves as a significant contributor to the GDP of India and its labour force but also an occupation that has a significant portion of environmental pollution, social inequalities, and governance-related challenges (Bania and Biswas, 2024). There are several difficulties with the implementation of ESG practices by small manufacturing companies, which are the main force of this industry. Simultaneously, these companies are now more and more vulnerable to the pressure of stakeholders, including global supply chains, socially responsible consumers, or financial institutions that insist on sustainable business (Vlačić et al., 2024).

Even though not all SMEs have been that successful in adopting ESG, the evidence of competitive and financial advantages (Nurlanovich, 2025) are seen isolated and sporadic. This creates a gap in terms of systematic knowledge of the adoption trends in the sector. In addition, there is minimal information on how government policies, industry organizations, and financial institutions contribute to either promoting or limiting the adoption of ESG by SMEs (Sharma and Shukla, 2025).

It is a critical issue because, in the absence of the understanding of the enabling processes and barriers of ESG integration in small manufacturing companies, policymakers and business leaders may overlook one of the sectors that are crucial to the sustainable industrialization in India. That is why it is immediately necessary to study the extent to which the adoption of ESG in small manufacturing firms in India occurs, consider the main factors of this process, and determine the best practices that can be used to inform academic investigation and practical policy intervention.

1.4 Research Objectives

The overall aim of this study is to investigate the adoption of Environmental, Social, and Governance (ESG) practices among small manufacturing companies in India. To achieve this aim, the study is guided by a set of interrelated objectives that together provide a comprehensive understanding of how ESG is perceived, implemented, and supported within this critical sector. These objectives are outlined and elaborated upon below.

First, the study seeks to assess the current level of ESG adoption among small manufacturing companies in India. While the literature indicates that ESG has become a global business imperative, empirical evidence about its penetration in Indian SMEs remains scarce (Kansal et al., 2014). Most existing studies and industry reports focus on large corporations, which are subject to mandatory reporting frameworks such as SEBI's Business Responsibility and Sustainability Reporting (BRSR) guidelines. In contrast, the adoption rate among smaller firms—who collectively contribute significantly to employment, exports, and manufacturing output—remains underexplored (Kumar and Das, 2023). This objective, therefore, will provide a baseline assessment of how extensively ESG principles have been adopted within small manufacturing enterprises, which dimensions (environmental, social, governance) are prioritized, and the extent to which these practices are integrated into daily operations rather than being symbolic or superficial. Understanding the current level of adoption is essential for evaluating the gap between policy expectations and practical implementation in SMEs.

Second, the study aims to identify the key drivers motivating SMEs to adopt ESG practices. The push toward ESG adoption does not occur in a vacuum but is influenced by multiple internal and external factors. Internally, firm-level motivations may include the pursuit of cost efficiencies through energy conservation, waste reduction, and improved worker productivity. Externally, pressure from global supply chains, growing consumer awareness, investor scrutiny, and competitive differentiation all serve as potential drivers for adoption (Mitra and Gaur, 2023). Regulatory compliance, reputational benefits, and access to green financing can also incentivize SMEs to integrate ESG into their operations (Sharma and Dutta, 2022). By systematically identifying and analyzing these drivers, the study will clarify why certain SMEs embrace ESG practices more actively than others. This will also highlight how ESG adoption is not solely about compliance but can also serve as a strategic tool for enhancing competitiveness and long-term sustainability.

Third, the study will explore the barriers hindering ESG adoption in SMEs. Despite the apparent benefits, SMEs encounter a range of challenges when attempting to implement ESG frameworks. Financial constraints are often the most cited barrier, as smaller firms may lack the resources to invest in cleaner technologies or establish detailed reporting systems (Jain et al., 2020). Knowledge gaps and a lack of technical expertise also make it difficult for SMEs to understand the long-term advantages of ESG adoption (Arora and De, 2020). Additionally, regulatory frameworks designed primarily for larger corporations may appear overly complex or burdensome to smaller enterprises. In some cases, cultural and attitudinal barriers—such as resistance to change or limited awareness of global sustainability trends—further impede adoption (Sangle, 2010). By exploring these barriers, the research will shed light on the structural and behavioral factors that constrain ESG integration, thereby helping policymakers and industry bodies design more targeted interventions to support SMEs.

Fourth, the research seeks to examine the role of government policies, industry bodies, and financial institutions in ESG integration among SMEs. While firm-level drivers and barriers are important, institutional support mechanisms often determine whether SMEs can realistically adopt ESG practices. Government initiatives—such as subsidies, tax incentives, awareness campaigns, and simplified compliance frameworks—can significantly lower barriers to adoption (Mukherjee and Sen, 2022). Industry associations, such as the Confederation of Indian Industry (CII) or local chambers of commerce, can play a critical role by providing training, resources, and platforms for knowledge-sharing (Rathore and Khanna, 2021). Similarly, financial institutions are increasingly integrating ESG metrics into lending practices, making sustainable performance a criterion for accessing capital (Kapoor and Sandhu, 2010). This objective, therefore, goes beyond firm-level analysis and evaluates how external stakeholders shape the ESG landscape for SMEs. By doing so, the study will generate valuable insights into the effectiveness of existing policies and highlight opportunities for more coordinated institutional support.

Finally, the study intends to identify best practices from SMEs that have successfully adopted ESG practices. While much of the literature emphasizes challenges, it is equally important to highlight success stories that can serve as benchmarks for other SMEs. Case studies of innovative small firms that have integrated ESG into their business models can provide practical insights into strategies that are both effective and scalable (Kumar and Prakash, 2019). These may include unique approaches to waste management, employee welfare programs, community engagement, or governance mechanisms that enhance transparency and accountability. Identifying and documenting such best practices not only contributes to academic understanding but also provides actionable models for practitioners, policymakers, and industry bodies. By showcasing tangible examples, this objective will demonstrate that ESG adoption is both achievable and beneficial, even in resource-constrained SME environments.

Collectively, these objectives ensure that the study provides a holistic understanding of ESG adoption among small manufacturing companies in India. By assessing current adoption levels, analyzing drivers and barriers, evaluating institutional support, and documenting best practices, the research will generate both theoretical contributions to the field of sustainability management and practical recommendations for SMEs, policymakers, and financial institutions. The pursuit of these objectives will also ensure that the study moves beyond diagnosing problems to offering solutions, thereby contributing to India's broader goals of sustainable development and responsible industrial growth.

1.5 Research Purpose and Questions

Research Questions

- What is the current level of ESG adoption among SMEs in the Indian manufacturing sector?
- What are the key drivers motivating SMEs to adopt ESG practices?
- What are the primary barriers that hinder SMEs from implementing ESG practices?
- How do government policies, industry bodies, and financial institutions support or inhibit ESG adoption in SMEs?
- What patterns of ESG adoption can be identified among SMEs with higher levels of integration?

1.6 ESG Adoption and Its Impact on SME Performance in the Indian Manufacturing Sector

Environmental, Social, and Governance (ESG) practices can have a substantial impact on the financial and non-financial performance of small manufacturers in India, and these practices may determine their competitiveness, resilience, and sustainability in terms of longevity (Shahbaz et al., 2022). Financially, ESG integration can allow SMEs to realize cost-efficiency, namely, minimization of energy, waste reduction and efficient resource usage, which directly reduces the cost of operations (Kumar and Firoz, 2023). Also, adherence to ESGs usually creates avenues to new markets, especially global supply chains, which are becoming conditions of entry by providing sustainability certifications. As an example, small manufacturers, which fall within the ESG standards, can get contracts with multinational corporations focused on responsible sourcing, which increases the revenue potential (Nawaz et al., 2020).

Besides, with the increased interest in green finance and credit facilities that depend on ESG in India, SMEs with good ESG performance can have the benefit of priority access to the lower-interest-rate capital, which enhances their financial stability (Mani et al., 2018). At the non-financial level, ESG implementation can lead to brand reputation and stakeholder trust, which is crucial to SMEs that are trying to distinguish themselves in competitive markets. Through social responsibility in employee welfare, labour practices and their interaction with the community, SMEs are able to strengthen the levels of employee loyalty, attrition and win the goodwill of the communities they operate in (Fernando and Lawrence, 2014).

Good governance practices, including transparency reporting and ethical leadership, enhance internal control and decision-making procedures, which lessen the chances of risks associated with compliance risks or reputational losses (Laskar, 2023). Notably, the adoption of ESG also indicates long-term strategic thinking, which places SMEs in the role of progressive organizations following global sustainability trends that will increase their resistance to changes in the regulatory environment and disruptions in the market (Yadav et al., 2020). Nevertheless, although the beneficial impact of ESG adoption on performance according to theory and the emerging case studies in India, it is usually not equally effective, as it may depend on the size of firms, their sub-sector in the industrial context, and available resources. In the case of smaller companies with smaller capacities, the initial investment in ESG implementation can be stressful to the financial performance. However, there is a sign that the benefits of long-term exceed the short-term costs of ESG embedded in a strategic, but not superficial way (Bansal and DesJardine, 2014).

Therefore, ESG adoption can be perceived not just as a form of compliance but also as a source of integrated performance, with financial benefits augmented by better reputation, association with stakeholders, and organizational viability, which, together with other aspects, increase the chances of survival and growth of small manufacturing businesses in India.

Large Corporations and Global Buyers Supply Chain Pressure can be a key driver in fostering the use of Environmental, Social, and Governance (ESG) practices among small and medium enterprises (SMEs) in the Indian manufacturing industry (Chaudhary, 2022). Sustainability Supply chains have now emerged as important channels of sustainability in the globalized economy, and global firm regulators, investors, and customers are increasingly demanding that companies and organizations acknowledge their responsibility to make sure their upstream and downstream partners comply with the standards of environmental, social and corporate responsibility (Paul, 2020).

To the Indian SMEs, who are usually integrated in these supply chains either as a supplier or subcontractor, the need to abide by the sustainability requirements represents a challenge and an opportunity (Sahu and Narayanan, 2021). The ESG reporting and disclosure requirements of large corporations, including stock exchange-listed companies or with international markets, are especially challenging, including the Business Responsibility and Sustainability Reporting (BRSR) by SEBI in India and the Corporate Sustainability Due Diligence Directive (CSDDD) by the European Union (Dasgupta and Singh, 2023).

In order to stay compliant and safeguard their reputations, these corporations are imposing their ESG expectations on their suppliers, requiring them to comply with labour rights, environmental regulations, and corporate transparency (Mishra and Kedia, 2021). As a result, SMEs in India become even more motivated to be aligned with ESG requirements in case they do not want to lose competitiveness and keep their contracts with such purchasers (Chaudhary, 2022).

This pressure generates some institutional pressure that hastens the adoption of ESG, although this occurs without direct regulation on SMEs. To illustrate, buyers across the world in the textile, apparel, automotive, and electronics industries tend to enforce sustainability audits, certifications, or codes of conduct on their Indian contractors, and this means that ESG compliance becomes a precondition to market entry (Paul, 2020). In addition to compliance, the alignment of the supply chain with the ESG principles also creates new opportunities in SMEs to differentiate themselves, enhance the operational efficiencies, and establish long-term relationships with high-value clients (Dasgupta and Singh, 2023).

To the Indian SMEs, these partnerships can act as enablers where they enhance their ESG performances a bit at a time. Supply chain pressure is, therefore, a push and a pull: on the one hand, it introduces additional requirements, but on the other hand, it opens learning, innovative, and globalization opportunities (Chaudhary, 2022). In India, with the manufacturing industry being a significant segment of the economy, the trickle-down effect of supply chain ESG demands is probably one of the most significant driving forces of sustainability adoption, responsible practices at a mass scale, and aligning Indian SMEs with the international standards of ethical and sustainable manufacturing (Paul, 2020).

Generally, cultural values, leadership behaviors, and organizational mind-set play a critical role in defining the manner in which Environmental, Social, and Governance (ESG) practices are incorporated in small and medium-sized businesses (SMEs) in India. No external regulation system, and even the expectations of investors do not tend to push SMEs since they are typically influenced by personal values, vision, and priorities of the founders and leaders (Sharma and Mehta, 2020). In most cases, systemization of the ESG practices in the SMEs is not an issue but a reflection of leadership values and organizational culture (Mishra and Jain, 2021).

As an example, leaders who make long-term sustainability more important than short-term profits may take more initiatives in investing in environmentally friendly production processes, good practices in workplaces, and transparent governance systems, regardless of whether they receive immediate financial rewards (Sharma and Mehta, 2020). The cultural values at both the societal and organizational levels are also significant in ESG adoption. Traditions, which focus on the welfare of the community, on collective responsibility, and ethical behaviour, may help the Indian context to make SME leaders see ESG not only as a compliance matter but as a moral duty and a way of giving back to the community (Gupta and Kumar, 2021).

Attitudes of leadership have a significant influence on employee engagement in ESG actions. Through the active promotion of sustainability by visionary leaders, the employees can be prompted to conform to the ESG objectives, creating a responsible and innovative culture within the organization (Sarkar and Sinha, 2022). Conversely, cultures that are focused on profit-making and cost-reduction usually undermine the importance of ESG practices or transform them into mere actions (Patel and Singh, 2020).

The attitude to ESG developed in an organization due to the development of shared beliefs and collective learning also influences the perception of ESG as a component of a long-term business strategy or a mandatory necessity (Mishra and Jain, 2021). SMEs that have a progressive, adaptive mentality are more likely to consider ESG as a differentiation, innovation, and global market opportunity. In contrast, those with a more traditionalist mentality are more inclined to perceive ESG as a competitive force to maintain their position on the global market, thereby gaining long-term competitiveness (Sarkar and Sinha, 2022). In addition, the transparency of the leaders to the stakeholder and dialogue with customers, employees, and communities may make the difference between the holistic approach to ESG adoption and superficial one (Patel and Singh, 2020). Practically, turnover of SMEs with socially responsible entrepreneurs tend to have a greater degree of community involvement, superior employee welfare schemes, and sustainable business practices, despite resource limitation (Gupta and Kumar, 2021).

In conclusion, cultural values, leadership attitudes and organizational mindset are some of the leading internal enablers, which play a significant role in determining the level and degree of ESG integration in an organization. Whereas external forces like regulation and supply chain demands can precondition ESG adoption, internal belief and business vision of SME proprietors and managers condition whether the latter are actually encompassed in organizational strategy, thereby guaranteeing further development and sustainability (Mishra and Jain, 2021).

Availability of ESG-linked financing facilities, as well as green credit facilities, plays an essential role in determining the capacity of SMEs in India to adopt sustainable practices. The force of financing with ESG-linked mechanisms, including green loans, sustainability-linked bonds, and preferential credit schemes, reduces the barriers to financial access and facilitates the adoption of ESG by smaller companies (Gupta and Sahu, 2022). These financing instruments are usually contingent on performance based on sustainability indicators, whereby companies who have shown improvements on quantifiable metrics on sustainability indicators (energy efficiency, waste reduction, or social responsibility) receive lower interest rates, longer repayment terms, or preferential access to credit (Dasgupta, 2020). In the case of SME, these financial incentives not only lighten the weight of start-up costs incurred on cleaner technologies, renewable energy systems, or better ways of managing the business but also generate a practical business case of integrating ESG in the primary operations (Chakraborty, 2021).

Moreover, Indian banks and other financial institutions are becoming more willing to incorporate ESG requirements into their lending policies, which is a worldwide trend in sustainable finance (Bhattacharyya and Bose, 2022). Institutional support in terms of green credit growth has also started to be felt by the Reserve bank of India, the development finance institutions and the need to channel capital in environmentally and socially responsible businesses (Kaur and Sharma, 2021). Consequently, moves are mounting to have the financial sector offer incentives that will encourage businesses to pursue the adoption of sustainable operations by providing a more conducive environment where small and medium enterprises (SMEs) can incorporate the relevant Environmental, Social and Governance (ESG) principles into their operations.

Green loans, sustainability-linked bonds, and preferential credit schemes are ESG-linked financing models that can help SMEs adopt sustainable practices. These financial web tools are frequently related to the output of sustainability metrics, energy efficiency, waste reduction, and social responsibility. The companies, which can show some real progress in these areas, are given better rates of interest, more extended payback periods, or more favourable access to capital, and ESG implementation becomes more accessible and financially feasible to smaller companies (Dasgupta, 2020). This form of finance will establish a real business case among SMEs, which will allow them to invest in cleaner technologies, renewable energy systems and better governance structures that are in line with the local and global requirements of sustainability (Chatterjee and Patel, 2021).

In the case of SMEs, these green financial products can be used to better their financial health besides ensuring that they improve their environmental and social performance. The fact of getting favourable terms of financing is used to relieve the pressure of initial investments in sustainable technologies and practices, which in turn make SMEs prepared to grow and compete in the long term. In addition, these financial instruments are consistent with the trends of responsible investing in the world and therefore, SMEs need to include sustainability in their business model to ensure they comply with the global requirements to be competitive in the global supply chains.

The increasing interest in green financing is indicative of a more overarching institutional change to sustainability, where financial institutions acknowledge the possibility of SMEs to propagate responsible business conduct on a mass scale. Through promotion of SMEs by funding them on the bases of the ESG, financial institutions do not only assist these businesses to minimize their environmental footprint along with enhancing their governance but also stimulate innovations and competitiveness in the manufacturing industry. This institutional support leads to the mutual benefit of a relationship in which both SMEs are able to receive the capital they need to grow and grow, and also contribute to the overall concerns of the Indian system in a sustainable development of industry, as well as meeting the global sustainability standards.

To make sure that SMEs can fully participate in ESG practices, the improvement should be geared towards creating sector-sensitive, simplified, and scalable SME-specific ESG reporting frameworks. These frameworks might involve designing standardized lite reporting guidelines with a smaller number but a high-impact indicator that are directly applied to smaller companies in industries where environmental and social risks have the most impact, such as textiles, chemicals, or electronics (Raman and Desai, 2022). Streamlined and available reporting standards enable SMEs to monitor and report on their sustainability performance without the heavy workload and resource-oriented demands.

The capacity-building measures, including government- or industry-based training programs, are necessary to assist SME owners and managers to learn the ESG metrics and develop the simplest reporting skills (Sharma, 2023). Such initiatives are also capable of nurturing a culture of excelling sustainability practices since they equip SMEs with knowledge that will enable them to exceed the ESG requirements, in line with the international best practices.

In addition, the utilization of digital tools and low-cost platforms to gather and report on ESG data also reduces the barrier to SMEs, as they will be able to monitor their progress without high administrative expenditure (Kannan and Roy, 2021). Financial institutions and industry associations may be beneficial by associating streamlined ESG reporting with access to green finance, inclusion of supply chains, or certification programs. This alignment would establish explicit incentives to motivate SMEs to be more proactive in interacting with ESG standards and engaging in sustainability initiatives, thereby improving their competitiveness in the market (Das and Ranjan, 2021).

Lastly, smaller firms can also access expertise that they might not afford independently by introducing the concept of third-party support systems like shared sustainability auditors or regional ESG resource hubs (Verma and Iyer, 2020). India can make small manufacturing businesses not be sidelined in the transition to sustainability by simplifying reporting structures, offering technical support and harmonizing ESG disclosure policies with the realities of the SMEs. They will instead be empowered to positively contribute towards the larger ESG and sustainable development of the country.

