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Bengaluru

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A collaborative Report on

Navigating the ESG Landscape:

Awareness and Requirements Among Indian Executives

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Dr. Sunil M V is a faculty member in the area of Systems and General Management at SDM Institute for Management Development (SDMIMD), Mysore. With over two decades of academic and administrative experience, he has played a pivotal role in shaping institutional initiatives. He has also served in leadership capacities, notably as the Head of Academic Administration and as the former coordinator of the SDM Research Center for Management Studies (RCMS), where he successfully managed the doctoral program and fostered a vibrant research culture.

Dr. Sunil's teaching and research interests lie in the domains of **Information Systems, Technology Adoption, ESG (Environmental, Social, and Governance),** and **Social Enterprises.** He is particularly known for designing and delivering courses that bridge technology with social relevance and business impact. His academic qualifications include a Ph.D. with a focus on open-source software adoption, along with Master's degrees in Library and Information Science and Sociology. He is also a Certified Fellow of the American Library Association and IIM Bangalore, underlining his commitment to academic excellence and professional development. In recognition of his domain expertise, Dr. Sunil serves as an Executive Committee Member of the ESG Committee at the Bangalore Chamber of Industry and Commerce (BCIC), Bengaluru.

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Dr. Mousumi Sengupta is the Dean- International Relations and Professor - HRM and OB at SDMIMD Mysore. She has completed her PhD from Indian Institute of Technology (IIT), Kharagpur, India. She has done MA in HRM from University of West London (formerly known as Thames Valley University), London, UK, completed GradIPD qualification from the Institute of Personnel and Development (IPD), London, UK, and earned a PG Diploma in Public Relations from Bharatiya Vidya Bhavan, India. She has more than 25 years of working experience as a consultant, teacher, researcher and trainer, in the field of management. She has been teaching in reputed institutes and universities in India and abroad, such as, ESC Business School, Pau, France; Heilbronn University of Applied Sciences, Heilbronn, Germany; British University in Dubai (BUiD), Dubai, UAE; IISWBM, Kolkata; IMT, Nagpur; PESSE, Bangalore; and Amrita Viswa Vidyapeetham, Coimbatore. She is a registered PhD guide at University of Mysore and an external PhD thesis examiner in universities in India and abroad. She has published four books, several book chapters, research papers in international and national journals and presented papers in national and international conferences. Her co-authored book entitled **"Emotional Intelligence: Myth or Reality"** has won the Second Prize of the ISTD Book award 2007-2008. Her PhD Thesis was awarded as the **Best Management Thesis at PIMR Indore** in 2005. She was awarded as the **Best Professor in HRM, by the Asia Pacific HRM Congress",** in 2022 and conferred with the **"Golden Aim Award in the category of Iconic Women Leader Award: Learning and Development"** in 2024 by Dynergic Business Solutions. She is the Founding Chairperson of ISTD Mysore Chapter.

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Dr. M V Sunil and Dr. Mousumi Sengupta

Executive Summary

Introduction

The declaration of COVID-19 as a Global Health Emergency by the World Health Organization (WHO) in March 2020 prompted organizations worldwide to reassess their priorities and operational frameworks. This watershed moment accelerated the focus on Environmental, Social, and Governance (ESG) factors, emphasizing the need to care for the environment, show concern for society, and call for good governance. As Indian businesses adapt to this evolving landscape, understanding the current state of ESG awareness and implementation among executives becomes crucial for strategic planning and regulatory compliance.

Research Context and Significance

ESG factors are increasingly recognized by stakeholders - including investors, regulators, and policymakers - as essential components for mitigating future business risks and ensuring sustainable growth. Despite the growing importance of ESG reporting, the lack of a universal framework presents challenges in evaluating non-financial performance, requiring organizations to develop a comprehensive understanding of ESG principles, assessment metrics, and reporting tools.

In India, the ESG reporting journey began with the introduction of the Voluntary Guidelines on Corporate Social Responsibility (CSR) by the Ministry of Corporate Affairs in 2009. Since then, the reporting landscape has evolved to include various frameworks:

- Business Responsibility Reporting (BRR)
- Corporate Social Responsibility (CSR)
- Integrated Reporting (IR)
- National Guidelines on Responsible Business Conduct (NGRBC)
- Business Responsibility and Sustainability Report (BRSR)

Most recently, the Securities and Exchange Board of India (SEBI) has mandated BRSR reporting for the top 1,000 listed entities, marking a significant step toward standardization and transparency in ESG disclosures.

Research Objectives

Our research was conducted in two complementary parts to provide a comprehensive understanding of the ESG landscape among Indian executives:

Part 1: ESG Awareness and Perceptions:

1. To investigate whether executives share similar perceptions about the importance of various metrics across the three ESG pillars (environmental, social, and governance)
2. To analyze differences in perception based on demographic factors such as age, gender, and work sector

Part 2: Technology Adaptation and Software Requirements

1. To assess awareness regarding technological solutions for ESG reporting.
2. To identify key features and characteristics expected in ESG reporting software for initial screening and identification.

Research Methodology

Part 1: ESG Awareness Study

We developed a questionnaire with 30 multiple-choice questions addressing specific metrics under the three ESG pillars as outlined in the Nasdaq ESG Reporting Guide 2.0. Respondents indicated their perception of each metric's importance for their company's ESG reporting. Convenient sampling was used to gather responses from executives across various industry sectors.

Part 2: ESG Software Requirements Study

We created a "category map" to compare the declared importance (assigned by relevant experts) and derived importance (assigned by respondents) for various features and characteristics of ESG software. This approach helped identify critical requirements of Indian executives for effective ESG software identification of the software.