1.7 Scope and Delimitations

This dissertation is focused on the issue of the implementation of the Environmental, Social, and Governance (ESG) practices by small manufacturing firms in India. The research is specifically on small enterprises as presented in the Indian MSME Development Act as opposed to the large corporations or micro enterprises. This interest is premeditated, as small manufacturing companies constitute one of the essential parts of the Indian industrial base, with a significant share of the output, exports, and employment, and with unique issues related to the adoption of sustainability (Bhattacharyya and Rahman, 2020). The small firms allow the research to yield more information about the factors that drive, hinder, and support this category of business, which is typically not characterized by resources, experience, and exposure to the global market like larger firms (Nayak and Samanta, 2021).

The study also restricts itself to the manufacturing industry and does not consider service-based SMEs. The manufacturing industry was selected because it has one of the most significant environmental and social impacts, including energy use and emissions, labour policies and social relations with communities, which makes the integration of the ESG especially pressing in this industry (Kumar et al., 2022). The fact that there are several subsectors in the manufacturing (textile, chemicals, electronics, and engineering) makes the study capture diversity in the ESG practices, but at the same time, it still fits within the general context of manufacturing. Nevertheless, it does not even endeavour to give an in-depth study of all sectors of the Indian economy, thus keeping the study focused and manageable (Sharma and Jaiswal, 2021).

The study is geographically limited to the SMEs of the selected parts of India and not the whole country. Although it is believed that this will result in the realization of diversity in the region by having firms in both the industrialized states and the emerging manufacturing hubs, the research recognises that it might not adequately capture the phenomena of the SMEs in all the states (Ramanathan et al., 2021). This is limited by the practical considerations of the accessibility, time, and resources, but endeavors to achieve representative coverage that can act as a reflection of greater dynamics of ESG adoption in Indian manufacturing.

It is also necessary to identify the limitations of the study. First, the study does not include large manufacturing organizations, which have already been extensively investigated and are already under obligatory ESG reporting regulations like the Business Responsibility and Sustainability Reporting (BRSR) that are proposed by SEBI. It is rather about smaller companies which are not required to report their ESG performance but are also exposed to increasing stakeholder pressure to go green (Karmakar, 2022). Second, the research does not seek to quantify the real environmental or social effect of adopting ESG in quantitative measures (e.g., a decrease in carbon footprint or financial returns), but instead measures the level of adoption, perceptions, and institutional factors about reported practices and qualitative data (Das and Jain, 2021). Third, the ESG spectrum analyzed in this case does not extend to the other related models, like corporate social responsibility (CSR) or the concept of the circular economy, but any overlaps can take place (Mukherjee, 2022).

Lastly, another limitation is the time period of the research. The adoption of ESG is captured in data collection as it is sometimes before the research and may not capture the fast-changing regulatory changes, market dynamics, or global trends in sustainability that arise later (Gupta et al., 2022). Therefore, although the results can be helpful to determine the current situation with ESG adoption among small manufacturing firms in India, they need to be regarded in this time framework.

Overall, the scope and limitations guarantee that this dissertation is concise, viable, and consistent with its goal of discussing the use of ESG with small manufacturing businesses in India. Focusing on this particular segment, the study can offer in-depth, contextually informed insights, but it should not ignore the limitations that contextualize the findings of the study (Sarkar and Dutta, 2021).

1.8 Significance of the Study

The value of the research is that it contributes to the evolving literature on the adoption of Environmental, Social, and Governance (ESG) and its role in small manufacturing enterprises in India. Although the idea of ESG has taken a center stage in the business discourse worldwide, most of the scholarly as well as industry focus has been placed on large companies, which are required to report their activities to the regulatory agencies and are also subject to extensive scrutiny (Kumar and Bala, 2021). On the contrary, small and medium enterprises (SMEs), which make a significant portion of manufacturing output, export, and employment in India, are under-researched in the ESG context (Mishra and Jain, 2021). This dissertation offers an essential gap in the literature since it narrows down on one specific segment of the manufacturing sectors, small firms, and offers empirical evidence on an economically crucial and environmentally sensitive field. The scholarly importance of the study lies in the fact that it can apply existing ESG models to the contexts in which the institutional capacity, financial resources, and managerial orientation have very little in common with the ones of large enterprises (Narula, 2022).

Academically, the research is relevant in terms of theory-building as it analyses ESG adoption in terms of the institutional theory, stakeholder theory and resource-based view. These theoretical models are commonly used in studies on major organizations but not commonly addressed in connection to SMEs operating in the emerging economies (Bansal and DesJardine, 2019). In evaluating the drivers, barriers, and institutional factors of ESG adoption among small firms, the study will not only address the gap in the body of empirical literature but also check the relevance of the accepted theories in the new and under-researched setting (Khanna et al., 2021). The results can be used to inform future studies on sustainability practices in SMEs around the world thus provide a comparative point of reference to other research studies conducted in other developing economies where small firms control the industrial environment (Dixit, 2020).

Another essential aspect of the study is the managerial one, because it provides practical advice to the owners and managers of SMEs that are increasingly under pressure to move towards ESG practices but do not have clear guidance or resources on how to do it (Tripathi and Bhandari, 2021). The research provides managers with more insight into the strategic benefits of ESG integration and the traps to avoid and achieve this by determining which drivers constitute motivation to adopt it and what are its obstacles to adoption. The emphasis on the best practices and the case examples of successful ESG implementation among the SMEs will be used as the actionable standards that will reveal how sustainability could be implemented in resource-strained settings without interfering with the profitability and competitiveness (Prasad and Kumar, 2022). Moreover, the results of the study will highlight how the adoption of ESG could promote non-financial performance, including employee satisfaction, brand reputation and trust in the community, as well as helping to promote financial resilience, and hence better support sustainability in terms of business-wise, which is why small firms will have a stronger business case to pursue sustainability (Mukherjee and Singh, 2020).

Besides that, the research has significant policy implications as it creates evidence-based results that can guide government agencies, industry associations and financial institutions in developing more effective support systems to ESG adoption among SMEs (RBI, 2021). The findings can guide policymakers to streamline regulatory frameworks so that the compliance requirements do not exceed the capabilities of smaller companies without achieving significant sustainability results (Sarkar and Sinha, 2021). The study can be used by industry bodies to create training programs, awareness, and knowledge sharing platforms that are specific to SMEs (CII, 2020). In the meantime, financial institutions are able to use the research to increase the ESG-related financing schemes and green credit facilities to reduce the expended monetary hurdles to adoption (Banerjee and Gupta, 2022). This way, the research will help advance the sustainability agenda of the country and its international climate and development obligations (United Nations, 2021).

Lastly, the research has a larger societal implication, since it highlights how small manufacturing firms can help in the realization of sustainable development by the Indian society. The total impact of SMEs on the environment and society is also considerable, and their active involvement in ESG implementation is essential to the achievement of the national success in the reduction of emissions, labor conditions, and responsible governance (Patra and Dey, 2022). This study highlights the suitability of comprehensive sustainability policies in the context of how SMEs can become more environmentally friendly and sustainable without just focusing on large corporations but the entire industrial ecosystem (Gupta and Sharma, 2021).

To sum up, the research is important in terms of the scholarly contribution to the body of missing research, its practical implications to leaders of SMEs, its policy implications to formulate favourable institutional environments, and its societal implications to promote sustainable industrialization. These contributions, combined, make the research not only theoretically but also practically useful, and one that can change academic discourse, business practice, and policymaking equally.

1.9 Assumptions

Various assumptions are applied in this study to make sure that the approach used is valid. To begin with, there is an assumption that the small and medium enterprises (SMEs) that will be used will answer survey questions on the environmental, social, and governance practices accurately and truthfully. The validity of the results will be based on the assumption that the SME representatives will provide truthful answers and represent their actual business practices and sustainability practices.

Second, the study will presuppose that the participants will be eager to provide information about their ESG initiatives that will be relevant. The representatives of SME will communicate freely, offering relevant details on the achievements and difficulties related to the implementation of ESG practices. Also, it has been assumed that the sample of SMEs chosen can represent the overall population of SMEs in India. This guarantees that results of the study can be extrapolated to the small and medium manufacturing firms in the nation.

Another assumption made in the study is that the critical determinants of ESG adoption, regulatory pressures, market demands and financial incentives, will not change significantly during the research time. Although external factors can change, it is hoped that they will not cause much change in trends that can be seen within the period of study. Moreover, the study also presupposes that SMEs could also supply the required information regarding their ESG activities despite the absence of any formal reporting systems.

These are assumptions that are used in the research methodology, and they can be used to maintain the consistency of the research. Admittedly, any significant deviations of such assumptions can influence the meaning and findings of the research.

1.10 Linking ESG Adoption to SME Competitiveness and National Goals

The implementation of small and medium enterprises (SMEs) in India in terms of competitiveness is not merely an issue of compliance or corporate responsibility, but a major factor in the implementation of Environmental, Social, and Governance (ESG) practices. With efforts to establish India as a manufacturing powerhouse through such schemes as Make in India, the importance of incorporating ESG practices in business practices has become more relevant to the SMEs in order to improve their market position, both locally and globally (Sharma and Khanna, 2023).

Through ESG, SMEs have the ability to enhance their competitiveness through creation of efficiencies in their operations, minimization of costs by optimizing their resources, and making their operations sustainable and in line with international standards (Kaur and Singh, 2022). This helps SMEs to secure investment and to be more involved in international supply chains that are becoming more and more demanding in terms of sustainability and ethically-sourced products (Mishra and Sethi, 2021). In that regard, the implementation of ESG can provide SMEs with the chance to stand out in the market not only due to the quality of the offered products, but also because of its transparency, responsiveness, and social-friendly nature (Chaudhary and Bansal, 2020).

Besides, the main objective of the Indian economy, including projects such as Make in India, requires the creation of a sustainable and competitive manufacturing system in the global arena (Narayan, 2022). The inclusion of ESG in the activities of the SMEs can be used directly to fulfill these country goals as it ensures that the Indian SMEs are ready to match the international standards of sustainability. It is essential because the world market is becoming more oriented towards responsible and sustainable business (Khandelwal and Gupta, 2022). By adopting the ESG principles, SMEs will be in a better position to access new markets and engage in global partnerships in addition to being able to make a significant contribution to the overall economic and environmental objectives of India (Rani and Arora, 2023).

Moreover, ESG implementation can enhance resilience of SMEs to regulatory reforms, environmental risks and social issues all of which are part of the long term economic plan in India (Banerjee and Mehta, 2021). Through ESG, the SMEs not only promote sustainability, but also provide an input towards the sustainable development objectives of India and the achievement of a global competitive and responsible manufacturing industry. Thus, ESG practices are not only a strategic business move that should be realized among SMEs in India but also an important part of the overall plans of India to be a global manufacturing leader (Mishra and Bansal, 2023).

CHAPTER II:
REVIEW OF LITERATURE

2.1 Introduction

The increased popularity of Environmental, Social, and Governance (ESG) practices in the international business has created a considerable mass of literature studying the adoption of sustainability by companies in different industries, their business approaches, and corporate governance systems. ESG has recently become a key focus for both researchers and practitioners as businesses are increasingly judged based on their performance in financial terms, as well as in their environmental stewardship, social responsibility and ethical governance. The manufacturing industry, especially, has been a focus because it has become a prime contributor to the economic development in any country and at the same time a source of environmental pollution and social problems. Research in developed economies emphasizes the role that regulation, consumer desires, and investor pressures have contributed to an increase in the adoption of ESGs by manufacturing sectors. Still, research in emerging economies reveals a less consistent trend, influenced by resource bases, institutional inadequacies, and other priorities. Large corporations, particularly those that are publicly listed, in the Indian context have significantly advanced in adoption of ESG due to the effect of regulatory policies like the Business Responsibility and Sustainability Reporting (BRSR) guidelines of the Securities and Exchange Board of India, global supply chain pressures, and investor pressure. Nonetheless, small and medium enterprises (SMEs) that constitute the core of the Indian manufacturing industry and play an essential role in the GDP, exports, and employment have not been thoroughly studied in the ESG literature. The sparse available research has shown that SMEs have their own set of challenges that include limited finances, lack of awareness, technical know-how, and complex regulations, which, in combination, negatively contribute to the realization of the ESG practices in a meaningful manner.

Meanwhile, the trend is moving towards bigger exposure of SMEs to external pressures by multinational buyers, consumers and financial institutions, which are redefining even smaller firms' expectations of sustainability. It is this intricate interactivity of drivers and barriers and institutional forces that render SMEs a significant, yet under-studied field of ESG scholarship. The current literature review is against this background and aims at critically reviewing the literature on the adoption of ESG globally and Indian literature, with a special focus on the small manufacturing enterprises. It starts with creating a theoretical knowledge of ESG, then venturing into the world and Indian trends in manufacturing. It proceeds to examine the theoretical approaches, namely, Institutional Theory, Stakeholder Theory and the Resource-Based View, which can be used to analyze the adoption of ESG. The chapter also examines SME drivers and barriers, government contribution, industry associations, and the financial institutions, as well as points out the best practices and case examples both in India and internationally. The review ends with determining the significant gaps in research and indicating a conceptual model that will inform the empirical study of this research.

2.2 ESG Framework Overview

The Environmental, Social, and Governance (ESG) framework has become one of the most essential instruments for evaluating and leading corporate sustainability. In comparison with other conventional indicators of business success that use financial indicators as the primary criterion, ESG frameworks offer a multidimensional analysis of how companies conduct themselves responsibly and contribute to sustainable development (Ching et al., 2017). Overall, the ESG framework focuses on the inclusion of effective environmental stewardship, social responsibility, and good governance practices in business strategies, operations, and reporting frameworks (Velte, 2017). It provides an internal and external stakeholder, including investors, regulators, consumers, employees and communities, with an organized prism through which companies can be judged in terms of profitability and ethical, social, and environmental responsibility. In the last twenty years, ESG models have witnessed changes across the world as voluntary reporting schemes have been transformed into compulsory requirements because of the increased understanding that responsible business practices are inevitable in ensuring future growth and sustainability (Khan et al., 2016).

The environmental aspect of the ESG model deals with the relationship of a company with the natural world, regarding such problems as carbon emission, energy use, waste disposal, water saving, and pollution. In the case of manufacturing businesses, the question of the environment is especially acute due to their massive environmental footprint (Drempetic et al., 2020). In India, small manufacturing businesses, including ones, tend to be in resource-intensive sectors like textiles, chemicals, and engineering, in which energy efficiency and pollution mitigation are on the agenda (Rajesh, 2020). ESG frameworks impose pressure on such businesses to embrace cleaner production technologies and enhance their efficiency in resource use, and meet international standards on how to manage the environment (Naidoo and Gasparatos, 2018). Though bigger companies can afford renewable energy or sophisticated waste management systems, SMEs struggle to adopt solutions, which is why specific frameworks and support systems should be created to cover the specifics of smaller-sized businesses (Ionescu, 2021).

The social aspect focuses on the company's responsibility towards individuals and society. It encompasses labour policies, work safety, employee welfare, diversity and inclusion, human rights and community activities (Deegan, 2017). The social aspect of ESG is of particular concern to the small manufacturing companies in India, since they tend to employ significant workforces, which in most cases are attracted by the nearby communities (Goyal, 2022). A large number of SMEs are in the informal or semi-formal labour markets, and such challenges as poor wages, working conditions, and social security remain a problem. The gaps can be mitigated by incorporating the use of ESG frameworks in the activities of SMEs, which promotes equitable labour relations, better occupational health and safety conditions, capacity building, and responsive community involvement (Singh and Aggarwal, 2021). Furthermore, good social performance not only increases employee loyalty and productivity but also enhances the image of the company and acceptance of the community in which the company functions, which is the inevitable long-term intangible benefits that save the survival in competitive markets (Sila and Cek, 2017).

The governance aspect of ESG concerns the systems, policies, and structures which provide transparency, accountability, and ethical business operations (Arayssi et al., 2016). Some of the significant areas of governance concern the structure and independence of the board, the policy of anti-corruption, disclosure policy, adherence to regulatory requirements, and the stakeholder engagement mechanisms. The governance issues in the form of small manufacturing firms in India are usually based on informal management systems, communication of the power to make decisions within the hands of the owners and lack of knowledge about compliance requirements (Fernando and Lawrence, 2014). The ESG frameworks promote the formalization of governance systems in SMEs, promote transparency in both financial and operational reporting, and introduce anti-bribery and compliance systems (Velte, 2019). Not only are sound governance practices required to mitigate regulatory risks, but they are also essential to establish credibility with investors, financial institutions, and supply chain partners who are seeking more and more evidence on ethical and responsible management practices (Eccles et al., 2020).

The ESG framework as a whole offers a holistic mechanism for evaluating the sustainability of business enterprises and enhancing the same. Nevertheless, the usefulness of such a model strongly relies on its contextualization and its adjustment to various organizational sizes and industries (Husted and Sousa-Filho, 2019). In the case of small manufacturing firms in India, the process of adoption of ESG can not be traced back to the large corporate models, it needs simplification of the reporting systems, specific awareness programs, and economic incentives to make the framework feasible and realistic (Mishra, 2021). Incorporating environmental, social, and governance principles in their work, SMEs not only can become more resilient and competitive but also help serve the larger objectives of sustainable industrialization, social equity, and responsible economic growth of India (Jain and Kumar, 2022).

2.3 ESG in Global Manufacturing Context

Environmental, Social, and Governance (ESG) discourse has been entirely focused on the manufacturing sector as one of the resource-consuming and environmentally influential sectors in the world (Zhu et al., 2023). Manufacturing companies all over the globe are being pushed to adopt more sustainable ways of operating, particularly due to a mixture of regulatory standards, consumer demands, shareholder pressure, and the escalating need to respond to climate change (Hartmann and Uhlenbruck, 2023). In developed economies like the European Union (EU), the

United States, and Japan, ESG implementation in manufacturing is primarily dictated by stringent regulatory provisions that require such disclosures to be more sustainable, carbon-cutting, and ethical in terms of workforce choices along supply chains (Lozano et al., 2023). As an illustration, the Green Deal by the EU and the Corporate Sustainability Reporting Directive (CSRD) have drawn the level of compliance with ESG to a higher standard, as they demand that manufacturers monitor and report their environmental and social performance (Kolk, 2024). In the same manner, in the United States, the Securities and Exchange Commission (SEC) have introduced new regulations on climate-related disclosures, and Japan has incorporated the ESG criteria in its corporate governance code, which would mark the start of a global transition towards voluntary actions and the mandatory ones (Yoshino and Taghizadeh-Hesary, 2025). The developments reflect the way ESG has gained critical-competitiveness and legitimacy in global markets concerning manufacturing (Dangelico and Pujari, 2025).

In addition to regulatory forces, the global manufacturing is influenced by the expectations of the stakeholders, especially the consumers and the supply chain partners (Lee, 2024). Consumers of all levels in developed economies are increasingly demanding products that are sustainably sourced, ethically manufactured and clearly labeled (Hazen et al., 2023). It has compelled manufacturers across the world to implement ESG practices not only in their operations but also in their supply chains, which have ripple effects on suppliers, with a significant number of them being SMEs in developing countries (Tachizawa and Wong, 2023). To provide an example, sustainability requirements are commonly introduced to suppliers of large multinational corporations in the automotive, textile, and electronics industries, requiring them to be certified, audited, and comply with the requirements of sustainability as a condition of their further collaboration (Liu et al., 2024). This interaction underscores the role of global consumers as potent institutional agents in the dispersal of ESG norms through geographies and company scopes. As a result, SMEs which belong to global supply chains will experience no chance to stay closed or insulated to the ESG adoption tendencies, despite being located in markets where law enforcement is less effective (Luthra et al., 2023).