Key Findings

ESG Awareness and Perceptions

Our first study revealed significant variations in ESG awareness and perceptions across environmental, social, and governance metrics:

1. **Inconsistent Understanding:** In-depth interviews highlighted inconsistencies in employee understanding of ESG concepts, largely due to a lack of systematic awareness initiatives within organizations.
2. **Demographic Variations:** Perceptions differed based on age, gender, and work sector, suggesting the need for targeted ESG education and communication strategies.
3. **Pillar-Specific Insights:**
   - **Environmental:** Executives showed higher awareness of direct environmental impacts but less understanding of supply chain and lifecycle considerations.
   - **Social:** While diversity and inclusion metrics were well-recognized, community engagement and human rights due diligence showed lower awareness.
   - **Governance:** Ethics and transparency were highly valued, but risk management and board diversity received less attention.

ESG Software Requirements

Our second study identified critical features and characteristics expected in ESG reporting software in the initial screening by the Indian executives:

1. **Core Quadrant Features:** Four features emerged as highest priority, falling into the "Core Quadrant" of our category map:
   - Easy to use interface
   - One-stop solution for all ESG reporting needs
   - Integration with existing enterprise software
   - Comprehensive training and supportive documentation
2. **Expert Insights:** ESG experts emphasized that effective technology solutions must balance all three ESG pillars while ensuring alignment with organizational goals and compliance requirements.
3. **Implementation Factors:** Successful ESG software implementation requires:
   - Top management support
   - Social inclusiveness
   - Employee involvement
   - Adequate financial resources
   - Adherence to standards and frameworks
   - ROI Prospects and Perspective

Challenges and Barriers

Our research identified several challenges hindering effective ESG implementation and reporting in Indian organizations:

1. **Regulatory Complexity:** The evolving and sometimes fragmented regulatory landscape creates compliance challenges.
2. **Awareness Gap:** The understanding of ESG concepts and their business relevance among executives impedes implementation. Proper knowing on the roadmap for proper implementation, factors for consideration, identification of sustainability targets, and related initiatives to march towards success, and most importantly how, what, when and which format of data to be captured in the process, is the awareness gap.
3. **Technical Limitations:** Many organizations lack the technological infrastructure and expertise to collect, analyze, and report ESG data effectively.
4. **Standard Deficiency:** The absence of universally accepted standards makes comparison and benchmarking difficult.
5. **Resource Constraints:** ESG initiatives often compete with other business priorities for limited resources.

Recommendations

Based on our findings, we propose the following recommendations to enhance ESG awareness and implementation among Indian executives:

For Organizations

1. **Develop Organization-Specific ESG Programs:** Create tailored ESG education and awareness programs that align with company values, industry context, and regulatory requirements.
2. **Leverage Technology Solutions:** Invest in integrated ESG software that addresses the core requirements identified in our study while ensuring compatibility with existing systems.

3. **Foster Cross-Functional Collaboration:** Establish ESG committees with representatives from various departments to ensure holistic implementation and reporting.
4. **Prioritize Data Quality:** Implement robust data collection and validation processes to ensure accuracy and reliability of ESG disclosures.
5. **Align ESG with Business Strategy:** Integrate ESG considerations into core business strategy and decision-making processes rather than treating them as separate initiatives.

For Educational Institutions

1. **Curriculum Integration:** Incorporate ESG education into school, college, and management program curricula to develop future leaders with strong sustainability mindsets.
2. **Specialized Courses:** Develop specialized ESG courses focusing on reporting frameworks, measurement methodologies, and implementation strategies.
3. **Industry Partnerships:** Collaborate with businesses to provide students with practical exposure to ESG challenges and solutions.

For Policy Makers

1. **Standardization:** Work toward greater standardization of ESG reporting requirements to reduce complexity and improve comparability.
2. **Incentive Mechanisms:** Develop incentives for organizations that demonstrate leadership in ESG implementation and reporting.
3. **Capacity Building:** Support training and capacity building initiatives focused on ESG awareness and implementation.

Conclusion

As ESG considerations become increasingly central to business strategy and stakeholder expectations, Indian executives must develop a comprehensive understanding of ESG principles, reporting frameworks, and implementation approaches. Our research highlights both the current state of ESG awareness and the technological requirements for effective ESG reporting among Indian executives.

The path forward requires a concerted effort from organizations, educational institutions, and policymakers to bridge awareness gaps, develop appropriate technological solutions, and create an enabling environment for ESG implementation. By addressing these challenges, Indian businesses can not only meet regulatory requirements but also harness ESG as a driver of innovation, resilience, and sustainable growth.

The findings of this study provide valuable insights for the Bangalore Chambers of Industry and Commerce (BCIC) members as they navigate the evolving ESG landscape and work toward building more sustainable and responsible businesses.

Navigating the ESG Landscape:

Awareness and Requirements Among Indian Executives

Report of Part 1

ESG Awareness Study

1.0 Introduction

Environmental, Social and Governance (ESG) matters of all businesses are interconnected. With the current COVID-19 pandemic, ESG has gained a greater significance for investors, policymakers, and other key stakeholders, as a path to safeguard businesses from future risks. There is no universal framework for the ESG-reporting landscape (PricewaterhouseCoopers, 2020a). The future-focused approach demands the proper understanding of the ESG concept, evaluation criteria and comprehensive reporting tools to evaluate the company's non-financial performance (Pricewater houseCoopers, 2020a). ESG reporting in India began in 2009 with the Ministry of Corporate Affairs (MCA) issuing the Voluntary Guidelines on Corporate Social Responsibility as the initial step toward making business responsibility more acceptable. Since then, the reporting standards have come a long way with the introduction of Business Responsibility Reporting (BRR), Corporate Social Responsibility (CSR), IR, National Guidelines on Responsible Business Conduct (NGRBC) and, at present, Business Responsibility and Sustainability Report (BRSR) (Securities and Exchange Board of India (SEBI), 2022), (Chaudhary, 2022) and (Pricewaterhouse Coopers, 2020b).