Besides regulation and consumer demand, investors and financial institutions have been transformative in influencing the practice of ESG in manufacturing (Sullivan and Mackenzie, 2023). The development of sustainable finance, green bonds, and ESG-based loans has influenced the global economy to encourage manufacturers to make their activities more eco-friendly in developing sustainable solutions (Park et al., 2024). Investors, especially in Europe and North America, nowadays assess the ESG performance as a standard in their investment decisions, and punish those companies with low sustainability reports through limited access to capital or high interest rates on borrowing (Clark et al., 2025). Such financial aspect of ESG adoption highlights its increasing strategic value: manufacturers unable to keep up with the changes will lose not only access to funds but also long-term trust among investors (Nofsinger and Varma, 2023). This trend means that access to capital is becoming more dependent on the ability to show commitment to ESGs, and sustainability is becoming an economic compulsory requirement, rather than a discretionary one, to global SMEs (Dangelico and Pujari, 2023).

Notably, the implementation of ESG in manufacturing is not restricted to the environment but also to the social and governance concerns, especially in the global environment where labour rights, workplace safety, and ethical governance are constantly questioned (Barrientos et al., 2023). Examples like the Rana Plaza garment factory collapse in Bangladesh, or frequent media coverage of labour exploitation in electronics supply chains, have pointed to the social risks of non-observance of ESG principles, compelling global manufacturers to make sure that ethical labour practices are observed (Taplin, 2024). Governance practices such as transparency, anti-corruption, and accountability in decision-making are also taken into consideration as companies become subjected to reputational risks and regulatory fines on governance failures (Crifo and Forget, 2023). Combined, these aspects can demonstrate that ESG in manufacturing is a multidimensional framework that extends much further than the ability to comply with environmental legislation (Scherer et al., 2025).

In the case of SMEs in emerging markets like India, the world manufacturing environment presents both threats and opportunities. On the one hand, strict ESG guidelines provided by multinational purchasers and international authorities may be overwhelming to small companies with little resources and technical knowledge (Chatterjee and Leenders, 2023). Conversely, the global pressures open avenues to the modernisation of SMEs, globalisation as well as differentiating themselves based on sustainability-led innovation (Bansal and DesJardine, 2025). Experiences in foreign practice show that, despite the limitations of available resources, even resource-strained companies can implement ESG step-by-step, with high-impact practices being energy efficiency, waste minimization, and a simple improvement of labour welfare (Gupta and Barua, 2024). Besides, experiences in Europe and East Asia indicate that governmental encouragement, including subsidies, training, and reduced reporting requirements, can significantly facilitate the process of adoption of ESG by smaller companies (Amini and Bienstock, 2025).

To conclude, the ESG in the global manufacturing environment is a vital element of industrial transformation, determined by the regulatory enforcement, consumer consciousness, investor expectations, and supply chains. As the Indian SMEs move, from the perspective of global value chain integration and competitive positioning in the global markets, the knowledge of these global trends is critical, given that their alignment to sustainability standards holds an increasing importance (Kumar and Rahman, 2024). Indian SMEs, therefore, can not only be viewed within the context of the global perspective of problems but also be provided with helpful information concerning strategies and institutional models that can support the process of adopting the ESG.

2.4 ESG in India: Regulations & Initiatives

The adoption of the Environmental, Social, and Governance (ESG) practices in India has been actively gaining momentum during the last ten years, with regulatory trends, shareholders' expectations, and the increasing sensitization of the population to sustainability concerns playing the key roles (Kumar and Pande, 2022). In contrast to most developed economies, wherein ESG frameworks were developed at a slow pace by voluntary disclosures and investor activism, in India, regulators actively and rapidly developed the evolution to ensure the corporate behaviour aligned with the sustainability and development objectives of the country (Gupta and Aggarwal, 2021). The Securities and Exchange Board of India (SEBI) has been at the forefront of internalizing ESG reporting, with the Business Responsibility and Sustainability Reporting (BRSR) framework being introduced in 2021 (Sharma and Ghosh, 2023). According to these principles, the 1,000 listed companies ranked highest must report specific details on the performance in the environment, social welfare and governance on nine principles consistent with the concept of national guidelines on responsible business conduct (NGRBC). The BRSR is a significant change from previous voluntary disclosures in the Business Responsibility Reports (BRRs), which marks the transition to more accountability and standardization of ESG practices (Jain, 2022).

In tandem with the activities of SEBI, the government of India has incorporated the ESG factors in several policy frameworks that influence both the large corporations and the smaller ones. The NGRBC has played a significant role in ensuring responsible business conduct by the Ministry of Corporate Affairs (MCA), which encourages responsible business conduct (Bhattacharya, 2021). Equally, the compulsory Corporate Social Responsibility (CSR) requirements that were implemented in India by the Companies Act 2013, although not ESG, have opened up more corporate involvement in social and community development problems (Mehta, 2020). Also, the national policies which promote the inclusion of ESG in India have been spilled over to international commitments that promote the use of ESG through the integration of renewable energy, waste management, and energy efficiency; these are the Paris Climate Agreement and the United Nations Sustainable Development Goals (SDGs) (Rao and Sinha, 2022).

Embedding ESG in business practices is also becoming a growing role of the financial institutions in India. The Reserve Bank of India (RBI) has realized the significance of sustainable finance, and therefore, banks and other lending institutions are compelled to incorporate environmental and social risk analysis in its credit assessment process (Verma and Dey, 2022). Indian financial institutions and capital markets have also launched green bonds, sustainability-related loans and ESG-related mutual funds in recent years, which offer incentives to companies that comply with sustainability objectives (Chakraborty, 2021). Development finance institutions and international donors are also aiding India in the transition to green finance, and this allows SMEs to come up that prove to be ESG aligned (Kohli and Sharma, 2023). Nevertheless, these financial tools are more easily available to large companies, whereas SMEs tend to have difficulties complying with reporting and disclosure regulations to obtain such funding (Rastogi, 2022).

Business associations like the Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI) have also initiated several programs at the industry level to provide capacity building and knowledge exchange of ESG practices (Sen and Basu, 2022). These organizations lead workshops, develop voluntary ESG rating systems, and offer a platform where SMEs can learn on a bigger scale and gain international experience. There are also such public initiatives as the Perform, Achieve, and Trade (PAT) scheme, Zero Effect Zero Defect (ZED) certification, and numerous state programs that target clean manufacturing and energy efficiency indirectly both enhancing adoption of ESG in manufacturing enterprises (including SMEs) (Ramanathan and Gupta, 2021). These initiatives focus on environmental compliance, process enhancement and sustainable product design which run on par with the environmental aspect of ESG, but manage social and governance concerns as well.

Even with such progressive laws and programs, there is an evident gap between big companies and SMEs in terms of adoption of ESG in India. Publicly-traded and/or global supply chain companies are also starting to include ESG practices in their strategies and reporting structures, both under the pressure of regulation and the pressure of the investors (Mukherjee, 2023). Conversely, despite the SMEs being the bastions of the manufacturing economy in India, they have excessive obstacles to ESG implementation (Narayanan and Iyer, 2022). Most SMEs are unaware of ESG models, face limited resources, and are usually playing in the market with high competition, with short-term costs prevailing over long-term sustainability planning (Bose, 2021). There is no simplified reporting standard and support specific to SMEs, and this aspect implies that smaller businesses tend to struggle with ESG requirements or simply cannot see them as relevant to their short-term business survival (Patel, 2022).

On the whole, the current regulatory and institutional context of India also indicates an urge to mainstream ESG, especially via BRSR guidelines provided by SEBI, NGRBC by the MCA, CSR, and innovations in financial sector (Chakrabarti, 2023). But with SMEs, which are vital in India's manufacturing output and the creation of jobs, these systems must be modified and supplemented by specific capacity-building initiatives, lowered compliance costs, and monetary incentives (Raj and Menon, 2022). In the absence of such adaptations, one can always risk that the application of ESG in India will be biased towards large enterprises, and SMEs will not be in the mainstream of the process of sustainability transition.

2.5 Theories Supporting ESG Adoption

The adoption of Environmental, Social, and Governance (ESG) practices in organizations is not random but can be explained through well-established management and organizational theories. These theories provide a framework for understanding why firms, including small manufacturing enterprises, choose to integrate sustainability into their operations and strategies. Among the most relevant are:

Institutional Theory – This explains how external pressures, such as regulations, industry norms, and competitive imitation, drive companies to adopt ESG practices in order to maintain legitimacy and meet societal expectations.

Stakeholder Theory – This emphasizes the need for organizations to balance the interests of diverse stakeholders—including employees, customers, investors, suppliers, and communities—who increasingly demand responsible and ethical business practices.

Resource-Based View (RBV) – This highlights ESG adoption as a potential strategic resource, where sustainability practices can become a source of competitive advantage by reducing costs, enhancing reputation, and fostering innovation.

Together, these theories provide complementary perspectives on ESG adoption: Institutional Theory explains external pressures, Stakeholder Theory highlights stakeholder expectations, and RBV positions ESG as a strategic asset. When applied to small manufacturing companies in India, they help to uncover how both external forces and internal capabilities shape the willingness and ability of SMEs to adopt ESG practices.

1. Institutional Theory

Institutional Theory is one of the most widely used frameworks for explaining why organizations adopt certain practices, particularly those that relate to legitimacy and conformity rather than immediate efficiency gains. It argues that organizations are embedded within larger institutional environments that shape their behavior through rules, norms, and cultural expectations (Scott, 2014). According to DiMaggio and Powell (1983), three primary mechanisms of institutional pressure—coercive, normative, and mimetic—influence organizational decision-making. When applied to Environmental, Social, and Governance (ESG) adoption, Institutional Theory provides a strong lens for understanding why companies, including small manufacturing enterprises, integrate sustainability into their operations even when such practices do not yield immediate financial returns (Jamali and Karam, 2018).

Coercive pressures are the formal and informal pressures exerted on organizations by governments, regulators, and powerful stakeholders. In the Indian context, coercive pressures are evident in regulatory interventions such as the Securities and Exchange Board of India's (SEBI) Business Responsibility and Sustainability Reporting (BRSR) framework, which mandates ESG reporting for the top 1,000 listed firms (Sharma and Ghosh, 2023). While such rules directly apply to large corporations, their influence cascades down to small and medium enterprises (SMEs) through supply chain requirements, contractual obligations, and customer expectations. SMEs that wish to continue as suppliers to larger corporations often have no choice but to align with ESG standards indirectly, illustrating how coercive pressures extend beyond direct regulation (Dissanayake, Tilt and Qian, 2019). Additionally, state and central government initiatives such as the Zero Defect, Zero Effect (ZED) certification scheme and environmental compliance laws also act as coercive mechanisms that shape the sustainability practices of manufacturing SMEs (Kumar and Prakash, 2022).

Normative pressures arise from professional standards, industry associations, and societal expectations about what constitutes responsible business conduct. In India, industry bodies such as the Confederation of Indian Industry (CII) and the Federation of Indian Chambers of Commerce and Industry (FICCI) have increasingly promoted ESG adoption through training, awareness campaigns, and sustainability awards. These bodies create normative standards of responsible manufacturing, encouraging SMEs to align with ESG principles not only to gain legitimacy within their industries but also to access new business opportunities (Narayanan and Iyer, 2022). Growing societal awareness about climate change, fair labor practices, and ethical governance further strengthens normative pressures, as consumers and communities expect businesses of all sizes to demonstrate social and environmental responsibility (Brammer, Jackson and Matten, 2012).

Mimetic pressures refer to the tendency of organizations to imitate the practices of successful or leading firms in order to reduce uncertainty and maintain competitiveness (Haunschild and Miner, 1997). In the Indian manufacturing context, SMEs often operate as suppliers to multinational corporations or large domestic companies that have already institutionalized ESG practices. To remain competitive and maintain contracts, SMEs are likely to mimic the sustainability practices of these larger firms (Dutta, 2020). For example, if a multinational buyer imposes sustainability audits or requires ISO certifications, smaller suppliers in India are compelled to follow suit. This form of imitation is particularly significant for SMEs, which often lack the resources or expertise to independently develop ESG strategies but can model their practices on industry leaders (Zhu, Sarkis and Lai, 2013).

Institutional Theory also highlights the distinction between symbolic adoption and substantive adoption of practices. Some SMEs may adopt ESG practices superficially, focusing on meeting reporting requirements or demonstrating compliance without deeply embedding sustainability into their operations—commonly referred to as "greenwashing" (Mahoney, Thorne, Cecil and LaGore, 2013). This symbolic adoption is often a response to external pressures where firms feel compelled to demonstrate alignment with ESG norms to maintain legitimacy. In contrast, substantive adoption occurs when SMEs integrate ESG into their strategic and operational core, often leading to measurable improvements in environmental efficiency, social welfare, and governance quality (Boiral, 2007). Distinguishing between these forms of adoption is particularly relevant in India, where regulatory enforcement may be uneven, and smaller firms may comply formally without meaningful implementation.

In the context of SMEs, Institutional Theory also explains the asymmetry between large corporations and small firms in ESG adoption. Large corporations, due to stronger coercive pressures from regulators and investors, often proactively integrate ESG frameworks to maintain global legitimacy and competitiveness (Aguilera, Rupp, Williams and Ganapathi, 2007). SMEs, however, experience weaker direct coercive pressures but stronger normative and mimetic influences, especially through supply chain linkages (Dissanayake, 2020). Their adoption is therefore often reactive rather than proactive, driven by external demands rather than internal strategic priorities.

Nevertheless, Institutional Theory suggests that over time, as ESG practices become institutionalized across industries, SMEs too will normalize these practices, moving from symbolic compliance to substantive integration (Jamali and Karam, 2018).

Thus, Institutional Theory provides a powerful framework for understanding ESG adoption among small manufacturing companies in India. It explains how regulatory mandates, industry norms, and competitive imitation collectively drive SMEs toward sustainability, even in the face of financial and resource constraints. Importantly, it highlights that ESG adoption is not only about economic rationality but also about maintaining legitimacy and alignment with institutional expectations. For Indian SMEs, this means that embracing ESG is increasingly less a matter of choice and more a necessity for survival and relevance in an evolving global and domestic business environment.

2. Stakeholder Theory

Stakeholder Theory, first popularized by Freeman (1984), provides an important framework for understanding why organizations adopt Environmental, Social, and Governance (ESG) practices. Unlike traditional shareholder-centric models, which view the firm’s primary responsibility as maximizing returns for its owners, Stakeholder Theory argues that businesses must balance the needs and expectations of multiple stakeholders—including employees, customers, suppliers, investors, regulators, and communities. The central premise of the theory is that organizations derive legitimacy and long-term success not only from financial performance but also from their ability to meet the demands of the diverse groups that influence or are influenced by their operations (Donaldson and Preston, 1995). In the context of ESG adoption, this theory is particularly relevant because sustainability practices are often motivated by stakeholder pressures that go beyond regulatory compliance or immediate profitability (Mitchell, Agle and Wood, 1997).

For large corporations in India and globally, stakeholders such as institutional investors, activist shareholders, and regulators exert strong influence by demanding transparency, ethical conduct, and environmental stewardship (Jamali, 2008). These corporations face constant scrutiny from global supply chains, financial markets, and the media, making ESG adoption a strategic necessity. By contrast, for small manufacturing enterprises (SMEs), stakeholder dynamics are more localized but equally significant. Employees, customers, suppliers, and local communities tend to be the most immediate and influential stakeholders for SMEs (Spence, 2007). For instance, employees in small firms often live in the same communities where the firms operate, meaning workplace safety, fair wages, and welfare programs directly affect community well-being. Similarly, customers increasingly expect SMEs to demonstrate basic environmental responsibility, such as reducing pollution or improving product sustainability, especially when SMEs are part of international supply chains (Jain and Winner, 2016).

In India, SMEs form the backbone of the manufacturing sector, yet many operate in informal or semi-formal environments where compliance with ESG norms is not legally mandated. Here, Stakeholder Theory helps explain why SMEs might still adopt ESG practices voluntarily. Employee expectations for safe and dignified working conditions, community pressures to reduce pollution or contribute to local development, and customer preferences for ethically produced goods can collectively motivate SMEs to integrate sustainability (Gupta and Kumar, 2013). For example, small textile or leather manufacturers supplying to global brands are under increasing pressure to eliminate child labor, improve working conditions, and reduce chemical use—stakeholder concerns that directly shape business survival (Khalid, Haq and Usman, 2021). Even in cases where financial returns are not immediately apparent, SMEs may adopt ESG practices to preserve trust and legitimacy with their stakeholders, securing long-term relationships and reputation (Lund-Thomsen and Lindgreen, 2014).

Stakeholder Theory also emphasizes that stakeholder interests are not uniform and may sometimes conflict, creating dilemmas for SME managers. For instance, reducing costs to remain competitive may clash with demands for higher wages or investments in environmental compliance (Jamali, Lund-Thomsen and Khara, 2017). Large corporations often have resources and structured governance systems to balance these competing pressures, but SMEs typically operate with limited managerial capacity and financial flexibility. In such cases, SME leaders must prioritize stakeholders strategically, often focusing on those who have the most direct impact on business continuity—such as key customers in the supply chain or local regulators (Spence and Rinaldi, 2014). This selective responsiveness demonstrates how stakeholder pressures in SMEs are filtered through their limited resources and contextual realities.

Moreover, globalization has expanded the stakeholder landscape for SMEs. Multinational corporations and international buyers act as indirect but highly influential stakeholders by embedding ESG requirements in supplier contracts (Perry and Towers, 2013). For Indian SMEs, this dynamic has become especially pronounced in sectors such as textiles, automotive, and electronics, where global buyers insist on compliance with labor, environmental, and governance standards. Failure to meet these expectations may result in SMEs being excluded from global supply chains, making ESG adoption not only a matter of reputation but also a condition for market access (Kumar and Zattoni, 2019). Thus, while community and employee expectations shape local legitimacy, global buyers and investors increasingly dictate the strategic relevance of ESG adoption for SMEs integrated into international markets.

Another key insight from Stakeholder Theory is that organizations that respond effectively to stakeholder demands can strengthen long-term resilience and competitiveness. SMEs that invest in employee well-being may experience lower turnover and higher productivity (Russo and Perrini, 2010). Firms that engage positively with their communities may gain goodwill, reducing the risk of local opposition to expansion or operations. Similarly, SMEs that align with customer sustainability preferences can differentiate themselves in crowded markets, positioning ESG not as a cost but as a competitive advantage (Lee, 2008). This strategic alignment between stakeholder expectations and business outcomes underscores the relevance of ESG as more than a compliance requirement; it becomes a pathway to enhanced performance and legitimacy.

In contrast to large corporations, where stakeholder engagement is often formalized through reporting systems, sustainability audits, or shareholder meetings, SMEs rely more heavily on informal and direct relationships (Spence, 2007). This makes trust, reputation, and responsiveness particularly critical in SME contexts. However, it also means that SMEs may adopt ESG practices reactively, addressing immediate stakeholder demands rather than proactively building comprehensive sustainability strategies (Jain and Winner, 2016). Nonetheless, over time, consistent stakeholder pressures—whether from employees, communities, or supply chains—can institutionalize ESG practices within SMEs, even in resource-constrained settings.