2.0 The main Pillars o5f ESG

The authors have adopted Investopedia's explanation of ESG factors (2022) to understand and present the concept in this study. It is understood that the ESG is a defined framework to integrate the organization's vision & mission, and strategy with the process & performance of the entity for – Environment, Social and Governance – in terms of identification, assessment and management of sustainability-related risks and opportunity by considering the stakeholders of the organization.

Each factor is further analyzed and presented below from the specific studies during the literature study.

- **Environmental Factors:** This factor focuses on preserving natural resources and eco-friendly initiatives. This factor addresses climate change, greenhouse gas emissions, biodiversity loss, deforestation, pollution, energy efficiency and water management and other natural resource preservation aspects (S&P Global, 2022a).
- **Social Factors:** People, relationships, and responsible to the stakeholders are the key aspects considered in this factor. Steps were taken to support gender and diversity, equity, inclusion, enhancing customer satisfaction, employee engagement and socially inclusive initiatives by the organization (Fitzpatrick et al., 2020).
- **Governance Factors:** This factor considers the past and current practices for how the organization is governed and enhances the corporate environment for a better workplace. Board composition, management structure, cybersecurity practices, compensation, anticorruption, gender equality and ratio, and other best practices of ascendancy are considered in this factor (S&P Global, 2022b).

3.0 A cursory glance at the concept of ESG over the years

The general understanding from the literature study reveals that ESG generally means a broad

set of environmental, social, and corporate governance considerations that may impact a company's ability to execute its business strategy and create value over the long term. While ESG factors are sometimes non-financial, how a company manages them undoubtedly has measurable financial consequences (Nasdaq, Inc., 2019).

The state of ESG can be traced back to the Brundtland Report, formally known as the United Nations (UN) Global Commission on Environment and Development Report or Our Common Future, published 1987 (Brundtland, 1987). The report defines sustainability as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Ultimately, sustainable development is not a constant state of harmony, but a process of change in which the development of resources, directions of investment, directions of technological development, and changes in institutions are adapted to the future. (Elkington, 1999) introduced the concept of the triple bottom line in his work. Finance, Environment, Society [Profit, Planet, People] are essential parameters for a company's performance. Moreover, the investment market has responded strongly to this, introducing "responsible investors" into the market (Beergi, 2022). In 1998, Robert Levering and Milton Moskowitz analyzed the Fortune 100 Best Places to Work list and showed the financial impact of ESG factors(Ballou et al., 2003). In his work, Elkington (1999) introduced the triple bottom line concept, i.e., financial, environmental, and social [profit, planet, people], as significant parameters for business performance. Further, the investment market significantly responded to this, introducing the 'Responsible Investor' (Beergi, 2022).

Though the concept of ESG existed for quite some time, the term 'ESG' was first popularly described and endorsed in the report titled "Who cares wins" by 20 well-reputed financial institutions at the invitation of the United Nations in 2004. It presented the essential recommendations by the financial industry to integrate better environmental, social and governance issues in analysis, asset management and securities brokerage (United Nations & Swiss Federal Department of Foreign Affairs, 2004). These developments triggered the informal group of financial leaders, city lawyers and environmental stewardship NGOs known as The Virtuous Circle. Its brief examined the correlation between environmental and social standards and financial performance (Gangi & D'Angelo, 2016). In addition to the above, Edmans (2011) presented the '100 Best Companies to Work For and reported that these companies, who paid attention towards responsible business, outperformed their peers in stock returns during 1984–2009 and exceeded the analysts' expectations in earnings. The other notable work in this line is by Douglas Cogan (Cogan, 2008), Michael L. Barnett and Robert Salomon (Barnett & Salomon, 2006) and Ruth V. Aguilera and others (Aguilera et al., 2006). It was noted that the term ESG had been widely used, since 2015, due to the 2030 Agenda for Sustainable Development, adopted by UN Member States, popularly known as The Paris Agreement. It is arguably the most recognized and well-known agreement created for achieving sustainability goals by the United Nations. The Paris Agreement was signed and agreed upon by 195 countries in 2015 (United Nations, 2022). The report calls for the sustainability inclusion of economic resources beyond the natural resources to achieve a holistic, balanced approach towards the environment, social and governance aspects. The comprehensive approach toward sustainability pushed the UN Members toward the issue of an Agenda for Sustainable Development in 2015, which includes 17 Sustainable Development Goals (SDGs) and 169 targets to be achieved by 2030 (Wikipedia, 2022).

An essential tool for achieving sustainable development goals (SDGs) is to implement regulatory requirements for companies' information on Environmental (E), Social (S), and Governance (G), known as the ESG criteria (Investopedia, 2022). The ESG criteria form a report that discloses how sustainable a company is. The ESG report will give a clear overview of the companies' sustainability and drive investments and interest toward companies with solid

sustainable prospects. It will also give investors and stakeholders insight into non-financial information about the company. ESG has become very popular and essential in the corporate world as a concept for creating sustainable business organizations focusing on profitability rather than profit as the sole motive for conducting business activities.

ESG focuses on the responsibilities of a company, encompassing the internal and external business environment; hence, it should aim at striking a healthy balance between generating profits and maintaining sustainability. Therefore, organizations must work with communities, use structured frameworks to measure their ESG performance, and have appropriate disclosure policies. A comprehensive ESG strategy by any organization will require them to include both financial and non-financial ESG reporting, resulting in unified corporate reporting that will help stakeholders understand the multiple aspects of ESG. It will also help financial institutions like banks, which may seek detailed information about a company's ESG strategy before lending. As the ESG framework evolves, organizations must proactively focus on modifying supply chains, working with communities, and reporting and disclosing further to strengthen the role of ESG in the new normal. In less than 20 years, the ESG movement has grown from a corporate social responsibility initiative launched by the United Nations into a global phenomenon (Wikipedia, 2022).

4.0 Appropriate mindset for ESG implementation

As a logical corollary, creating the right mindset among the owners and professional managers engaged in business activities to base their views on ethics and value-based orientations becomes necessary. Keeping this in mind, the basic tenants of ESG while formulating their mission, vision, operational frameworks, organizational structures and business decisions to run their organizations effectively and efficiently. ESG principles help organizations adopt a more balanced stakeholder-oriented approach to achieve sustainability and better brand value for their organizations. Further, it enables them to achieve business growth that can stand the Test of time and the volatility of the uncertain operating business environment.

In light of the above, the search on Google Scholar on ESG in the title presence yields 10,100 results, and the results with the filter application for publication between 2020 to 2022 shows 6,780 results. The publication during 2022 is very encouraging, with 2,150 results. ESG, in its current form, is taking the front seat for non-financial performance rather than a solution (Frigo et al., 2022). The literature study helped the authors to understand that there is a need to investigate the understanding of the Indian executives about the ESG reporting initiatives for their respective companies. This gap is stressed pointedly by Chaudhary (2022), Dhamne and Modak (2021), Narayanan and Sirigauri (2020), and Sood and others (2022). For the present paper, based on the recommendations by Aguilera and others (2006) and Barnett and Solomon (2006), the NASDAQ ESG Reporting Guide is adopted. The selection is for detailing each metric for ESG reporting comprehensively and uniformly describing the assessment metrics.

5.0 ESG Reporting Guide

There are several ESG Reporting Guides. For example, the National Association of Securities Dealers Automated Quotations (NASDAQ) the ESG Reporting Guide 2.0 (2019); the European Financial Reporting Advisory Group (EFRAG) - the European Sustainability Reporting Standards; the International Sustainability Standards Board (ISSB) - the IFRS Sustainability Disclosure Standards; Global Reporting Initiative (GRI); Sustainability Accounting Standards Board (SASB) and the International Integrated Reporting Council (IIRC) - Value Reporting Foundation (VRF); International Integrated Reporting Council (IIRC) - Integrated Reporting Framework; Task Force on Climate-Related Financial Disclosures (TCFD) – TCFD Framework; Morgan Stanley Capital International (MSCI) and, Sustainalytics (Team, 2022).

A key tool for achieving the Sustainable Development Goals (SDGs) is the introduction of regulatory requirements for environmental (E), social (S) and governance (G) corporate information, known as ESG criteria(Investopeida, 2022). ESG criteria form a report that shows how sustainable a company is. ESG reports clearly demonstrate a company's sustainability and

attract investment and interest in companies with solid sustainability prospects. Additionally, investors and stakeholders can gain insight into non-financial information about the company. ESG has become essential in corporate society as a concept for building a sustainable corporate organization that emphasizes profitability, rather than just pursuing profit from corporate activities.

6.0 Evolution of ESG Reporting in India

India's journey toward structured ESG reporting began in 2009, when the Ministry of Corporate Affairs (MCA) introduced the Voluntary Guidelines on Corporate Social Responsibility (CSR). This initiative marked the initial step toward encouraging businesses to integrate social and environmental responsibility into their operations. Over the years, ESG-related disclosures in India have evolved significantly, moving beyond voluntary commitments to mandatory reporting frameworks.

The key milestones in India's ESG reporting framework include:

- Business Responsibility Reporting (BRR): Introduced by the Securities and Exchange Board of India (SEBI) in 2012, BRR mandated the top 100 listed companies (later expanded to the top 500) to disclose their ESG-related initiatives.
- Corporate Social Responsibility (CSR) Mandate: The Companies Act, 2013 made India the first country to legislate CSR spending, requiring eligible companies to allocate 2% of their average net profits toward social causes.
- Integrated Reporting (IR): Encouraged by SEBI in 2017, IR aimed at providing a holistic view of a company's financial and non-financial performance.
- National Guidelines on Responsible Business Conduct (NGRBC): Released in 2019, these guidelines built upon the National Voluntary Guidelines (NVGs) on Social, Environmental & Economic Responsibilities of Business and emphasized ethical business conduct.
- Business Responsibility and Sustainability Report (BRSR): The most recent development in India's ESG framework, BRSR was introduced by SEBI in 2021 as a comprehensive reporting mechanism. Replacing BRR, BRSR provides a structured format for companies to disclose their ESG-related activities, risks, and impact (Securities and Exchange Board of India, 2022; Chaudhary, 2022; Pricewaterhouse Coopers, 2020b).