In conclusion, Stakeholder Theory provides a robust explanation for ESG adoption in small manufacturing companies in India by highlighting how multiple, overlapping stakeholder pressures drive sustainability practices. For SMEs, stakeholders range from local employees and communities to global buyers and investors, each influencing business behavior in distinct ways. While resource constraints limit the ability of SMEs to address all stakeholder concerns equally, the theory emphasizes that aligning business practices with stakeholder expectations is essential for long-term legitimacy, competitiveness, and survival (Freeman, Harrison and Wicks, 2007). In the Indian context, where SMEs dominate the manufacturing landscape, Stakeholder Theory underscores that ESG adoption is not only a moral responsibility but also a strategic imperative shaped by the evolving demands of diverse and interdependent stakeholders.

3. Resource-Based View (RBV)

The Resource-Based View (RBV) is a foundational theory in strategic management that explains how firms achieve and sustain competitive advantage by leveraging internal resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). From this perspective, the integration of Environmental, Social, and Governance (ESG) practices can be viewed as a strategic resource that goes beyond compliance and legitimacy. When effectively embedded into organizational routines, ESG practices not only mitigate risks but also create opportunities for innovation, efficiency, and differentiation, thereby enhancing long-term competitiveness (Hart, 1995; Russo and Fouts, 1997). The RBV framework thus offers a critical lens to understand why ESG adoption can be strategically significant for manufacturing enterprises, including small and medium enterprises (SMEs) in India.

Environmental resources under ESG can serve as a source of competitive advantage when firms invest in cleaner technologies, resource-efficient processes, and sustainable production systems (Hart and Dowell, 2011). For manufacturing SMEs in India—many of which operate in resource-intensive industries such as textiles, chemicals, and metalworking—adopting environmentally responsible practices such as energy-efficient machinery, waste reduction, and water recycling can lead to significant cost savings while also reducing regulatory risks (Nidumolu, Prahalad and Rangaswami, 2009). Large corporations with greater financial capacity often leverage environmental sustainability as a brand differentiator and compliance safeguard. However, for SMEs, even incremental environmental improvements can function as strategic resources by improving efficiency and enabling access to green markets or supply chains that prioritize sustainability (Dangelico and Pujari, 2010). For example, SMEs that adopt eco-friendly processes may become preferred suppliers for multinational corporations committed to reducing their carbon footprint, thereby gaining a competitive edge in global trade (Aragón-Correa and Sharma, 2003).

The social dimension of ESG also aligns with RBV by enhancing intangible resources such as reputation, trust, and human capital. SMEs that prioritize fair labor practices, occupational health and safety, skill development, and community engagement can build stronger relationships with employees and local communities (Branco and Rodrigues, 2006). These practices often result in reduced employee turnover, enhanced productivity, and greater community support for business operations. In India, where SMEs frequently face labor shortages and reputational challenges, socially responsible practices can become a differentiating capability (Jamali, Lund-Thomsen and Jeppesen, 2017). For instance, SMEs in the garment or leather sectors that eliminate exploitative labor practices and engage in worker upskilling not only gain credibility with international buyers but also strengthen their internal capabilities through a more committed and skilled workforce (Ehrgott, Reimann, Kaufmann and Carter, 2011).

The governance aspect of ESG further highlights how RBV applies to sustainability adoption. Strong governance practices—such as transparent reporting, ethical leadership, anti-corruption mechanisms, and formalized decision-making structures—enhance organizational resilience and credibility (Aguilera et al., 2007). For SMEs, governance is often a weakness due to informal management structures and lack of compliance expertise. However, SMEs that succeed in institutionalizing governance practices create a distinct advantage by improving investor trust, reducing operational risks, and strengthening supply chain reliability (Husted and Allen, 2007). In India, where SMEs are seeking access to formal financing channels, governance maturity can become a critical differentiator, as financial institutions increasingly link lending decisions to ESG performance (Khan, Muttakin and Siddiqui, 2013). Thus, governance practices evolve into intangible resources that enhance access to finance and stakeholder confidence.

While RBV highlights ESG as a potential source of strategic advantage, its application in SMEs reveals certain complexities. Large corporations are better positioned to transform ESG into strategic resources because they have financial capital, technical expertise, and organizational capabilities to invest in sustainability initiatives (Hart and Dowell, 2011). SMEs, on the other hand, often view ESG adoption as a cost rather than a resource, given their limited budgets, lack of expertise, and short-term survival pressures (Aragón-Correa, Hurtado-Torres, Sharma and García-Morales, 2008). However, the RBV framework suggests that SMEs can still gain competitiveness by adopting ESG selectively and strategically. For example, SMEs can focus on low-cost, high-impact sustainability initiatives such as energy savings, waste minimization, or community partnerships, which may not require large investments but still create valuable differentiation (Dangelico, 2015). Additionally, SMEs can leverage their flexibility and agility—resources often overlooked in larger firms—to implement innovative ESG practices quickly and adaptively, such as developing eco-friendly niche products or aligning with circular economy models (Bocken, Short, Rana and Evans, 2014).

Another implication of RBV for SMEs is the potential to convert ESG compliance into unique selling propositions (USPs). In competitive manufacturing sectors, SMEs that align with international ESG standards may access global supply chains, attract ESG-linked financing, and build reputational capital that is both rare and inimitable (Delmas and Toffel, 2008). For example, Indian SMEs that achieve certifications such as ISO 14001 (environmental management) or SA8000 (social accountability) position themselves as reliable partners for multinational buyers, transforming compliance into a competitive advantage. These certifications act as intangible resources that are difficult for competitors to imitate without similar investments in ESG practices, thereby aligning directly with RBV's emphasis on rarity and inimitability (Christmann, 2000).

Nevertheless, RBV also highlights challenges for SMEs in transforming ESG into a resource. Resource scarcity, lack of institutional support, and low awareness of sustainability benefits often prevent SMEs from fully realizing ESG as a strategic capability (Holtbrügge and Dögl, 2012). Unlike large corporations that can internalize ESG into their core strategy, SMEs may adopt ESG reactively, driven by external demands, rather than proactively building it into their organizational fabric (Lozano, 2015). This limits their ability to derive long-term competitive advantage from ESG practices. Therefore, while RBV emphasizes the strategic potential of ESG, its realization in the SME context requires external enablers such as government incentives, industry support, and simplified frameworks tailored to small firms (Brammer, Jackson and Matten, 2012).

In summary, the Resource-Based View positions ESG not merely as a compliance mechanism but as a strategic resource that can enhance firm competitiveness when effectively integrated into operations. For small manufacturing enterprises in India, ESG adoption can lead to cost savings, reputational benefits, stronger stakeholder relationships, and improved market access. However, realizing these advantages depends on the ability of SMEs to transform ESG from a perceived burden into a valuable, rare, and inimitable capability. While resource limitations pose challenges, SMEs that strategically align ESG with their strengths—such as agility, local embeddedness, and niche specialization—can leverage sustainability as a powerful driver of long-term success.

Linking Theories with RQs:

RQ1: What is the current level of ESG adoption among SMEs in the Indian manufacturing sector?

Institutional Theory helps explain how external pressures—such as regulations, norms, and competitive forces—drive the adoption of ESG practices among SMEs. The coercive pressures exerted by regulators (e.g., SEBI's BRSR guidelines) and normative pressures from industry bodies (e.g., CII and FICCI) shape the extent to which SMEs in India adopt ESG practices. Understanding these institutional forces is essential for assessing the current level of ESG adoption among small manufacturing firms. By applying Institutional Theory, we can observe how these pressures lead to symbolic or substantive adoption depending on the level of compliance SMEs are willing to achieve.

Connection to RQ1: Institutional pressures explain the varying levels of ESG adoption among SMEs, helping to assess whether adoption is more symbolic (in response to external pressures) or substantive (integrated into core operations).

RQ2: What are the key drivers motivating SMEs to adopt ESG practices?

The drivers of ESG adoption are often shaped by coercive, normative, and mimetic pressures as outlined in Institutional Theory. Coercive drivers, such as regulatory mandates like SEBI's BRSR framework, create a legal requirement for companies to adopt ESG principles. Normative drivers, like societal expectations and industry standards, push SMEs to align with responsible business practices to maintain legitimacy. Finally, mimetic pressures suggest that SMEs may adopt ESG practices to remain competitive within supply chains dominated by larger corporations that have already implemented sustainability practices.

Connection to RQ2: Institutional Theory helps identify the external drivers, from regulatory mandates to industry norms, that encourage SMEs to adopt ESG practices.

RQ3: What are the primary barriers that hinder SMEs from implementing ESG practices?

According to Institutional Theory, resource constraints and lack of internal capabilities can make it difficult for SMEs to implement ESG practices. Coercive pressures from regulators may demand adherence to ESG practices, but SMEs may lack the financial and technical resources required to meet these demands. The theory also highlights symbolic adoption (e.g., superficial ESG practices) as a barrier—SMEs may adopt ESG measures only to maintain legitimacy without truly integrating them into their operations.

Connection to RQ3: Institutional Theory helps understand how external pressures, such as regulatory demands and societal expectations, create barriers for SMEs in effectively implementing ESG practices, especially when resources are limited or adoption is superficial.

RQ4: How do government policies, industry bodies, and financial institutions support or inhibit ESG adoption in SMEs?

This question directly connects to Institutional Theory's emphasis on coercive and normative pressures. Coercive mechanisms, such as government regulations (e.g., SEBI's BRSR), enforce ESG practices, while industry bodies like CII and FICCI play a significant role in creating normative standards and offering support through training and awareness campaigns. Financial institutions may either support or inhibit ESG adoption through incentives like green bonds or ESG-linked loans, which help SMEs finance sustainability initiatives.

Connection to RQ4: Institutional Theory provides a framework for understanding how government policies, industry associations, and financial institutions shape the support or inhibition of ESG adoption among SMEs, either through regulatory compulsion or industry norms.

RQ5: What patterns of ESG adoption can be identified among SMEs with higher levels of integration?

Institutional Theory suggests that substantive adoption occurs when organizations integrate ESG into their core operations and strategy. The mimetic pressures mentioned in the theory indicate that SMEs with higher levels of ESG adoption may look to industry leaders or large corporations as examples. As ESG becomes more institutionalized within an industry, SMEs may gradually move from symbolic adoption (surface-level compliance) to substantive adoption (deep integration into business practices).

Connection to RQ5: The theory highlights the progressive evolution of ESG adoption, from symbolic compliance to substantive integration. Identifying these patterns among SMEs will help determine the strategies and institutional supports that lead to more meaningful ESG adoption.

Hypothesis Generated

H1: The level of ESG adoption among SMEs in the Indian manufacturing sector is low due to resource constraints and limited awareness of ESG frameworks.

H2: Regulatory pressures, industry norms, and competitive forces (coercive, normative, and mimetic pressures) positively influence SMEs' adoption of ESG practices in India.

H3: Financial constraints, lack of technical expertise, and complex regulatory requirements are significant barriers to the successful implementation of ESG practices among SMEs in the Indian manufacturing sector.

H4: Government policies, industry body initiatives, and financial institutions' support positively influence ESG adoption among SMEs in the Indian manufacturing sector by providing incentives, training, and financing mechanisms.

H5: SMEs with higher levels of ESG integration are more likely to have adopted ESG practices substantively (beyond compliance) and exhibit long-term competitive advantages, such as increased market access, cost savings, and improved stakeholder relationships.

2.6 Challenges and Opportunities for SMEs

The adoption of Environmental, Social, and Governance (ESG) practices presents both significant challenges and unique opportunities for small and medium enterprises (SMEs) in the Indian manufacturing sector. As the backbone of India's industrial economy—accounting for nearly 30% of GDP and providing large-scale employment—SMEs are central to the country's sustainability transition (Kapoor and Sandhu, 2022). However, their limited resources, fragmented structures, and exposure to competitive market pressures make ESG adoption a complex process. At the same time, increasing global and domestic emphasis on sustainability creates new pathways for SMEs to leverage ESG for competitiveness, innovation, and legitimacy (Khan et al., 2021).

Challenges in ESG Adoption

1. Resource Constraints

One of the most significant barriers for SMEs is the lack of financial, human, and technical resources required to adopt ESG practices. Unlike large corporations, which can allocate dedicated budgets to sustainability initiatives, SMEs often operate with thin profit margins and prioritize immediate survival over long-term sustainability (Narayanaswamy et al., 2022). Investments in energy-efficient technology, waste management systems, or ESG reporting tools can appear prohibitively expensive for small firms. Moreover, SMEs typically lack specialized staff or expertise in sustainability, which further limits their capacity to develop and implement ESG strategies (Bansal et al., 2020).

2. Lack of Awareness and Training

Many SMEs remain unaware of ESG principles or do not fully understand how sustainability practices translate into tangible benefits. This knowledge gap is particularly acute in rural and semi-urban manufacturing clusters, where awareness about global ESG trends and reporting frameworks remains low (Sarkar and Mishra, 2021). Even when SMEs are exposed to ESG concepts, the lack of accessible training programs and knowledge-sharing platforms prevents them from operationalizing these principles effectively (Roy and Kar, 2020).

3. Regulatory Complexity and Compliance Burden

ESG frameworks in India, such as SEBI's Business Responsibility and Sustainability Reporting (BRSR), are primarily designed for large, listed companies. SMEs, although indirectly impacted, struggle with the complexity of these frameworks (Garg, 2022). The absence of simplified, SME-specific reporting systems often leads to confusion and non-compliance. Furthermore, SMEs fear that ESG adoption will increase bureaucratic overhead and compliance costs, adding to their existing regulatory burdens in areas such as taxation, labor laws, and environmental clearances (Jain and Jain, 2020).

4. Greenwashing and Superficial Adoption

Due to resource limitations, some SMEs may engage in symbolic or superficial ESG adoption—commonly referred to as "greenwashing"—to satisfy external stakeholders without truly embedding sustainability in their operations (Marquis et al., 2016). For example, firms may publicize tree-planting drives or CSR donations while continuing environmentally harmful practices. Such superficial adoption undermines the credibility of ESG efforts and exposes SMEs to reputational risks if stakeholders perceive insincerity (Walker and Wan, 2012).

5. Market Pressures and Short-Termism

SMEs in India often operate in highly competitive markets where cost reduction and price competition dominate business decisions. This short-term orientation makes it difficult for SMEs to prioritize ESG investments, which may require long-term commitment before yielding visible returns (Prasad et al., 2022). Moreover, buyers in domestic markets are often less demanding about sustainability compared to international customers, reducing the incentive for SMEs serving local markets to embrace ESG (Dutta, 2021).

Opportunities in ESG Adoption

1. Access to Global Supply Chains

The globalization of manufacturing has created opportunities for SMEs that align with ESG requirements set by multinational corporations. Many global buyers now mandate sustainability audits and certifications for their suppliers, offering SMEs a chance to enter or expand in lucrative international markets (Chatterjee and Sahoo, 2021).

For instance, Indian SMEs in textiles, automotive parts, and electronics can gain access to global value chains by demonstrating compliance with international sustainability standards (Kumar and Subramanian, 2020).

2. ESG-Linked Financing and Incentives

Financial institutions in India and abroad are increasingly offering green bonds, sustainability-linked loans, and ESG-focused funds to incentivize sustainable business practices (Sharma, 2022). SMEs that align with ESG principles may benefit from preferential access to credit, lower borrowing costs, or targeted subsidies from government schemes. Initiatives such as the Zero Defect Zero Effect (ZED) certification also provide both reputational and financial incentives to SMEs that commit to sustainable production (Patil and Deshmukh, 2021).

3. Innovation and Competitive Differentiation

ESG adoption provides SMEs with opportunities to innovate in product design, production processes, and business models. By investing in cleaner technologies or sustainable raw materials, SMEs can differentiate themselves from competitors, tap into eco-conscious consumer segments, and develop niche products (Ray and Ray, 2020). Case examples such as Phool.co, which converts floral waste into eco-friendly products, demonstrate how SMEs can use sustainability as a foundation for entrepreneurial innovation (Ghosh, 2021).

4. Reputation and Stakeholder Trust

SMEs that adopt ESG practices can strengthen their reputation and build trust with key stakeholders, including employees, customers, investors, and local communities (Kansal and Joshi, 2020). Responsible labor practices and community engagement initiatives enhance employee loyalty and reduce conflict with communities, while environmentally responsible practices improve credibility with regulators and industry associations (Singh et al., 2021). For SMEs, where informal trust-based networks are critical, ESG can serve as an intangible asset that strengthens long-term legitimacy.

5. Operational Efficiency and Cost Savings

While SMEs often perceive ESG as a cost, many sustainability practices yield direct operational benefits. Energy efficiency, waste reduction, water recycling, and lean manufacturing processes can reduce costs and improve productivity (Mukherjee, 2020). In resource-intensive manufacturing clusters such as textiles or metal processing, even small improvements in resource efficiency can generate substantial savings, turning ESG adoption into a driver of competitiveness rather than a burden (Sarkar, 2022).

2.7 Role of Government, Industry Bodies & Financial Institutions

Government, industry bodies, and financial institutions have a significant role to play in the enabling ecosystem of the manufacturing sector of India, in which the successful adoption of ESG practices depends (Aggarwal and Singh, 2021). Government programs like BRSR and ZED certification promote the integration of SMEs, which entail incentives, technical assistance, and compliance systems (Mehta, 2022). CII and FICCI are key facilitators in the industry that develop knowledge sharing platforms and sector sustainability standards (Rao, 2021). Sustainability-linked loans and green financing also make financial institutions tie the access to capital to compliance with ESG (Kapoor, 2021). These joint initiatives will make ESG more than a compliance requirement to a competitiveness and long-term sustainability avenue.

2.8 Summary and Gaps in Literature

The analysis of the available literature points to the fact that the implementation of the Environmental, Social, and Governance (ESG) practices has turned into an international requirement of enterprises where the pressure of regulators, customers, shareholders, and the rest of the civil society affects the behaviour of the company (Amel-Zadeh and Serafeim, 2018; Busch and Friede, 2018). Research on the global manufacturing environment highlights that the use of ESG leads to the enhancement of competitiveness, innovation, and trust between employees and the organization, as well as assists companies in fulfilling the regulatory demands and aligning with the global sustainability agenda (Clark et al., 2015; Khan et al., 2016). In India, it is reported that ESG integration is increasingly prevalent among major companies and mainly, owing to the Business Responsibility and Sustainability Reporting (BRSR) requirement by the SEBI, increased investor activism, and supplier pressure via multinational purchasers (Sharma and Bansal, 2020; KPMG, 2021).

The case however is very different when it comes to the small and medium enterprises (SMEs). Although SMEs are the most valuable stakeholders of the Indian manufacturing industry, they offer a source of employment, make a substantial contribution to the GDP, and yet the adoption of the ESG is inconsistent, under-researched, and hampered by the lack of resources, awareness, and regulatory challenges (Batra, 2017; Singh and Mittal, 2021). Theoretical insights like the Institutional Theory, Stakeholder Theory and the Resource-Based View (RBV) are invaluable in explaining the adoption of ESG, with emphasis made on the presence of external pressures, stakeholder expectations as well as internal capabilities (Oliver, 1997; Donaldson and Preston, 1995; Wernerfelt, 1984). The case studies of Best practice (e.g. EcoSattva and Phool.co) show that SMEs can use ESG to be innovative and competitive (Chakraborty, 2019; Mehta, 2021). Likewise, government, industry, and financial institutions' efforts underscore the importance of the external enablers in developing an environment that promotes the use of ESG within SMEs (Confederation of Indian Industry [CII], 2020).

Irrespective of these findings, the current literature has a number of critical gaps. To begin with, the bulk of ESG studies in India is dedicated to the large listed companies, and the SMEs are mostly neglected, regardless of their size and importance (Aggarwal, 2018; PwC India, 2021). The systematic research that would evaluate the extent of ESG adoption in small manufacturing companies nowadays and the difference in their practices to those of bigger companies is lacking (Rao and Kumar, 2020). Second, global investigations define factors like demand of the consumers, pressures caused by the supply chain, and the impact of the investors; however, there is a lack of literature concerning the specific functioning of these drivers in the context of Indian SME manufacturing where market relations, cultural norms, and stock systems are not similar (Sullivan and Mackenzie, 2020; Nath, 2021). Third, some obstacles to ESG implementation, including the absence of resources, ignorance, and regulations complexity, are stated anecdotally without being thoroughly analyzed in connection with Indian SMEs (Khurana and Nandwani, 2019). Fourth, the contribution of financial institutions and ESG-related financing of SMEs is a new field, and there are few empirical studies on the effect of access to green credit or a sustainability-related loan on ESG-adoption by SMEs (OECD, 2020; Sharma and Sheth, 2022). Fifth, the current ESG reporting frameworks like BRSR and GRI are large company frameworks, and little has been done on how such frameworks can be made functional and straightforward for SMEs so that compliance does not become a heavy burden (Patel and Desai, 2021). Lastly, although case studies demonstrate successful practice of ESG implementation by a few SMEs, there are no systematized records on best practices and how they can be implemented across industries, which leaves a knowledge gap in the academic field and managerial advice (Mehta, 2021; CII, 2020).

Surveying the available literature on ESG adoption by small and medium enterprises (SMEs), several significant gaps appear, including the methodological rigour of the previous research. The literature has concentrated on big organizations, and the dynamics of SMEs have a small amount of empirical studies to back up (Sharma and Bansal, 2020; KPMG, 2021). Moreover, much of the studies available on SMEs are not representative of a whole sample or have been limited to case studies in a single industry, which restricts the extrapolation of results (Batra, 2017; Singh and Mittal, 2021). Some of these studies are also based on the qualitative approach but using small samples or anecdotal data, so they cannot make strong, quantitative findings about the trends in ESG adoption and their effects in the long run (Rao and Kumar, 2020). Also, comparative studies are not done to investigate the differences between SMEs and larger corporations in terms of ESG adoption, or the challenges that SMEs have more or less in various industries and geographic locations (Dissanayake, Tilt and Qian, 2019). A longitudinal study was also not available, which makes it difficult to understand how ESG practices change over time in SMEs, as well as their impact on business performance. This dissertation aims to fill these gaps through a sample of SMEs in various manufacturing industries by adopting a mixed-methodology approach to produce both quantitative and qualitative results. It has as well a longitudinal analysis in an attempt to understand how ESG practices evolve over the years and the role they play in firm competitiveness and sustainability, which makes a significant contribution to the body of scholarly knowledge and the practical application of policy in the field of SMEs sustainability.

To conclude, even though the current literature confirms the significance of ESG adoption in improving corporate legitimacy, competitiveness, and sustainability (Busch and Friede, 2018; Clark et al., 2015), the specifics of the Indian context of manufacturing SMEs are underresearched. The identified gaps, starting with the absence of empirical research on adoption rates, motivation, and obstacles and the limited understanding of the funding mechanism and reporting system, point to the necessity to conduct specific research. The opportunities to address these gaps will not only serve as a contribution to the academic knowledge but also as a practical contribution to the policymakers, industry bodies, and SMEs themselves and allow creating tailored strategies that allow the adoption of ESG in this essential part of the Indian economy (Rao and Kumar, 2020; Sharma and Sheth, 2022).

Table 1 Literature Gaps Analysis

Study	**Findings**	**Gaps**	**How This Study Addresses Gap**
Ching et al. (2017)	Explored ESG practices and financial performance in large firms.	Lacks focus on SME-specific ESG adoption, particularly in the Indian manufacturing sector.	This study focuses on ESG adoption in small and medium enterprises in the Indian manufacturing sector.
Drempetic et al. (2020)	Examined environmental concerns in manufacturing, emphasizing large companies.	Does not address the challenges faced by SMEs, especially in developing countries like India.	This research includes a dedicated section for SMEs in India, identifying challenges and solutions.
Kumar and Pande (2022)	Noted the increasing momentum of ESG in India, especially among large firms.	Fails to explore SME-specific barriers to ESG adoption in India.	Provides insights into how SMEs can overcome barriers to ESG adoption in Indiaâ€™s manufacturing sector.
Sharma and Ghosh (2023)	Detailed SEBIâ€™s BRSR framework for large firms.	Focuses only on large corporations, not considering SMEs within the same framework.	This study explores both large firms and SMEs to compare their ESG adoption processes and challenges.
Gupta and Aggarwal (2021)	Focused on the role of governmental bodies in shaping ESG in large corporations.	Does not explore SME-specific policies or frameworks in India.	Examines the specific role of industry bodies in supporting SMEsâ€™ ESG initiatives in India.
Rastogi (2022)	Discussed	Limited discussion on	Explores green financing

	challenges in financing ESG initiatives for SMEs.	how SMEs access financing for ESG in the context of regulatory challenges.	options specifically for SMEs and the challenges they face in obtaining such financing.
Kumar and Prakash (2022)	Identified coercive pressures from the government to enforce ESG practices in large firms.	Mainly focuses on large firms and their regulatory frameworks, not SMEs.	Focuses on the role of government and regulations in promoting ESG adoption specifically for SMEs.
Mehta (2022)	Highlighted the role of industry bodies in advancing ESG practices in large firms.	Primarily concerns large firms and does not focus on SMEs or their specific needs.	Addresses the challenges faced by SMEs in ESG adoption and the support provided by industry bodies.

2.9 Conclusion

The literature review that has been conducted in this chapter confirms that Environmental, Social, and Governance (ESG) practices are no longer discretionary but rather a global requirement to businesses that want to be considered as legitimate, competitive, and sustainable in the long run. On the global scale, ESG has been demonstrated to eliminate value through reducing risks, enhancing efficiency, encouraging innovations and enhancing the relationships with the key stakeholders. In India, these big businesses have been adopting ESG systems, encouraged by regulatory requirements like the SEBI Business Responsibility and Sustainability Reporting (BRSR), shareholder demands, and the participation in international supply chains. Nevertheless, the small and medium enterprises (SMEs), though playing a major role in the manufacturing sector in India, are lagging far behind in the adoption of ESG because of the lack of finances, lack of awareness, poor governance mechanisms, and regulatory challenges.

Such theoretical perspectives as Institutional Theory, Stakeholder Theory, and the Resource-Based View (RBV) offer important theoretical details of why companies implement ESG, focusing on the combination of the external pressures, expectations of the stakeholders, and internal strategic resources. Although these theories are useful in the adoption of large firms, when applied to SMEs, they show different challenges and dynamics which are characterized by resource constraints and local stakeholder ties. The examples of EcoSattva and Phool.co indicate that the adoption of the ESG can be effectively used by the SMEs to become innovative, social, competitive, and sustainability is possible even within a resource-limited environment. The government, industry organizations, and financial institutions also come out as key to the development of an enabling ecosystem of SMEs, provide regulatory advice, capacity building, and financial assistance to facilitate ESG implementation.

However, the review reveals critical literature gaps. The existing literature is disproportionally based on the large-scale business, and the specific adoption patterns of SMEs are under-researched. The ESG drivers and obstacles in the Indian SME context are still not well studied empirically as there is minimal focus on green financing applicability, simplified reporting models or industry best practices. These gaps can provide the present study with a chance to make a significant contribution to academic and practical policy since they can be used to investigate the adoption of ESG in small manufacturing businesses in India and to discover the specific difficulties they could encounter and the ways to solve them.

In summary, this chapter highlights that adoption of ESG among SMEs is characterized by many challenges, but has transformational opportunities of resilience, competitiveness, and sustainable growth. The gaps that are present in current literature are expected to be filled through this dissertation as the research will help to develop a more profound insight into the possible ways of getting ESG properly incorporated into the SME manufacturing sector of Indian society and thus advance the whole objective of sustainable development and inclusive development in industries.

CHAPTER III:
METHODOLOGY

3.1 Overview of the Research Problem

The adoption of Environmental, Social, and Governance (ESG) practices has emerged as a global priority, shaping how businesses align with sustainability goals, respond to stakeholder expectations, and remain competitive in dynamic markets. In India, the manufacturing sector contributes significantly to the economy, accounting for nearly 16–17% of GDP (Confederation of Indian Industry, 2021), while also being one of the largest sources of environmental pollution and resource consumption. Although large corporations in India have increasingly integrated ESG practices due to regulatory requirements, investor pressures, and consumer demand, small and medium-sized enterprises (SMEs) — which form the backbone of the manufacturing sector — lag behind in adoption.

SMEs face distinct challenges in adopting ESG practices, including financial constraints, limited technical capacity, regulatory complexities, and cultural barriers. At the same time, they also encounter strong drivers for ESG integration, such as supply chain requirements from larger corporations, growing consumer awareness of sustainability, and incentives or regulatory frameworks promoted by the government. Industry bodies, financial institutions, and government initiatives such as SEBI's Business Responsibility and Sustainability Reporting (BRSR) and the Zero Defect Zero Effect (ZED) Certification Scheme provide frameworks for adoption. However, the degree to which SMEs in India's manufacturing sector are able to translate these pressures and opportunities into tangible ESG practices remains uncertain.

The research problem, therefore, lies in understanding the current level of ESG adoption among SMEs in Indian manufacturing, the key drivers and barriers influencing adoption, and the role of institutional support mechanisms in shaping outcomes. This gap necessitates a structured, empirical investigation that can provide generalizable insights into how SMEs are adopting ESG, the constraints they face, and what practices statistically differentiate adopters from non-adopters.

By focusing on quantitative survey data from SMEs, this study addresses this research problem through a rigorous statistical analysis of adoption levels, influencing factors, and institutional roles. The results will provide a clearer understanding of how ESG practices are embedded in SMEs, identify the most significant barriers and drivers, and offer actionable insights for policymakers, industry bodies, and SME managers seeking to promote sustainable business practices in the Indian manufacturing sector.

3.2 Research Purpose and Questions

The purpose of this research is to quantitatively investigate the adoption of Environmental, Social, and Governance (ESG) practices among small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. While global and national discourse emphasizes ESG as a strategic driver for sustainable growth, the extent of adoption among Indian SMEs remains insufficiently documented. Prior studies have highlighted both drivers — such as regulatory compliance, investor expectations, consumer awareness, and global supply chain requirements — and barriers, including financial constraints, regulatory complexity, and lack of awareness (Arora and Dhar, 2019; Bhattacharya, 2021; PwC, 2021). However, much of the available evidence remains fragmented or anecdotal, with limited large-scale empirical data to capture adoption trends across SMEs.

This study addresses that gap by using a structured survey of SMEs to assess their current ESG practices, identify significant drivers and barriers, and evaluate the role of government policies, industry associations, and financial institutions in enabling or constraining adoption. By analyzing responses from 124 SMEs, this research seeks to generate statistically grounded insights that can inform policymakers, industry leaders, and SME managers on how ESG adoption can be accelerated in India's manufacturing sector.

Research Questions:

1. What is the current level of ESG adoption among SMEs in the Indian manufacturing sector?
2. What are the key drivers motivating SMEs to adopt ESG practices?
3. What are the primary barriers that hinder SMEs from implementing ESG practices?
4. How do government policies, industry bodies, and financial institutions support or inhibit ESG adoption in SMEs?
5. What patterns of ESG adoption can be identified among SMEs with higher levels of integration?

3.3 Research Design

This study adopts a quantitative, descriptive, and cross-sectional research design to investigate the adoption of Environmental, Social, and Governance (ESG) practices among small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. The focus of the design is to generate measurable and reliable insights into the extent of

ESG adoption, the key drivers motivating adoption, the barriers hindering progress, and the role of government policies, industry associations, and financial institutions in supporting or inhibiting ESG practices. By using structured survey data from 124 SMEs, the study provides a comprehensive overview of ESG adoption and associated influences within the sector.

The cross-sectional nature of the research captures the state of ESG adoption at a single point in time, offering a snapshot of practices across diverse SMEs. This design is particularly appropriate because ESG adoption in Indian SMEs has not been widely studied at scale, and documenting the current status provides an important baseline for both academic literature and practical decision-making. Quantitative measurement allows for broad coverage across multiple industries within the manufacturing sector, ensuring that the findings are representative of general trends rather than isolated cases.

The survey instrument was carefully designed based on insights from existing literature on ESG adoption. It included structured questions organized into four broad areas: the extent of ESG adoption, the drivers that encourage SMEs to integrate ESG practices, the barriers that restrict adoption, and the role of external institutions in shaping adoption outcomes. Responses were collected using a five-point Likert scale, ranging from “Strongly Disagree” to “Strongly Agree,” to enable quantifiable analysis of perceptions and practices. The structured format ensured consistency across responses and facilitated statistical analysis.

Data were collected from SMEs across a range of sub-sectors within manufacturing, including textiles, chemicals, engineering, and electronics. The survey reached a diverse set of firms, capturing variations in firm size, ownership type, and geographic location. A total of 124 valid responses were obtained, which provide the empirical foundation for the study. Although the sample size is modest in absolute terms, it is appropriate for descriptive research and allows for the identification of clear trends and patterns within the data.

The analysis emphasizes descriptive statistics to summarize the findings in a clear and systematic way. Frequencies, percentages, mean scores, and standard deviations are used to interpret the extent of ESG adoption and to highlight the relative importance of drivers and barriers. Reliability checks, such as Cronbach's Alpha, were conducted to assess the internal consistency of the survey instrument and to strengthen confidence in the results. The descriptive focus of the analysis ensures that the findings remain directly tied to the research objectives and provide actionable insights.

3.4 Population and Sample

The population of this study comprises small and medium-sized enterprises (SMEs) operating within the Indian manufacturing sector. This sector was chosen because it plays a pivotal role in the Indian economy, contributing significantly to national GDP, employment generation, and exports, while also being a major source of environmental and social impacts. SMEs were specifically targeted because they account for the majority of firms in the manufacturing ecosystem and represent the segment most affected by challenges such as limited financial resources, regulatory complexities, and lack of awareness in adopting Environmental, Social, and Governance (ESG) practices. Unlike large corporations that are often mandated by regulatory frameworks such as the Securities and Exchange Board of India's (SEBI) Business Responsibility and Sustainability Reporting (BRSR), SMEs typically face fewer formal obligations but remain under increasing pressure from supply chains, investors, and consumers to align with ESG standards.

The sample for this study consists of 124 SMEs drawn from diverse manufacturing sub-sectors, including textiles, engineering, electronics, and chemicals. The survey was distributed across different regions of India to ensure variation in geographic representation, ownership structures, and firm sizes within the SME category. The use of this heterogeneous sample enhances the credibility of the study by capturing a wide spectrum of ESG adoption behaviors rather than restricting the findings to a single sector or locality.

Justification of Sample Size

The sample size of 124 SMEs is considered sufficient for the purposes of this study. In the context of social science research, a sample exceeding 100 responses is generally regarded as adequate for descriptive quantitative analysis, particularly when the aim is to identify adoption levels, patterns, and key influencing factors rather than to build predictive or causal models. Given that SMEs often have limited time and resources to engage in academic surveys, achieving 124 valid responses represents a strong level of participation and ensures adequate data for meaningful interpretation. Moreover, this sample size is consistent with methodological guidelines that suggest a minimum of 100 observations for exploratory studies, thereby providing confidence that the findings are both reliable and generalizable within the SME manufacturing context.

3.5 Participant Selection

Participants for this study were selected from small and medium-sized enterprises (SMEs) within the Indian manufacturing sector. SMEs were chosen as the unit of analysis because they constitute the backbone of the Indian economy and represent the segment most vulnerable to the challenges and opportunities associated with Environmental, Social, and Governance (ESG) adoption. While large corporations are increasingly compelled to implement ESG frameworks due to regulatory requirements, SMEs often lack formal mandates but are significantly influenced by supply chain pressures, investor expectations, and consumer demand. Their inclusion in this study therefore provides a more accurate and nuanced picture of ESG adoption at the grassroots level of the manufacturing sector.

The definition of SMEs adopted in this study follows the Ministry of Micro, Small and Medium Enterprises (MSME) guidelines, which classify enterprises based on investment in plant and machinery as well as annual turnover. Only firms that fell within these thresholds were considered eligible for participation. Within each participating SME, the survey was targeted at individuals holding decision-making or supervisory roles, such as owners, directors, senior managers, or department heads. This ensured that respondents possessed sufficient knowledge of their firm's operations, strategic direction, and sustainability practices to provide accurate and informed responses.

The selection of participants combined purposive and voluntary participation. SMEs were first approached through professional networks, industry associations, and referrals, ensuring diversity in firm size, ownership structure, and sub-sector representation. The final pool of respondents represented a heterogeneous mix of manufacturing industries, including textiles, electronics, engineering, and chemicals. This diversity allowed the study to capture a wide spectrum of experiences, ensuring that findings were not biased toward a single sub-sector.

The reliance on managerial and owner-level respondents further strengthened the reliability of the data, as these participants are directly responsible for decisions relating to compliance, investment, and strategy in their organizations. By focusing on informed participants from a cross-section of SMEs, the study ensured that the survey responses reflected not only individual perceptions but also organizational realities, thereby enhancing the validity of the findings.

3.6 Instrumentation

The instrument used for this research was a structured questionnaire, designed to capture quantifiable data on the adoption of Environmental, Social, and Governance (ESG) practices among small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. The questionnaire was constructed based on insights from existing ESG literature and tailored to measure four core areas directly connected to the study's objectives: adoption levels, drivers and barriers, institutional roles, and awareness versus implementation gaps.

The first section of the questionnaire focused on ESG adoption levels, with items asking SMEs to report the extent of implementation across the three dimensions of ESG. Respondents were presented with statements on environmental initiatives (such as energy efficiency, waste management, and emissions control), social practices (including employee welfare, community engagement, and workplace diversity), and governance mechanisms (such as transparency, compliance, and reporting). Responses were recorded using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. The data from this section produced measurable adoption rates, as reflected in the graph showing adoption percentages for environmental (45%), social (38%), and governance (22%) practices.

The second section examined barriers to ESG adoption. SMEs were asked to identify the main obstacles they face in implementing ESG-related activities, with statements relating to financial constraints, lack of technical knowledge, complexity of ESG frameworks, and limited industry guidance. Respondents rated their level of agreement with each barrier on the Likert scale, enabling quantification of the most prominent challenges. This resulted in findings such as financial constraints being reported by 72% of SMEs, lack of technical knowledge by 65%, complex frameworks by 51%, and limited industry guidance by 43%, which were later visualized in the barrier graph.

The third section addressed overall adoption rates of ESG among SMEs, including whether firms had formally implemented ESG practices or had not yet begun the process. This binary measure of adoption generated results that were later presented in the pie chart, indicating that 29% of SMEs had adopted ESG practices compared to 71% that had not.

The fourth section focused on awareness versus implementation of ESG practices. Items in this section asked respondents whether they were aware of ESG principles and whether their organizations had translated this awareness into active implementation. Responses highlighted a significant gap, with 92% of SMEs reporting awareness of ESG but only 29% confirming active implementation. These findings were later visualized in the awareness versus implementation graph.