7.0 Significant illustrations from the select BRSR Reports

a) Kirloskar Brothers Limited

The Business Responsibility and Sustainability Report of Kirloskar Brothers Limited (KBL), found in the company's Integrated Annual Report 2022–23, provides a comprehensive overview of its ESG commitments. According to Section A (General Disclosures), especially pages 108–110, KBL demonstrates a strong orientation toward manufacturing fluid power equipment for critical infrastructure sectors including irrigation, defense, and energy. From an environmental perspective, the company's operations aim at energy efficiency and sustainable fluid management systems. Social inclusion is evident through gender representation data; women constitute 30% of the Board of Directors (page 109). Governance standards are reinforced by centralized responsibility for quality and sustainability initiatives, led by the Corporate Quality Assurance team (Kirloskar Brothers Limited, 2024).

b) Schneider Electric

The 2023 Sustainable Development Report of Schneider Electric is highly detailed and structured around six long-term commitments, covered extensively from pages 4 to 31. The report emphasizes Schneider's comprehensive sustainability model called the Schneider Sustainability Impact (SSI), which includes metrics-based monitoring of progress across environmental, social, and governance areas. For instance, the company achieved 553 million tonnes of CO_2 emissions avoided for its customers since 2018 (page 3), with a goal of achieving net-zero operations by 2050 (page 6). Its governance model is particularly notable: the SSI score directly

influences employee incentives for over 64,000 employees, integrating sustainability with corporate performance (page 6–7). Furthermore, the report documents impact investments, global collaborations, and inclusion efforts such as the Decent Work program for suppliers (page 6) (Schneider Electric Infrastructure Limited, 2024b, 2024a).

c) Indian Tobacco Company (ITC) Limited

ITC's Business Responsibility and Sustainability Report 2024, included within its annual accounts, demonstrates a multi-dimensional sustainability strategy, aligned with the National Guidelines on Responsible Business Conduct (NGRBC). A major takeaway is the company's "Sustainability 2.0" vision, elaborated under Principle 6 (page XXXVII), which outlines goals in carbon neutrality, plastic neutrality, and water stewardship. The diversified nature of ITC's business—spanning FMCG, agribusiness, hotels, and paperboards—has enabled it to adopt a systemic approach to sustainability. Principle 8 (page XLVI) showcases inclusive growth initiatives, including large-scale rural engagement through ITCMAARS and Mission Sunehra Kal. The report is independently assured by KPMG (Section A, page III), enhancing the credibility of its governance and disclosures (ITC Limited, 2024a, 2024b).

d) Godrej Consumer Products Limited

Godrej's BRSR report (FY 2022–23), detailed in Sections A through IV (pages 1–4), highlights its performance in personal and household care manufacturing. The company reports that 41.67% of its Board members are women (page 3), marking one of the highest ratios among the selected companies. Its workforce policies promote inclusivity, and there is a clear reporting on the employment of differently abled persons and women across all levels. Export activities constitute only 3.35% of its turnover, indicating a primarily domestic ESG footprint (page 2). The company also engages in sustainable packaging and production innovations. Data in Section IV (pages 3–4) reinforce transparency in employee practices and retention metrics (Godrej Industries Limited, 2024).

e) Siemens Limited (India)

Siemens Limited's BRSR for FY 2023, particularly the foreword and General Disclosures (pages 1–4), outlines its alignment with the DEGREE sustainability framework—an acronym representing Decarbonization, Ethics, Governance, Resource efficiency, Equity, and Employability. On page 3, Siemens highlights that 81% of its operational waste is recycled or reused, and 60% of orders are evaluated for ESG risks. These figures illustrate a proactive resource management policy. The company's emphasis on digitization and partnerships through the Siemens Xcelerator platform supports customers in their decarbonization efforts (page 3). Its governance is distinguished by an integrated ESG risk assessment in operations and supply chains (Siemens India, 2024) .

f) Colgate-Palmolive (India) Limited

Colgate-Palmolive's BRSR, included as Annexure 6 of its Annual & ESG Report 2023–24 (pages 183–185), communicates a focused strategy around personal care manufacturing, with toothpaste contributing to over 97% of turnover (page 184). The report outlines a mature ESG governance structure with external assurance from DNV India (page 183). The company is actively working towards its 2025 Sustainability & Social Impact Strategy, particularly in areas of plastic reduction, water conservation, and product accessibility. Colgate-Palmolive's efforts in consumer outreach and inclusive product distribution—both rural and urban—are elaborated on page 184, reflecting a social model grounded in public health and hygiene (Colgate-Palmolive (India) Limited, 2024b, 2024a).

g) GlaxoSmithKline Pharmaceuticals Limited (GSK India)

GSK's BRSR for FY 2023–24, structured according to the nine NGRBC principles,

provides insight into its pharmaceutical operations. The document, particularly pages 3–6, indicates strong governance and compliance mechanisms, with third-party assurance from Bureau Veritas. While the company does not engage in exports (page 4), it delivers healthcare solutions across India to government institutions and private healthcare providers. The CSR spending reported for the year stands at ☒16.29 crores, with a focus on healthcare infrastructure and education for underprivileged communities (page 6). The company also reports on board diversity (22.2% women, page 5) and a structured turnover analysis for employees and workers (GlaxoSmithKline Pharmaceuticals Limited (GSK), 2024).

8.0 Objectives of the Study

In India, many companies look at Business Responsibility Reporting (BRR) reporting and CSR (Corporate social responsibility) reporting standards or guidelines to adhere to the ESG report. The Business Responsibility and Sustainability Report (BRSR), framed in May 2020 by SEBI (under the guidance of MCA), made BRSR reporting applicable to the top 1000 listed entities in March 2021. However, issues such as lack of regulation, lack of awareness, lack of technology, and lack of defined standards – demand research and discussions (Dhamne & Modak, 2021) (Sood et al., 2022) (Narayanan & Sirigauri, 2020).