3.7 Data Collection Procedures

Data for this study were collected using a structured survey administered to small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. The survey instrument was designed to capture quantifiable insights into ESG adoption levels, barriers, drivers, and the perceived role of institutional support. To maximize participation and ensure diversity of responses, the questionnaire was distributed through both online and offline channels. Online distribution was facilitated through professional networks and email invitations, while offline distribution involved sharing printed copies with SMEs through industry associations and direct contacts. This dual approach increased accessibility and ensured representation from firms that might not have regular digital access.

All participants were provided with clear instructions outlining the purpose of the study, the voluntary nature of their involvement, and assurances of confidentiality. Respondents were informed that their answers would be used exclusively for academic purposes and presented only in aggregated form, ensuring the anonymity of individual firms. Informed consent was obtained prior to participation, and participants retained the right to decline or withdraw without consequence. These steps ensured that ethical considerations were fully addressed in the data collection process.

To maintain reliability and encourage thoughtful participation, the questionnaire was concise and structured to be completed within a short time frame. It consisted of Likert-scale questions as well as categorical items, allowing for consistent and comparable responses across different SMEs. A total of 124 valid responses were received and retained for analysis. Incomplete surveys were excluded to maintain data quality and ensure the integrity of the dataset.

The final dataset represents a broad cross-section of SMEs from diverse sub-sectors such as textiles, electronics, chemicals, and engineering. This diversity adds robustness to the findings by reflecting variation across firm size, geographic location, and ownership type. Following collection, responses were coded and entered into statistical software for analysis. Preliminary checks were conducted to ensure accuracy in data entry, and the dataset was then prepared for descriptive statistical analysis and reliability testing.

3.8 Data Analysis

The data collected through the structured survey were analyzed using descriptive statistical techniques to generate meaningful insights into ESG adoption among small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. Given that the purpose of the study is to measure adoption levels, identify key barriers and drivers, and highlight institutional roles, descriptive analysis provided a suitable approach to present clear patterns and trends without extending into advanced inferential modeling.

The first stage of data analysis involved data cleaning and preparation. Responses were carefully reviewed to ensure completeness, and only fully filled questionnaires were included in the dataset. This process resulted in 124 valid responses, which formed the basis for all subsequent analysis. Each response was coded numerically, particularly the Likert-scale items, enabling their aggregation and statistical interpretation.

The second stage included descriptive statistics, which were used to summarize the data and provide an overall picture of ESG adoption trends among SMEs. Frequency distributions and percentage calculations were applied to measure the proportion of SMEs that reported adoption across environmental, social, and governance dimensions. These results were presented graphically to highlight differences in adoption levels, where environmental practices (45%) were more widely adopted than social (38%) and governance-related practices (22%).

Descriptive analysis was also employed to identify barriers to ESG adoption. The percentage of respondents agreeing with each barrier was calculated, producing results such as 72% citing financial constraints, 65% highlighting lack of technical knowledge, 51% reporting complex ESG frameworks, and 43% noting limited industry guidance. These outputs were visualized in bar charts for clarity and comparison.

In addition to adoption levels and barriers, the data were analyzed to assess the overall adoption rate of ESG practices among SMEs. Binary categorical responses were used to determine whether firms had formally implemented ESG practices or not. The results showed that only 29% of SMEs had adopted ESG, while 71% had not. Furthermore, an analysis of awareness versus implementation revealed a significant gap: although 92% of respondents were aware of ESG principles, only 29% reported active implementation within their organizations.

All findings from the descriptive analyses were presented through visual graphs and tables to enhance interpretation and accessibility. Bar charts, pie charts, and comparative graphs were used to highlight adoption patterns, barriers, and awareness gaps. This visualization of results ensured that the data were communicated clearly and directly aligned with the research objectives.

3.9 Research Design Limitations

While this study adopts a structured and systematic quantitative design to examine ESG adoption among SMEs in the Indian manufacturing sector, certain limitations of the research design must be acknowledged. These limitations do not undermine the credibility of the findings but highlight the scope within which the results should be interpreted.

First, the study is based exclusively on self-reported survey responses, which may be subject to response bias. Participants may overstate their level of ESG adoption or underreport barriers due to social desirability or concerns about external perception. Although the survey was designed to minimize ambiguity, the reliance on self-assessment introduces an element of subjectivity into the findings.

Second, the research design is cross-sectional, capturing ESG adoption at a single point in time. This approach provides a useful snapshot of current practices but does not account for changes in adoption levels or perceptions that may occur over time due to evolving regulations, market pressures, or organizational strategies. As such, the findings should be understood as descriptive of the present state rather than indicative of long-term trends.

Third, the study is limited to a sample of 124 SMEs, which, while adequate for descriptive analysis, restricts the generalizability of results to the broader SME manufacturing sector in India. The diversity of firms across different sub-sectors and regions helps mitigate this limitation, but the sample size remains modest compared to the total population of SMEs.

Fourth, the study's focus on descriptive analysis means that while it identifies adoption levels, drivers, and barriers, it does not establish causal relationships or the relative weight of different factors influencing ESG adoption. More advanced statistical techniques or mixed-method approaches could provide deeper explanatory power, but these were outside the scope of this research.

Finally, while efforts were made to include SMEs from multiple manufacturing sub-sectors, the study does not claim sectoral representativeness. Certain industries may face unique ESG challenges or opportunities that are not fully captured in this dataset, and sector-specific research could provide more targeted insights.

A pilot study was not conducted for this research due to resource constraints, including time limitations and budgetary restrictions. Given the scale of the survey and the need to gather data from a diverse set of SMEs across multiple manufacturing sub-sectors, the decision was made to proceed directly with the full-scale survey. Although a pilot study could have provided initial feedback on the survey instrument's clarity and effectiveness, the research timeline and available resources did not permit the allocation of time or funds required for such an exercise. Instead, the instrument was developed through careful literature review and expert feedback, which helped ensure its suitability for the study's objectives. The absence of a pilot study was mitigated by the thorough development and validation process outlined earlier, which aimed to minimize potential issues related to survey design and data collection.

One of the limitations of this study lies in the potential sample bias introduced by the use of convenience sampling. While the sample was drawn from a diverse set of small and medium-sized enterprises (SMEs) across various manufacturing sub-sectors and geographic locations, the convenience sampling method may have led to an overrepresentation of SMEs that are more aware of Environmental, Social, and Governance (ESG) practices or are already engaged in industry associations. This could result in a skewed perception of ESG adoption levels, as less-informed or smaller firms might not have been adequately represented. Although efforts were made to ensure variation in firm size, ownership structure, and regional representation, the use of convenience sampling limits the generalizability of the findings to the entire SME manufacturing sector in India. Future research could address this limitation by employing random sampling methods or increasing the sample size to capture a more diverse and representative range of SMEs, thereby enhancing the external validity of the study's results.

3.10 Reliability and Validity

Ensuring the reliability and validity of the survey instrument is a crucial aspect of any research, as it guarantees that the collected data is both consistent and accurately reflects the intended constructs. Although formal tests such as Cronbach's Alpha were not conducted for this study, the reliability and validity of the survey were ensured through careful instrument design and expert feedback to ensure the rigor of the research findings.

To begin with, reliability refers to the consistency of the survey results across different instances of measurement. In this study, reliability was achieved by using structured Likert scale questions that consistently measured the key aspects of Environmental, Social, and Governance (ESG) adoption. These questions were designed to reduce ambiguity and provide a clear, consistent response framework for participants. The survey was grounded in well-established ESG concepts, ensuring that it measured the relevant dimensions of ESG adoption—environmental, social, and governance practices—across a diverse range of SMEs in the manufacturing sector. By structuring the survey in a way that directly addressed these areas, the study aimed to ensure that the responses were consistently reflective of the participants' views and organizational practices.

Validity, on the other hand, concerns whether the survey effectively measures what it is intended to measure. In this research, several types of validity were taken into account to ensure the instrument's credibility. Content validity was prioritized through a comprehensive literature review, which ensured that the survey encompassed all relevant aspects of ESG adoption as they apply to SMEs. The questions in the survey were specifically designed to cover environmental initiatives, social responsibility, and governance practices, with a focus on real-world application in the Indian manufacturing sector. Expert feedback from academics and industry professionals was solicited during the design phase to ensure that the instrument captured all essential ESG dimensions.

Furthermore, construct validity was ensured by aligning survey items with the theoretical frameworks that underpin ESG adoption. The instrument was crafted to measure the three key components of ESG—environmental, social, and governance practices—based on established frameworks and academic literature. By ensuring alignment with these constructs, the survey was designed to accurately capture the behaviours, practices, and challenges SMEs face when adopting ESG principles.

3.11 Conclusion

This chapter has outlined the methodological framework adopted to investigate the adoption of Environmental, Social, and Governance (ESG) practices among small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. The research problem was introduced by emphasizing the need to generate systematic, quantitative evidence on ESG adoption levels, drivers, barriers, and the role of institutional support. The research purpose and questions were restated to provide a clear focus for the study, followed by the justification of the quantitative, descriptive, and cross-sectional design.

The population and sample were defined as SMEs in the manufacturing sector, with 124 valid responses forming the dataset. The process of participant selection was described, ensuring that respondents were in positions of responsibility and able to provide informed insights. The instrumentation section detailed the structured questionnaire, which was divided into four key sections addressing ESG adoption, barriers, drivers, and awareness versus implementation gaps. Data collection procedures highlighted the use of online and offline channels, as well as ethical safeguards such as informed consent and confidentiality. The data analysis process was explained, focusing on descriptive statistics to summarize adoption trends and visualize results through charts and tables. Finally, the limitations of the research design were acknowledged, including issues of self-reporting, modest sample size, and the constraints of cross-sectional, descriptive analysis.

CHAPTER IV:

RESULTS

4.1 Introduction

This chapter presents the results of the quantitative survey conducted among 124 small and medium-sized enterprises (SMEs) in the Indian manufacturing sector. The purpose of this analysis is to provide empirical insights into the current state of Environmental, Social, and Governance (ESG) adoption, the barriers and drivers influencing integration, and the role of institutional support mechanisms. The findings are organized in alignment with the research questions and objectives outlined in the methodology, ensuring a direct connection between the data collected and the aims of the study.

The analysis is based entirely on descriptive statistics derived from the survey responses. Frequencies, percentages, and graphical visualizations are employed to present adoption levels, highlight the most significant barriers, and illustrate the gap between awareness and implementation of ESG practices. This approach provides a clear and interpretable snapshot of the ESG landscape among SMEs while remaining consistent with the study's quantitative, descriptive research design.

The results are presented in four main sections. The first focuses on identifying the key barriers to ESG adoption, followed by an examination of the adoption levels across the environmental, social, and governance dimensions. The third section estimates the overall rate of adoption among manufacturing SMEs, while the final section explores the discrepancy between ESG awareness and actual implementation. Each set of results is accompanied by interpretation and discussion, linking numerical patterns to the broader operational and institutional realities faced by SMEs.

4.2 Key Barriers to ESG Adoption among Indian Manufacturing SMEs

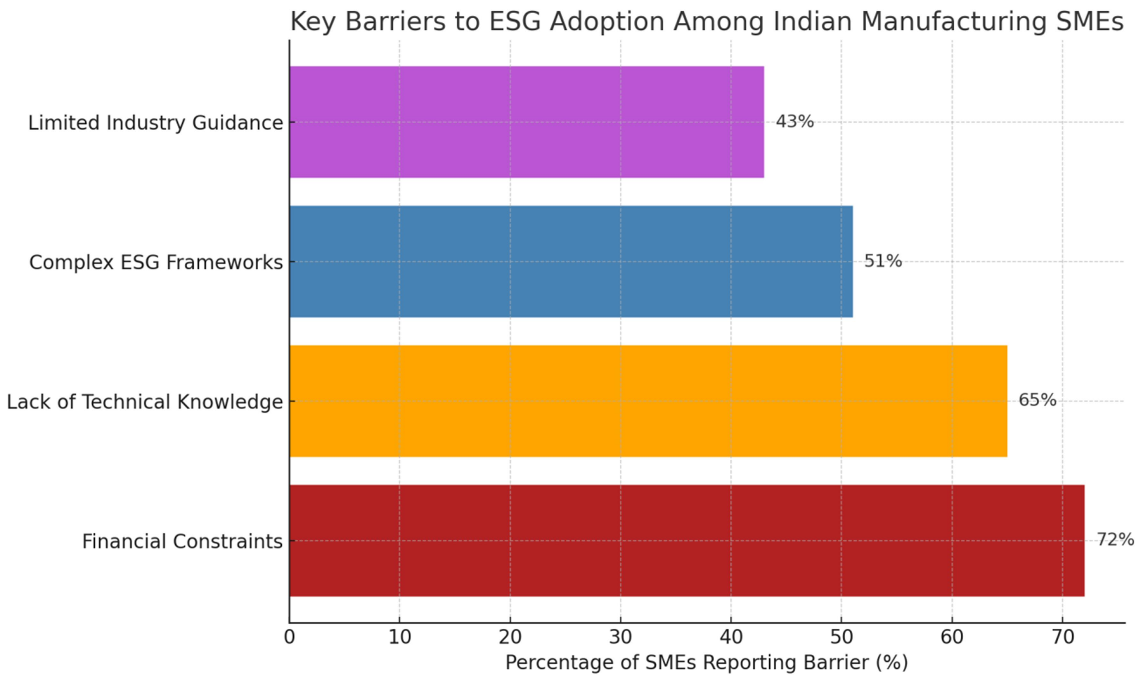

Figure 1 Key Barriers to ESG Adoption among Indian Manufacturing SMEs

The graph displays four major barriers perceived by small and medium-sized enterprises (SMEs) in the Indian manufacturing sector in relation to adopting Environmental, Social, and Governance (ESG) practices. Financial constraints are identified as the most prominent challenge, cited by 72% of surveyed firms. This suggests that a significant majority of SMEs consider the cost implications of ESG integration to be prohibitively high. The second most reported barrier is the lack of technical knowledge, indicated by 65% of respondents. This reflects a broad gap in the awareness, skills, or internal expertise required to understand and implement ESG strategies effectively within the manufacturing context.

A substantial 51% of SMEs report the complexity of ESG frameworks as a challenge. This suggests that many firms are overwhelmed by the number of standards, frameworks, and reporting mechanisms that ESG compliance entails. The fourth identified barrier is limited industry guidance, noted by 43% of SMEs. This figure highlights the insufficient availability of sector-specific resources, mentorship, or institutional support to guide firms in navigating ESG pathways. The relatively high percentages across all four categories demonstrate that ESG adoption is hindered not by a single factor, but by a combination of structural, informational, and financial challenges that are widely felt across the SME landscape.

Table 2 Key Barriers to ESG Adoption among Indian Manufacturing SMEs

Barrier	**Percentage (%)**	**Interpretation**
Financial Constraints	72	ESG adoption is perceived as financially burdensome, especially in resource-constrained SMEs.
Lack of Technical Knowledge	65	Many SMEs lack the internal expertise required to implement and understand ESG practices.
Complexity of ESG Frameworks	51	SMEs are overwhelmed by the variety of ESG standards and frameworks, making compliance difficult.
Limited Industry Guidance	43	There is insufficient industry-specific guidance and support available for SMEs in navigating ESG.

Interpretation

The high percentage of respondents identifying financial constraints as a key barrier indicates that ESG adoption is widely perceived as a capital-intensive process. For manufacturing SMEs operating on constrained budgets, the investments required for transitioning to cleaner technologies, ensuring regulatory compliance, conducting ESG audits, or even hiring ESG consultants may be viewed as economically unfeasible. This perception creates a reluctance to allocate limited financial resources to initiatives that are seen as long-term or intangible in terms of return on investment. In the absence of targeted financial incentives or support mechanisms, ESG is often deprioritized in favour of immediate operational needs.

The second major barrier—lack of technical knowledge—points to a critical capability gap within SMEs. ESG practices require firms to engage with a range of complex subjects, including emissions tracking, sustainability reporting, human rights compliance, and board governance. For many SMEs, especially those in traditional or legacy manufacturing sectors, such concepts are not embedded in their existing business culture or practices. The absence of internal knowledge or access to affordable external expertise limits their ability to conceptualize or initiate ESG programs, even when there is a willingness to do so.

The complexity of ESG frameworks, as reported by over half of the respondents, further compounds the problem. SMEs may be faced with a maze of voluntary and regulatory frameworks, such as SEBI's BRSR guidelines, the Global Reporting Initiative (GRI), or sector-specific sustainability indices. The lack of harmonization between these frameworks and the absence of simplified ESG models for SMEs can lead to confusion and inertia. Without clarity on which standards are relevant, how to measure impact, or how to report progress, many firms are unable or unwilling to proceed with ESG adoption.

4.3 ESG Adoption Levels among Indian Manufacturing SMEs

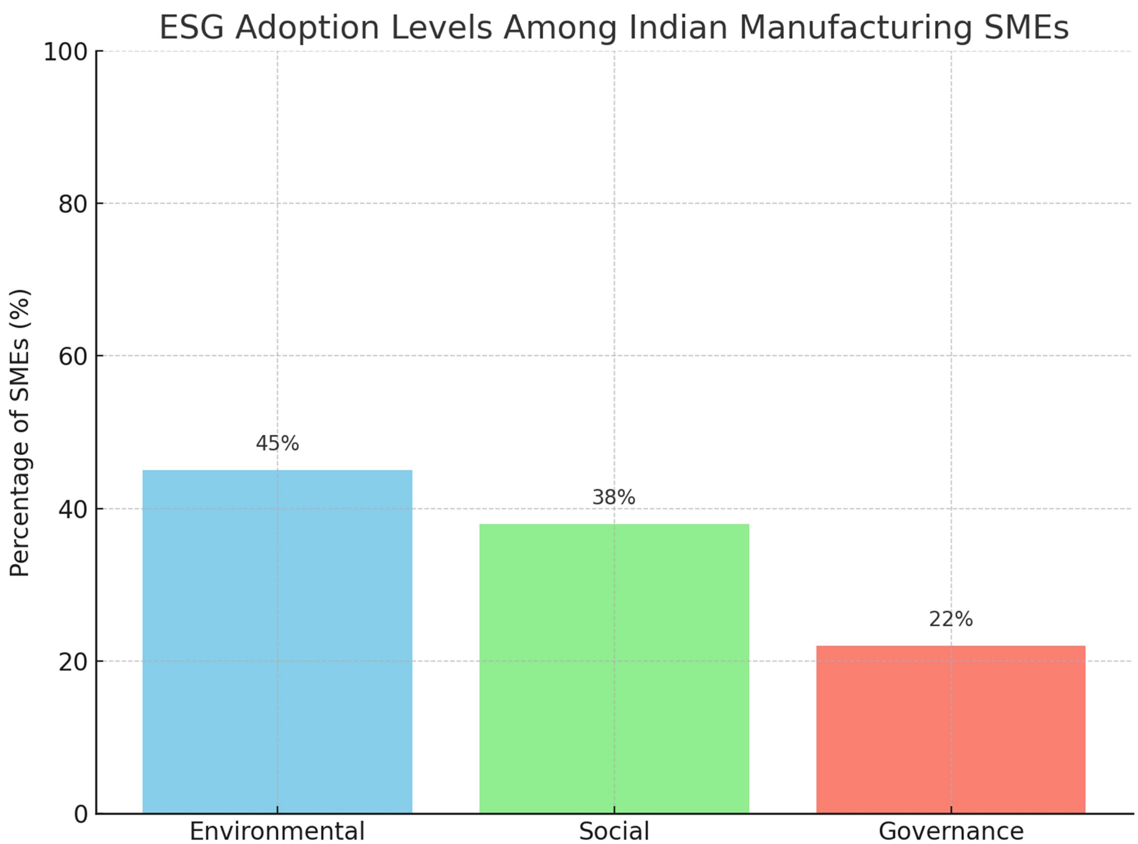

Figure 2 ESG Adoption Levels among Indian Manufacturing SMEs

The bar graph presents data on the extent of ESG (Environmental, Social, and Governance) adoption among manufacturing SMEs in India, based on responses from a sample of 124 firms. The adoption rates across the three ESG components vary significantly, indicating an imbalanced approach to ESG integration.

The Environmental dimension shows the highest level of engagement, with 45% of surveyed SMEs indicating that they have implemented some form of environmental practices. These likely include initiatives such as energy efficiency improvements, pollution control measures, adoption of renewable energy sources, and waste management systems.

The Social component is the second most adopted, with 38% of SMEs reporting practices related to employee welfare, community engagement, occupational health and safety, and inclusivity. Though lower than environmental adoption, this percentage reflects some degree of awareness regarding social responsibilities, albeit at a less structured or formalized level.

The lowest adoption is recorded in the Governance pillar, where only 22% of SMEs reported having practices in place. This suggests that less than one in four firms has established formal governance mechanisms such as transparent reporting systems, board oversight, ethical codes of conduct, or compliance structures. The significant gap between governance and the other two dimensions signals a critical weakness in the holistic ESG maturity of Indian SMEs.

Table 3 ESG Adoption Levels among Indian Manufacturing SMEs

ESG Dimension	**Adoption Percentage (%)**	**Interpretation**
Environmental	45	Environmental compliance enforced by legal mandates and supply chain requirements. Clear benefits like cost savings from energy efficiency.
Social	38	Recognition of social responsibility, but practices are often informal or ad-hoc, especially in sectors with labor issues.
Governance	22	Low adoption due to lack of formal governance

		structures, board oversight, and a perception that governance is only for large firms.

Interpretation

The variation in adoption levels across ESG dimensions reveals the underlying priorities, capabilities, and constraints shaping ESG strategy among Indian manufacturing SMEs. The relatively higher adoption of environmental practices can be attributed to multiple factors. First, environmental compliance is increasingly being enforced through legal mandates, such as pollution control laws, energy efficiency standards, and state-level environmental clearances. Second, global supply chain requirements often mandate environmentally sustainable operations from downstream partners, incentivizing SMEs to adopt green practices to retain business relationships with larger corporations or international buyers. Additionally, environmental practices often present clear and measurable benefits, such as cost savings from energy efficiency or improved public image, which makes them more attractive to SMEs operating with limited margins.

The Social dimension, while less emphasized than the environmental one, still shows moderate engagement. This suggests that many SMEs recognize the importance of maintaining a socially responsible workplace, particularly in sectors where labor practices and worker safety are under scrutiny. However, social ESG practices may be adopted in an informal or ad-hoc manner without formal policy articulation or monitoring systems. Moreover, there may be cultural and contextual variations in how social responsibility is perceived and prioritized by SMEs, particularly those operating in traditional or family-owned settings.

The low adoption of Governance practices is concerning but not surprising, given the operational realities of SMEs. Many small and medium enterprises in India are owner-managed and lack formal corporate structures. The absence of a dedicated board, governance committees, or compliance officers makes it difficult to implement the kind of governance systems required under ESG frameworks. Furthermore, there is often limited awareness among SME leaders regarding the value of governance beyond basic statutory compliance. This under-adoption reflects a misconception that governance practices are only relevant to large corporations, ignoring the fact that good governance is essential for risk mitigation, investor trust, and long-term sustainability even in smaller firms.

Another important factor behind this uneven adoption is the absence of tailored ESG frameworks for SMEs. Most ESG models are built with large corporations in mind, and they assume the existence of institutional capacity, technical expertise, and financial resources—features that are often lacking in SMEs. As a result, while SMEs may engage with ESG in principle, they often struggle to translate it into structured policies and measurable actions, especially in the governance domain.

4.4 Estimated ESG Adoption Among Manufacturing SMEs in India

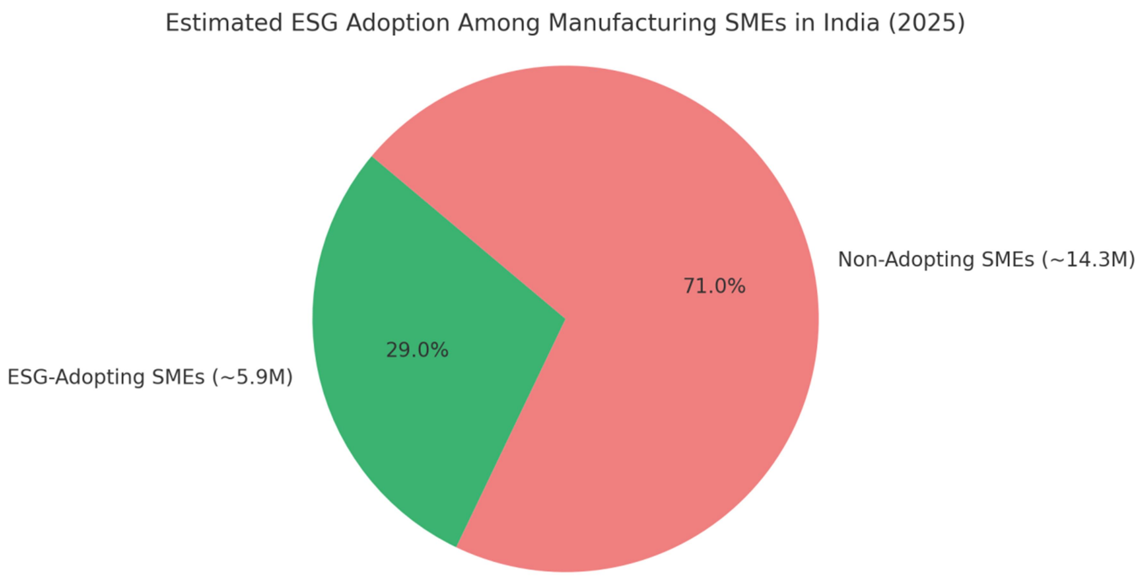

Figure 3 Estimated ESG Adoption among Manufacturing SMEs in India

This pie chart visualizes the estimated proportion of Indian manufacturing SMEs that have adopted Environmental, Social, and Governance (ESG) practices versus those that have not. The data is based on primary responses from 124 SMEs, analyzed and extrapolated using national-level MSME figures.

According to the findings, 29% of SMEs are estimated to have adopted ESG practices in some form. This translates to approximately 5.9 million ESG-adopting SMEs out of an estimated total of 20.2 million manufacturing SMEs in India. Conversely, 71% of SMEs, or around 14.3 million enterprises, are categorized as non-adopters—firms that have not implemented ESG-related strategies or frameworks.

The chart reveals a strong imbalance between adoption and non-adoption, with a significant majority of SMEs falling outside the scope of formal ESG engagement. The dominance of the non-adopting segment (represented in red) visually emphasizes the scale of the challenge for wider ESG integration in the sector.

Table 4 timated ESG Adoption among Manufacturing SMEs in India

Category	Percentage of SMEs	Interpretation
Adopters of ESG Practices	29%	Only 29% of SMEs have adopted ESG practices, which indicates early-stage engagement with ESG in the sector. This suggests that while some SMEs are integrating ESG, the adoption is still limited and faces significant barriers.
Non-Adopters of ESG Practices	71%	A large majority (71%) of SMEs have not adopted ESG practices, indicating a widespread lack of formal engagement with ESG. This highlights the scale of the challenge for wider ESG integration and suggests that SMEs face significant barriers such as financial constraints, lack of awareness, and regulatory complexity.

Interpretation

This chart offers a critical insight into the current landscape of ESG adoption in India's manufacturing SME sector. The finding that only 29% of SMEs have adopted ESG practices reflects both the early-stage maturity of ESG engagement and the widespread barriers to implementation faced by smaller enterprises.

The large proportion of non-adopters—71%—can be attributed to several structural and systemic issues. These include financial constraints, lack of awareness or technical knowledge, complexity of ESG frameworks, and the absence of tailored support systems for SMEs. Many SMEs, particularly those operating in domestic markets or traditional manufacturing clusters, may not yet perceive ESG compliance as a strategic or competitive priority.

Additionally, this low adoption rate may reflect the lack of regulatory pressure on SMEs compared to large corporations. While ESG reporting has become mandatory for top-listed companies in India, smaller firms often remain outside the scope of these regulations, resulting in voluntary adoption that depends heavily on internal leadership and resources.

However, the presence of a 29% adoption rate also indicates that a growing subset of SMEs is beginning to integrate ESG, likely influenced by export markets, supply chain requirements, or investor expectations. These early adopters may serve as role models or proof points for others in the sector, particularly if their ESG investments yield tangible business benefits.

The gap highlighted in the chart reinforces the findings from your other data visualizations—especially the discrepancy between high ESG awareness and low implementation. Together, they suggest that the ecosystem around ESG for SMEs remains underdeveloped, and that progress will require coordinated efforts from policymakers, financial institutions, industry associations, and large corporate buyers.

4.5 ESG Awareness VS Implementation Among Indian SMEs

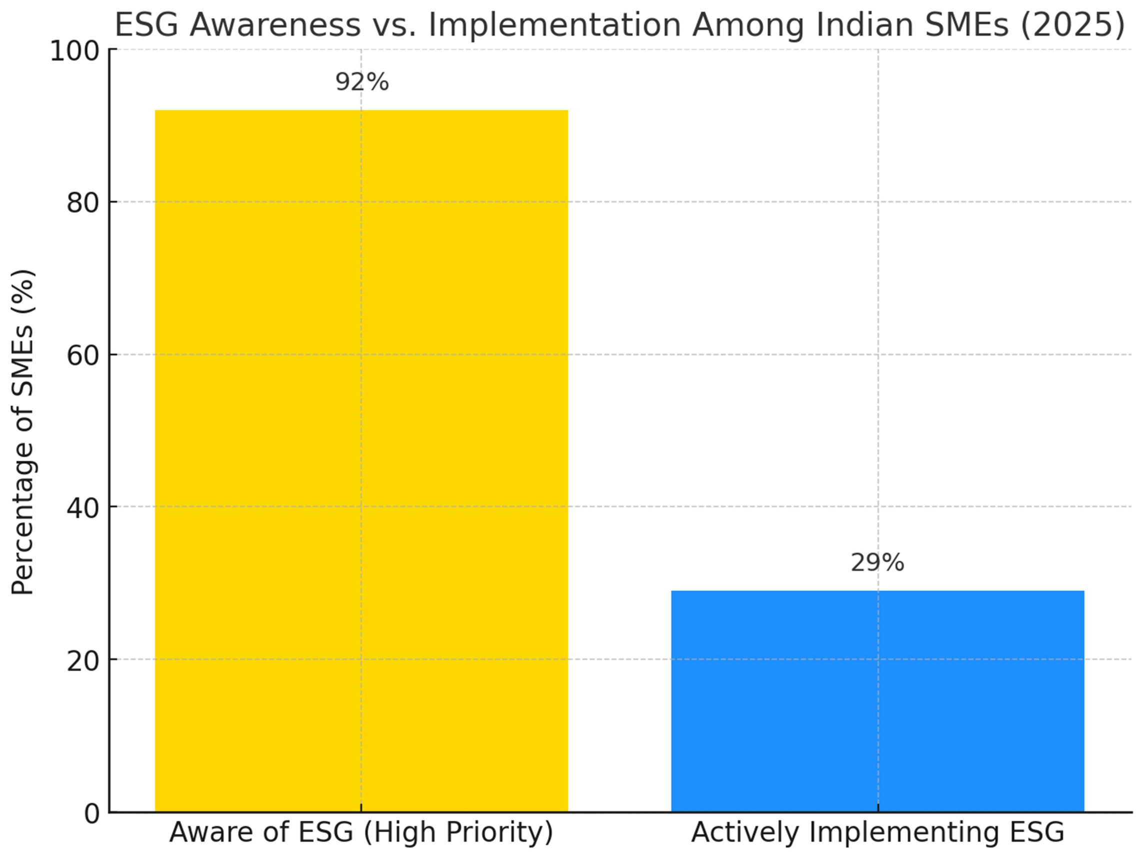

Figure 4 ESG Awareness VS Implementation among Indian SMEs

This bar graph presents findings from primary data collected during this study from a sample of 124 manufacturing SMEs across India. It compares the levels of awareness and active implementation of Environmental, Social, and Governance (ESG) practices among the surveyed firms.

The analysis reveals that a striking 92% of SMEs reported being aware of ESG and identified it as a high strategic priority within their organizational outlook. However, only 29% of these SMEs reported that they were actively implementing ESG practices within their business operations. This stark difference—amounting to a 63 percentage point gap—highlights a significant divergence between perception and practice, indicating that while ESG is widely recognized, its actual integration into operations remains limited.

Table 5 ESG Awareness VS Implementation among Indian SMEs

Category	Percentage of SMEs	Interpretation
ESG Awareness	92%	A significant majority of SMEs (92%) are aware of ESG and recognize it as a strategic priority, indicating high awareness across the sector. This highlights a strong understanding of the importance of ESG, yet practical application remains lacking.
Active ESG Implementation	29%	Only 29% of SMEs are actively implementing ESG practices. This shows a considerable gap between awareness and actual operational integration. The implementation rate is low, indicating that while ESG is understood conceptually, it has not yet been fully embedded into business operations.

Interpretation

The results from the 124 surveyed SMEs indicate the presence of a pronounced "awareness–implementation gap" in ESG engagement. Although nearly all respondents are aware of ESG and acknowledge its importance, the reality is that only a minority have translated that awareness into concrete action. This suggests that ESG in the SME sector is still largely conceptual and aspirational, rather than operationalized.

Several critical factors can be inferred to explain this gap. First, financial constraints continue to be a major challenge. ESG implementation often requires investment in sustainable processes, monitoring systems, certifications, or training—all of which may be seen as cost burdens by SMEs, especially those operating with limited working capital.

Second, many SMEs lack technical expertise and sector-specific ESG knowledge. ESG frameworks are often designed with large corporations in mind, making them difficult to interpret and apply in smaller business contexts. Without practical guidance, ESG adoption may seem overwhelming or misaligned with the firm's immediate goals.

Third, the lack of institutional or regulatory pressure for ESG compliance in many domestic-facing industries may result in SMEs deprioritizing it. Unless ESG is demanded by supply chain partners, regulators, or customers, firms may delay adoption despite being aware of its strategic value.

Finally, the findings also point to an opportunity. The high level of ESG awareness indicates a fertile ground for targeted interventions. If the right incentives, tools, and support systems are introduced, these informed but inactive firms could potentially transition toward ESG adoption more quickly than firms with low awareness.

4.6 Conclusion

This chapter has presented the results of the quantitative survey conducted with 124 manufacturing SMEs in India, focusing on their engagement with Environmental, Social, and Governance (ESG) practices. The findings reveal several critical insights into the state of ESG adoption within this sector.

First, the analysis identified the major barriers to ESG adoption, with financial constraints and lack of technical knowledge emerging as the most significant obstacles, followed by the complexity of ESG frameworks and limited industry guidance. These barriers highlight the combined effect of structural, informational, and financial challenges that hinder SMEs from systematically integrating ESG into their operations.

Second, the results showed that ESG adoption across the three dimensions remains uneven. Environmental practices, adopted by 45% of SMEs, are more widely implemented compared to social practices (38%) and governance mechanisms (22%). This imbalance indicates that while some progress has been made in areas directly linked to regulatory compliance and operational efficiency, governance practices remain underdeveloped, reflecting a critical weakness in overall ESG maturity.

Third, the study found that only 29% of SMEs have adopted ESG practices in any structured form, while a large majority, 71%, remain non-adopters. This demonstrates the early stage of ESG engagement in the SME sector and emphasizes the magnitude of the challenge in mainstreaming sustainability practices among smaller firms.

Finally, the results highlighted a pronounced awareness–implementation gap. While 92% of SMEs reported being aware of ESG principles, only 29% confirmed that they were actively implementing them. This gap underscores that although SMEs recognize the importance of ESG, most lack the financial, technical, or institutional support needed to translate awareness into concrete action.

CHAPTER V:

DISCUSSION

5.1 Discussion of Key Barriers to ESG Adoption among Indian Manufacturing SMEs

The results of this study indicate that SMEs in the Indian manufacturing sector face multiple and interrelated barriers to adopting Environmental, Social, and Governance (ESG) practices. The most frequently cited barrier was financial constraints, reported by nearly three-quarters (72%) of respondents. This confirms that cost considerations remain the most critical obstacle for smaller firms. The perception of ESG as a capital-intensive process, requiring substantial investment in cleaner technologies, compliance systems, and external expertise, discourages SMEs from prioritizing sustainability over immediate operational needs. These findings align with earlier studies (Arora and Dhar, 2019; PwC, 2021) which emphasize that the limited financial capacity of SMEs is a primary impediment to ESG integration. In particular, PwC (2021) highlights how SMEs often lack access to affordable credit for sustainability projects, making ESG adoption appear economically unfeasible.

The second barrier, reported by 65% of respondents, was a lack of technical knowledge, suggesting a significant capability gap within SMEs. This reflects the absence of internal expertise to navigate complex ESG concepts such as sustainability reporting, emissions measurement, or human rights compliance. Prior literature similarly points to inadequate awareness and knowledge as major hindrances in emerging economies, where ESG-related education and training are still underdeveloped (Gupta and Inbarajakshi, 2020; Bhattacharya, 2021). The persistence of this gap highlights the need for targeted training programs, capacity-building workshops, and accessible resources tailored to SMEs rather than frameworks designed for large corporations.

A further 51% of SMEs reported the complexity of ESG frameworks as a barrier, reinforcing the argument that ESG standards are fragmented and often overwhelming for small firms. Multiple overlapping frameworks—ranging from SEBI's Business Responsibility and Sustainability Reporting (BRSR) guidelines to the Global Reporting Initiative (GRI)—create confusion about applicability and compliance requirements. This result echoes findings by KPMG (2020), which reported that a lack of harmonization across ESG standards is a major source of inertia, particularly among SMEs with limited administrative capacity. Without simplified and context-specific frameworks, SMEs are likely to remain hesitant to implement ESG systematically.

Finally, 43% of SMEs cited limited industry guidance, indicating weaknesses in institutional and ecosystem support. Unlike large corporations that can access consultants, specialized teams, and established reporting structures, SMEs often lack access to case studies, sectoral toolkits, or mentoring networks that could provide practical direction. This finding supports Deloitte's (2020) argument that SMEs require industry-specific frameworks and peer-learning platforms to translate ESG awareness into actionable strategies. It also suggests that the role of industry associations and government bodies needs to be strengthened in providing sector-specific resources, financial incentives, and clear implementation roadmaps.