Though employees are the most crucial stakeholders in implementing ESG practices, in the Indian context, very few researchers have been conducted on employees' perceptions about the Rereporting of their respective companies. Without cooperation and involvement from the employees' side, no company can induct ESG factors into the organizational work culture. Keeping this in mind, the present study's main objective is to investigate the understanding of the Indian executives about the ESG reporting initiatives for their respective companies.

Our research (Sunil, M.V. and Sengupta, Mousumi, 2023; Sunil, M.V. et.al, 2024) was conducted in two complementary parts to provide a comprehensive understanding of the ESG landscape among Indian executives:

Part 1: ESG Awareness and Perceptions:

- To investigate whether executives share similar perceptions about the importance of various metrics across the three ESG pillars (environmental, social, and governance)
- To analyze differences in perception based on demographic factors such as age, gender, and work sector

Part 2: Technology Adaptation and Software Requirements

- To assess awareness regarding technological solutions for ESG reporting
- To identify key features and characteristics expected in ESG reporting software by Indian executives for the initial screening and shortlisting.

9.0 Research tool

NASDAQ ESG Reporting Guide has been chosen as the primary tool for the study since it is a globally accepted tool related to ESG. For the present paper, The NASDAQ ESG Reporting Guide has been studied in detail, keeping in mind that this Guide is adopted for detailing each metric for the ESG reporting comprehensively and uniformly, which helps the respondents to understand and appreciate each of the ESG assessment metrics. In Figure 1, the 30 different metrics are listed.

Nasdaq ESG Reporting Guide – Metrics		
Environmental	**Social**	**Corporate Governance**
E1. GHG Emissions	S1. CEO Pay Ratio	G1. Board Diversity
E2. Emissions Intensity	S2. Gender Pay Ratio	G2. Board Independence
E3. Energy Usage	S3. Employee Turnover	G3. Incentivized Pay
E4. Energy Intensity	S4. Gender Diversity	G4. Collective Bargaining
E5. Energy Mix	S5. Temporary Worker Ratio	G5. Supplier Code of Conduct
E6. Water Usage	S6. None-discrimination	G6. Ethics and Anti-corruption
E7. Environmental operations	S7. Injury Rate	G7. Data Privacy
E8. Climate Oversight/Board	S8. Global Health and Safety	G8. Publishes Sustainability Report
E9. Climate Oversight / Management	S9. Child and Forced Labor	G9. Disclosure Practices
E10. Climate Risk Mitigation	S10. Human Rights	G10. External Assurance

Figure 1: Nasdaq ESG Reporting Guide 2.0
Source: Nasdaq, Inc. (2019). ESG Reporting Guide 2.0 - A Support Resource for Companies

10.0 Research Methodology

A questionnaire was prepared with 30 multiple choice questions, 10 addressing specific metrics under 3 ESG pillars (environment, social and corporate governance) mentioned in the Nasdaq, Inc. (2019) ESG Reporting Guide 2.0. The questionnaire used a 5-point Likert scale for each item (Very important = 5, Important = 4, Moderately Important = 3, Slightly Important = 2, and, Not Important = 1).

The questionnaire has the required overall consistency level (Cronbach alpha = .903), and each pillar with ten metrics had the required consistency (for pillar I, Cronbach alpha = .795; for pillar II, Cronbach alpha = .851; for pillar III, Cronbach alpha = .870).

The sample for the study was the executives from Bangalore, Mysore, Pune, Kolkata, and Delhi. The questionnaire was sent as a google form and hard copy to 157 executives. The sample was randomly selected from the database available to the authors from personal and social media sources. Respondents were asked to indicate their perception of the importance of each metric (a total of 30 metrics for a total of 3 ESG pillars) for the respective company's ESG reporting. Convenient sampling was used for the study, keeping in mind the timeline for conducting the research. It was, however, aimed that, based on the present study findings, the authors would conduct the next level of study.

Responses were received from 63 executives (40%). The data was collected between April and October 2022. It is noted that the sample size was smaller than expected. However, because the present study is one of very few of its kind, since very little research has been conducted on the Indian employees' perception of ESG factors, the authors decided to use this opportunity as an initial step for more elaborated research for conducting a more extensive study at the national level. Therefore, it was decided to go ahead with the data analysis. It was also decided that in case the sample does not qualify normality test, a non-parametric Test would be used.

Out of 63 respondents, 21 were female, and 42 were male. Seven were between 26 to 30 years, 14 were between 31 to 35 years, four were between 36 to 40 years, 14 were between 41 to 45 years, and 24 were between 46 years and above; 3 respondents had total work experience of 0 to 5 years, 14 had 6 to 10 years, 8 had 11 to 15 years, 7 had 16 to 20 years, 11 had 21 to 25 years, 8 had 26 to 30 years, and 12 had 30 years and above.

Sixteen respondents worked in manufacturing, 4 in IT, 11 in Construction Engineering and Real Estate Management & Development, 12 in Education, 8 in Business Consultancy, 6 in Telecommunication, and 6 in Banking, Financial Services, Insurance & Capital markets.

The details of the study in Part I and Part II studies have been detailed in the next sections.

11.0 Part 1: ESG Awareness and Perceptions

For this study, the following hypotheses have been framed:

- **Null hypothesis H10:** There is no significant difference in the perceptions of the respondents, in general, about the importance of the various metrics of each of the three pillars of ESG, i.e., environmental, social, and corporate governance, for ESG reporting of the respective companies.
- **Alternative hypothesis H1a:** There is a significant difference in the respondents' perceptions, in general, concerning the importance of the various metrics of each of the three pillars of ESG, i.e., environmental, social, and corporate governance, for ESG reporting of the respective companies.
- **Null hypothesis H20:** There is no significant difference in the perceptions of the respondents based on demographic factors, i.e., age, gender and work sector, concerning the importance of the various metrics of each of the three pillars of ESG, i.e., environmental, social, and corporate governance, for ESG reporting of the respective companies.
- **Alternative hypothesis H2a:** There is a significant difference in the perceptions of the respondents based on at least one of the four demographic factors, i.e., age, gender, work experience and sector, with the importance of the various metrics of at least one of the three pillars of ESG, i.e., environmental, social, and corporate governance, for ESG reporting of the respective companies.

11.1 Data analysis

In order to understand perception, the respondents for each metric and the mean scores for each of them assigned by the respondents were computed (Table 1). The mean score for all the metrics was more than 3 (on a scale of 1 to 5). Therefore, respondents agreed that all the metrics were important (more or less) in the context of ESG reporting. This supports the existing literature, where it is evident that globally, ESG has been recognized as a significant ingredient for organizational sustainability.

Water usage (E6 metrics) and Global Health and Safety (S8 metrics) were assigned the highest mean score by the respondents, i.e., these two metrics were perceived to be the most critical metrics for the respondents' respective company ESG reporting. In contrast, Board Independence (G2 metrics) were assigned the least mean score by the respondents, i.e., these metrics were perceived to be the least important metrics for the respondents' respective company ESG reporting (Sunil, M.V. and Sengupta, Mousumi, 2023).

Table - 1

Descriptive Statistics presenting the Respondent's Perception of Metrics and the Mean Scores for Each Metrics

Metrics	Mean	Standard Deviation	Kurtosis	Skewness
Pillar I - Environment Metrics [E1. GHG Emissions]	4.2540	0.9327	1.0255	-1.1523
Pillar I - Environment Metrics [E2. Emissions Intensity]	3.9365	1.1198	-0.3311	-0.8681
Pillar I - Environment Metrics [E3. Energy Usage]	4.5397	0.7793	5.9190	-2.1423
Pillar I - Environment Metrics [E4. Energy Intensity]	4.3333	0.8424	3.1525	-1.5418
Pillar I - Environment Metrics [E5. Energy Mix]	4.4127	0.6632	-0.5396	-0.6962
Pillar I - Environment Metrics [E6. Water Usage]	4.5556	0.8187	0.9434	-1.5501
Pillar I - Environment Metrics [E7. Environmental operations]	4.0476	0.9057	-1.4538	-0.2303
Pillar I - Environment Metrics [E8. Climate Oversight/Board]	4.0000	0.8231	1.2632	-0.7170
Pillar I - Environment Metrics [E9. Climate Oversight / Management]	3.7778	0.9579	-0.7124	0.0117
Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	3.5238	1.2682	-1.3298	-0.3001
Pillar II - Social Metrics [S1. CEO Pay Ratio]	3.8571	1.2029	0.1448	-0.8648
Pillar II - Social Metrics [S2. Gender Pay Ratio]	4.1429	1.2554	1.2856	-1.4907
Pillar II - Social Metrics [S3. Employee Turnover]	4.2222	0.9409	2.4929	-1.4255
Pillar II - Social Metrics [S4. Gender Diversity]	4.1429	1.1894	-0.1797	-1.1164
Pillar II - Social Metrics [S5. Temporary Worker Ratio]	4.0635	1.0606	0.9840	-1.2188
Pillar II - Social Metrics [S6. None-discrimination]	4.2698	1.0193	1.9945	-1.5162
Pillar II - Social Metrics [S7. Injury Rate]	4.1905	1.0904	1.7156	-1.4720
Pillar II - Social Metrics [S8. Global Health and Safety]	4.5556	0.9294	8.4797	-2.8439
Pillar II - Social Metrics [S9. Child and Forced Labor]	3.6349	1.5059	-1.3129	-0.5460
Pillar II - Social Metrics [S10. Human Rights]	4.3333	1.0925	3.3434	-1.9333
Pillar III - Governance Metrics [G1. Board Diversity]	3.6984	1.5201	-0.5879	-0.9752
Pillar III - Governance Metrics [G2. Board Independence]	3.3175	1.7304	-1.5869	-0.4913
Pillar III - Governance Metrics [G3. Incentivized Pay]	3.8730	1.2762	-0.3063	-0.8126
Pillar III - Governance Metrics [G4. Collective Bargaining]	4.0159	1.1143	0.8500	-1.1879
Pillar III - Governance Metrics [G5. Supplier Code of Conduct]	4.2381	0.8746	-1.5278	-0.4912
Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	4.5397	0.9302	1.7896	-1.7955
Pillar III - Governance Metrics [G7. Data Privacy]	4.5238	0.8587	2.7854	-1.8915
Pillar III - Governance Metrics [G8. Publishes Sustainability Report]	4.1905	0.9308	4.6531	-1.8825
Pillar III - Governance Metrics [G9. Disclosure Practices]	3.9683	0.8793	-1.7230	0.0629
Pillar III - Governance Metrics [G10. External Assurance]	4.3968	0.6101	-0.6106	-0.4703

Source: Authors' analysis

To test Hypotheses 1 and 2, either ANOVA or Kruskal-Wallis Test may be used based on whether the assumption of normality for the sample was satisfied. From the Shapiro-Wilk Test, it was noted that the data did not satisfy the normality assumption (Annexure 1). Hence, Kruskal-Wallis Test (K-W Test) was used to investigate the proposed hypotheses.