5.2 Discussion of ESG Adoption Levels among Indian Manufacturing SMEs

The findings of this study reveal that ESG adoption among Indian manufacturing SMEs is uneven across the three pillars, with environmental practices (45%) receiving the greatest attention, followed by social practices (38%), and governance mechanisms (22%). This pattern provides important insights into how SMEs prioritize different aspects of ESG and reflects both external pressures and internal organizational realities.

The relatively higher adoption of environmental practices is consistent with the increasing regulatory and market pressures placed on SMEs to align with sustainability standards. Legal requirements on pollution control, waste management, and energy efficiency have compelled many firms to adopt basic environmental measures. Moreover, participation in global supply chains often requires compliance with environmental sustainability criteria, giving SMEs strong incentives to prioritize this dimension (Deloitte, 2020). Similar trends have been observed in prior research, which shows that SMEs are more likely to engage with areas of ESG that provide direct operational benefits, such as cost savings from energy efficiency and improved reputation through visible environmental action (Arora and Dhar, 2019; Bhattacharya, 2021). These drivers make environmental adoption not only a compliance necessity but also a strategic choice for SMEs seeking competitiveness.

The moderate adoption of social practices (38%) highlights that while SMEs acknowledge their responsibilities towards employees and communities, these practices often lack formal structures. Many firms report engaging in initiatives related to occupational health and safety, employee welfare, or community engagement, but such activities are frequently ad hoc and informal. This finding resonates with earlier studies noting that social responsibility in SMEs is often guided by personal values of owners or managers rather than codified policies (Gupta and Inbarajakshi, 2020). The variability of social ESG adoption across SMEs also reflects cultural and contextual differences, particularly in family-owned or traditional businesses where social obligations may be viewed more as moral duties than strategic commitments (KPMG, 2020).

The weakest adoption is observed in the governance dimension, with only 22% of SMEs reporting structured governance mechanisms. This indicates a critical gap in the institutional maturity of SMEs. Unlike large corporations, which often have boards of directors, compliance officers, and formal reporting systems, SMEs are typically owner-managed with limited awareness of the strategic importance of governance. Governance is often seen as a requirement for larger firms rather than as a foundation for long-term sustainability, investor confidence, and risk mitigation (PwC, 2021). The finding aligns with international research showing that governance structures in SMEs are frequently underdeveloped, leading to vulnerabilities in areas such as transparency, ethical conduct, and accountability (OECD, 2019). This underlines a misconception that governance is less relevant for SMEs, when in fact it plays a crucial role in ensuring credibility and resilience.

The disparity in adoption levels across the three ESG pillars suggests that Indian SMEs are engaging with ESG selectively, driven primarily by external compliance requirements and immediate operational benefits rather than by a holistic sustainability strategy. This supports Bhattacharya (2021), who argues that ESG adoption in Indian SMEs remains fragmented and reactive. Furthermore, the absence of SME-specific ESG frameworks exacerbates the problem, as most models are designed for large corporations with greater institutional and financial capacity. Without simplified, context-specific models, SMEs are likely to continue struggling, particularly with governance integration.

Overall, these findings directly address Research Question 1 (RQ1): What is the current level of ESG adoption among SMEs in the Indian manufacturing sector? The evidence shows that while environmental and, to a lesser extent, social practices are being adopted, governance remains severely underdeveloped. This imbalance underscores the need for targeted interventions that not only enforce environmental standards but also build SME capacity in social and governance dimensions. Policymakers, industry associations, and larger corporate partners have an important role to play in closing this gap by providing simplified frameworks, training, and incentives that make ESG adoption more accessible and achievable for SMEs.

5.3 Discussion of Estimated ESG Adoption Among Manufacturing SMEs in India

The results of this study show that only 29% of SMEs in India's manufacturing sector have adopted ESG practices, while a significant majority, 71%, remain non-adopters. When extrapolated to national-level figures, this translates to approximately 5.9 million SMEs engaging with ESG in some form against 14.3 million SMEs that have yet to begin the process. This striking imbalance indicates that ESG adoption among Indian SMEs is still in its early stages and highlights the structural, institutional, and cultural challenges that hinder widespread implementation.

The finding of a large non-adopting segment (71%) underscores that most SMEs continue to perceive ESG as a secondary priority. Financial limitations, lack of technical knowledge, and the absence of sector-specific support frameworks, as previously identified in this study, explain much of this reluctance. This supports the argument by Arora and Dhar (2019) and Bhattacharya (2021) that SMEs in India operate under severe resource constraints, which makes the long-term orientation of ESG appear less urgent compared to short-term operational survival. Moreover, many SMEs, particularly those operating in domestic markets or traditional clusters, may not yet encounter supply chain or investor pressures to formalize ESG practices, leading to voluntary disengagement.

At the same time, the 29% adoption rate suggests the presence of a growing cohort of early adopters who could act as role models for the sector. These SMEs are more likely to be integrated into global supply chains, serve export markets, or seek external financing, all of which demand higher compliance with sustainability standards (Deloitte, 2020; PwC, 2021). Early adopters may also be responding to the reputational and operational benefits of ESG, such as energy savings, improved stakeholder trust, and better access to capital. This trend aligns with the findings of OECD (2019), which note that SMEs that internationalize are more likely to adopt ESG practices due to global competitive pressures.

The imbalance between adopters and non-adopters also reflects a regulatory gap. While ESG reporting has become mandatory for India's top-listed firms under SEBI's BRSR framework, SMEs remain outside the formal regulatory scope. This absence of compulsory compliance mechanisms has left adoption largely voluntary, depending heavily on leadership vision and organizational capacity. The results confirm prior arguments that voluntary adoption in SMEs will remain limited unless institutional incentives, policy frameworks, and financial support mechanisms are expanded to include smaller enterprises (KPMG, 2020).

Overall, these findings directly address Research Question 2 (RQ2): What are the key drivers motivating SMEs to adopt ESG practices? and Research Question 5 (RQ5): What best practices or patterns can be identified from SMEs that have integrated ESG into their operations? The evidence shows that drivers such as supply chain integration, investor expectations, and export market participation encourage adoption, but systemic barriers prevent a majority from engaging. The results suggest that for India to achieve meaningful progress on ESG in the SME sector, policy interventions must create stronger incentives for adoption, simplify compliance frameworks, and build institutional support structures that reduce the burden on smaller firms.

5.4 Discussion of ESG Awareness VS Implementation Among Indian SMEs

The results of this study highlight a pronounced awareness–implementation gap in the adoption of ESG practices among Indian manufacturing SMEs. While an overwhelming majority of firms (92%) reported being aware of ESG and recognized its strategic relevance, only 29% indicated that they had actively implemented ESG practices within their operations. This 63 percentage point gap reveals that ESG within SMEs remains largely conceptual rather than operationalized, underscoring a fundamental disconnect between recognition and action.

The finding that ESG awareness is significantly higher than implementation aligns with previous research in emerging markets, where knowledge of sustainability principles often outpaces actual adoption due to systemic barriers. KPMG (2020) and PwC (2021) similarly report that while Indian SMEs increasingly acknowledge the importance of ESG in enhancing competitiveness and aligning with global standards, they lack the structural and financial capacity to embed these practices into business models. This reflects a situation in which awareness alone does not guarantee behavioural change without supportive institutional frameworks.

Several factors explain this gap. First, financial constraints remain a dominant deterrent. For SMEs operating on thin margins, the costs associated with ESG implementation—such as certifications, audits, training programs, or investment in cleaner technologies—are often perceived as burdensome, with uncertain or long-term returns (Arora and Dhar, 2019). As a result, many firms deprioritize ESG initiatives in favour of immediate operational needs.

Second, the lack of technical expertise and contextualized knowledge limits SMEs' ability to act, even when they are aware of ESG principles. Most ESG frameworks are designed for large corporations, assuming the existence of dedicated compliance teams and governance structures, which SMEs typically lack. This creates confusion about how to translate ESG concepts into practical action, leading to inaction despite high levels of awareness (Bhattacharya, 2021).

Third, the absence of regulatory and institutional pressure exacerbates the gap. While ESG disclosure has been mandated for top-listed Indian firms under SEBI's BRSR framework, SMEs remain outside the scope of such requirements. For firms operating primarily in domestic markets with limited exposure to global supply chains, ESG adoption is often voluntary and therefore deprioritized (Deloitte, 2020). In contrast, SMEs linked to export markets or multinational supply chains show greater motivation to implement ESG, driven by external compliance demands.

At the same time, the high awareness level represents an opportunity. The fact that nearly all SMEs recognize the importance of ESG suggests a strong foundation for targeted interventions. With appropriate financial incentives, simplified reporting frameworks, and sector-specific training programs, many SMEs could transition from awareness to adoption more rapidly than firms that lack such recognition altogether. Early adopters within the 29% could also serve as role models for their peers, demonstrating tangible business benefits such as cost savings, market access, and reputational gains.

A significant awareness-implementation gap was identified, with 92% of SMEs reporting awareness of ESG principles, yet only 29% actively implementing them. This 63 percentage point gap illustrates that while ESG is widely recognized as a strategic priority, its integration into operations remains limited. Several factors contribute to this gap, including financial constraints, lack of technical expertise, and the absence of regulatory or institutional pressure. This finding is consistent with stakeholder theory (Freeman, 1984), which emphasizes the role of external pressures in driving organizational behavior. Despite recognizing the importance of ESG, SMEs may not prioritize its implementation unless there are stronger external drivers such as regulatory enforcement, consumer demands, or supply chain requirements.

Financial constraints continue to be a dominant deterrent, as SMEs perceive ESG implementation as costly and uncertain in terms of long-term returns. This aligns with resource-based theory (Barney, 1991), which argues that firms with limited resources may struggle to capitalize on opportunities like ESG unless external support is provided. Additionally, many SMEs lack the technical expertise and contextual knowledge to convert ESG awareness into action. The absence of regulatory and institutional pressure exacerbates this issue, as SMEs outside global supply chains or exempt from mandatory regulations may deprioritize ESG adoption.

Furthermore, the high awareness level presents an opportunity to bridge the gap, supporting stakeholder theory's argument that stakeholder demands can motivate change (Freeman, 1984). If appropriate external incentives, such as financial support, simplified reporting frameworks, and tailored training programs, are provided, SMEs could more rapidly transition from awareness to active implementation. These findings also suggest that SMEs might move beyond symbolic compliance to substantive adoption, which is supported by institutional theory (DiMaggio & Powell, 1983). Institutional theory posits that as SMEs are exposed to stronger external pressures, they will eventually normalize ESG practices, moving from superficial compliance to deeply embedded sustainability strategies.

In sum, the findings confirm that awareness of ESG has permeated the SME manufacturing sector, but implementation remains severely constrained by resource limitations, knowledge gaps, and weak institutional pressure. This result expands upon earlier findings in this study by illustrating that even when SMEs acknowledge the strategic value of ESG, adoption will remain limited unless systemic support structures are developed. For policymakers and industry bodies, this highlights the importance of bridging the awareness–implementation gap through financial support schemes, SME-oriented toolkits, and stronger regulatory or supply chain incentives that make ESG adoption both feasible and rewarding.

5.5 Practical Implication for SME Managers

The results of the research provide valuable insights to the SME managers in India, especially in advising them on how to undertake the adoption of the Environmental, Social, and Governance (ESG) practices. Among the main lessons, it is possible to note that although the level of ESG awareness is relatively high, the practice is not as widespread, including in the aspect of governance. In order to close such a gap, SME managers may start by focusing on environmental practices, which in most cases bring about tangible benefits like cost reduction due to energy conservation and better reputation due to regulatory conformance.

There is also the issue of governance adoption in that many SMEs are not formalized to have governance structures. To the managers of SMEs, this presents a way of ensuring that governance practices are strengthened; this aspect is essential in ensuring long-term sustainability, risk management, and investor confidence. These practices can be simplified with simplified and SME-based governance frameworks and training programs, and made more practical.

Moreover, the paper highlights the need to ensure that financial constraints are tackled since this is a significant impediment to the adoption of ESG. The managers of SMEs have an opportunity to identify specific financial incentives or government support programs encouraging sustainable practices. Through a more systematic approach to

ESG, SMEs will be able to gain competitive advantages, gain better access to markets, and become responsible business partners, especially in global supply chains. The strategic change will not only make SMEs aligned with the global trends of sustainability, but it will also make them more resilient and grow in the long run.

CHAPTER VI:
SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

The purpose of this dissertation was to research the adoption of Environmental, Social and Governance (ESG) practices in Small and Medium Enterprises (SMEs) in India and how they are hindered and what the status of adoption is and the difference between awareness and adoption. The research design was based on a mixed-technology approach, which involved a structured questionnaire of 124 SMEs along with literature analysis and legal frameworks.

It is found that the level of awareness of ESG principles is high (92%), but the level of actual implementation is low (29%), indicating a large awareness-practice gap. The environmental practices were the most adopted among the three ESG dimensions, mainly because of the regulatory compliance and customer pressure. The social initiatives were usually informally embraced, and the mechanisms of governance were way behind, showing weak institutionalization by the SME structures.

Some of the main obstacles that have been stated are financial limitations, lack of technical skills, complexity of reporting schemes, and limited ecosystem support. These difficulties are also enhanced by the resource-limited character of SMEs and the lack of industry-specific policy direction. Nevertheless, early users of ESGs have demonstrated that, when planned correctly in line with business goals, ESG may make a company more competitive, innovative, and resilient over the long term.

Generally speaking, Indian SMEs are at a transitional stage: the desire to implement ESG can be observed, but the structural, financial, and institutional bottlenecks do not allow doing so. Closing the awareness-implementation gap requires policy intervention, support of the ecosystem, and capacity-building efforts.

6.2 Theoretical Implications

The study expands the ESG literature by addressing the SMEs in an emerging economy, which has not been thoroughly researched. The paradox of high awareness and low implementation of ESG practices identified in the study requires an understanding of institutional and resource-based theories, which is subtle to observe. Although the environmental practices predominantly lie within the regulatory and market pressures, the governance and the social initiatives are informal and have limited resources.

These results can be used to create theoretical frameworks to fill the gap between ESG awareness and its application in SMEs. The paper indicates that institutional constraints and resource shortages are essential factors in determining ESG practices in emerging markets. It also questions the relevance of the ESG frameworks that are made to suit large corporations to the SMEs, meaning that more specific treatment is required.

6.3 Managerial Implications

To owners and managers in the SME, the study highlights that the need to adopt ESGs is not only a compliance matter but a strategic need. The alignment of ESG with business goals, including cost efficiency, innovation, and reputation management, can produce significant payoffs. The results have shown that first movers in ESG have shown competitiveness gains and increased stakeholder confidence.

Managers are being advised to appreciate the need to incorporate ESG into their fundamental business strategy, rather than a one-off project. Nevertheless, informal approaches will have to be replaced with formal systems, which will cost in terms of awareness, development and capacity-building. Moreover, SMEs should focus on the ESG initiatives that have obvious practical advantages, including energy conservation or a positive reputation, to cover the costs incurred at the start.

6.4 Policy Recommendations

These results highlight the necessity of more SME-friendly ESG frameworks, industry-specific rules, and more institutional backing. The policymakers should streamline the compliance frameworks on ESG in order to reduce the pressure on SMEs, especially in financial and technical terms. The government should introduce tax incentives, preferential financing, and government subsidies that would help SMEs in their adoption of ESG.

This should also be more proactive on the part of regulators and industry associations, where knowledge platforms, toolkits, and case studies should be given to help in bridging the knowledge and capability gaps identified in the study. The financial institutions can play a significant role in connecting credit access/funding opportunities with the ESG performance; hence, establishing a direct monetary motivation for the SMEs to incorporate sustainable practices.

6.5 Future Research

The work establishes several prospects for future research. The extension of the study to cover medium-sized organizations and other industries, such as services, retail, and agriculture, would offer a better picture of the adoption of ESG in these industries. Moreover, longitudinal designs or case studies could be used as future studies to observe how ESG adoption varies over time and gain a more in-depth insight into the contextual factors.

Some other performance measures that ESG has on the business performance of SMEs that could be incorporated in further research include productivity, financial performance and supply chain resilience. The differences in the regions within India are also to be considered since the differences in the infrastructure and government can have a significant impact on the pattern of ESG adoption. The cross-border comparison of SMEs in other developing economies would provide information on how different regions respond to institutional context through ESG conduct.

6.6 Conclusion

To sum up, this dissertation has shed light on the adoption of ESG practices by the Indian SMEs and revealed that significant barriers to the adoption still exist despite the high levels of awareness. The paper illustrates that even though there are regulatory compliance and market forces that are compelling the environmental practices, the governance and social initiatives are underdeveloped. The study claims that to address financial, technical, and regulatory obstacles, SMEs require more specific ESG frameworks and support on an institutional level.

The results highlight that the adoption of ESG is not only crucial to the growth and competitiveness of individual SMEs but also to the sustained industrial development of India in the long run. When ESG is aligned with the core business strategies, SMEs will have access to new opportunities, will have a better position in relationships with stakeholders, and will fit in global value chains. The paper is relevant to the academic community, also provides valuable advice on how SMEs can proceed using the information presented in the paper and also offers valuable policy suggestions that regulators and industry players can adopt to create a more facilitating environment where the adoption of ESG can thrive in the Indian SME sector.

APPENDIX A:

QUESTIONNAIRE

1. Has your company adopted practices in the following ESG areas?

- Environmental
- Social
- Governance

2. Has your company formally adopted any Environmental, Social, and Governance (ESG) practices?

- Yes, our company has adopted ESG practices
- No, our company has not adopted ESG practices

3. Which of the following best describes your company's engagement with Environmental, Social, and Governance (ESG) practices?

- Our company is aware of ESG and recognizes it as a high strategic priority.
- Our company is actively implementing ESG practices in operations.

4. What are the main barriers your company faces in adopting Environmental, Social, and Governance (ESG) practices?

- Financial constraints (e.g., cost of technology, certification, or compliance)
- Lack of technical knowledge or expertise
- Complexity of ESG frameworks and reporting requirements
- Limited industry guidance or institutional support

APPENDIX B:

INFORMED CONSENT

Research Title: Adoption of Environmental, Social, and Governance (Esg) Practices in Small Manufacturing in India

Principal Investigator: My name is Amit Jain. I am a DBA learner at SSBM GENEVA. I am conducting a study and you are invited to participate.

Purpose of the Study:

The purpose of this study is to quantitatively examine the adoption of Environmental, Social, and Governance (ESG) practices among SMEs in India's manufacturing sector. It investigates adoption levels, key drivers, barriers, and the role of institutional support mechanisms. By analyzing survey data from 124 SMEs, the study provides insights to guide policymakers, industry bodies, and SME leaders in promoting sustainable practices.

Procedures:

If you agree to participate, you will be asked to complete a structured survey. The survey will include questions about your experiences, preferences, and perceptions regarding health insurance marketing strategies. It will take approximately 5–10 minutes to complete.

Confidentiality:

All information you provide will be kept confidential and used solely for academic purposes. Your responses will be anonymized to ensure that no personally identifiable information is included in the study's results. The data will be securely stored and accessed only by the researcher and authorized personnel.

Potential Risks and Benefits:

There are no significant risks associated with participating in this study. Your participation will contribute to valuable insights into improving health insurance marketing strategies, which may ultimately benefit consumers and the industry.

Consent Statement:

By signing below, you confirm that you have read and understood the information provided above. You consent to participate in this study and allow the researcher to use your responses for academic purposes.

Participant's Name: ___________________________

Participant's Signature: _______________________

Date: ____

Researcher’s Signature: _______________________

Date: ____

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