To investigate whether there were significant differences in the perceptions of the respondents concerning the importance of the various metrics of each of the three pillars of ESG, i.e., environment (E1 to E10), social (S1 to S10), and governance (G1 to G10), for ESG reporting of the respective companies. Kruskal-Wallis Test was conducted (Table 2). It was found that for all three ESG Pillars, respondents differed significantly in their perception of the ESG reporting (for each pillar, p-value < .05). Therefore, Hypothesis 10 was rejected.

Further, the non-parametric posthoc comparison test (Tukey's HSD / Kramer Test) revealed that (Table 2) respondents differed significantly on the specific metrics stated in each pillar. For example, in the context of environmental metrics, respondents differed significantly ($p < .05$) in their perception of the importance of metrics for GHG Emissions vis a vis Climate Risk Mitigation, Emissions Intensity] vis Energy Usage; Energy Usage and Water Usage vis a vis Climate Oversight/Board, Climate Oversight / Management, and Climate Risk Mitigation; Energy Intensity vis a vis Climate Oversight / Management] and Climate Risk Mitigation; and, Energy Mix vis a vis Climate Oversight / Management and Climate Risk Mitigation.

In the context of social metrics, respondents differed significantly ($p < .05$) in their perception of the importance of metrics for CEO Pay Ratio vis a vis Global Health and Safety, Global Health and Safety vis a vis Child and Forced Labor, and Child and Forced Labor vis a vis Human Rights.

In the context of governance metrics, respondents differed significantly ($p < .05$) in their perception of the importance of metrics for Board Diversity vis Ethics and Anticorruption, Data Privacy, External Assurance; Board Independence vis a vis Collective Bargaining, Supplier Code of Conduct, Ethics and Anticorruption, Data Privacy, Publishes Sustainability Report, Disclosure Practices, External Assurance; and Incentivized Pay vis a vis Ethics and Anticorruption, Data Privacy. All the above findings support the existing literature to a great extent since all the respondents agree that ESG reporting is needed for their respective companies. However, since they differ significantly in assigning weightage to the ESG factors, further studies are needed to substantiate the findings (Sunil, M.V. and Sengupta, Mousumi, 2023).

Table - 2

Testing Perceptions about the Three Pillars of ESG

Test	Group 1 (Metric)	Group 2 (Metric)	P-Value	Significance	Result Outcome
Kruskal-Wallis Test	**Environment Metrics**	**0.0000**	**Yes**		**Hypothesis 10 has been rejected**
Tukey's HSD / Kramer Test	Pillar I - Environment Metrics [E1. GHG Emissions]	Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.0005		
	Pillar I - Environment Metrics [E2. Emissions Intensity]	Pillar I - Environment Metrics [E3. Energy Usage]	0.0104		
	Pillar I - Environment Metrics [E3. Energy Usage]	Pillar I - Environment Metrics [E8. Climate Oversight/Board]	0.0374		
	Pillar I - Environment Metrics [E3. Energy Usage]	Pillar I - Environment Metrics [E9. Climate Oversight / Management]	0.0002		
	Pillar I - Environment Metrics [E3. Energy Usage]	Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.0000		
	Pillar I - Environment Metrics [E4. Energy Intensity]	Pillar I - Environment Metrics [E9. Climate Oversight / Management]	0.0276		
	Pillar I - Environment Metrics [E4. Energy Intensity]	Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.0001		
	Pillar I - Environment Metrics [E5. Energy Mix]	Pillar I - Environment Metrics [E9. Climate Oversight / Management]	0.0051		
	Pillar I - Environment Metrics [E5. Energy Mix]	Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.0000		
	Pillar I - Environment Metrics [E6. Water Usage]	Pillar I - Environment Metrics [E8. Climate Oversight/Board]	0.0276		
	Pillar I - Environment Metrics [E6. Water Usage]	Pillar I - Environment Metrics [E9. Climate Oversight / Management]	0.0001		
	Pillar I - Environment Metrics [E6. Water Usage]	Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.0000		
Kruskal-Wallis Test	Social Metrics	0.0026	yes		
Tukey's HSD / Kramer Test	Pillar II - Social Metrics [S1. CEO Pay Ratio]	Pillar II - Social Metrics [S8. Global Health and Safety]	0.0219		
	Pillar II - Social Metrics [S8. Global Health and Safety]	Pillar II - Social Metrics [S9. Child and Forced Labor]	0.0003		
	Pillar II - Social Metrics [S9. Child and Forced Labor]	Pillar II - Social Metrics [S10. Human Rights]	0.0219		
Kruskal-Wallis Test	Governance Metrics	0.0000	yes		
Tukey's HSD / Kramer Test	Pillar III - Governance Metrics [G1. Board Diversity]	Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	0.0012		
	Pillar III - Governance Metrics [G1. Board Diversity]	Pillar III - Governance Metrics [G7. Data Privacy]	0.0017		
	Pillar III - Governance Metrics [G1. Board Diversity]	Pillar III - Governance Metrics [G10. External Assurance]	0.0179		

Test	Group 1 (Metric)	Group 2 (Metric)	P-Value	Significance	Result Outcome
Kruskal-Wallis Test	**Environment Metrics**	**0.0000**	**Yes**		**Hypothesis 10 has been rejected**
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G4. Collective Bargaining]	0.0179		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G5. Supplier Code of Conduct]	0.0002		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	0.0000		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G7. Data Privacy]	0.0000		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G8. Publishes Sustainability	0.0006		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G9. Disclosure Practices]	0.0387		
	Pillar III - Governance Metrics [G2. Board Independence]	Pillar III - Governance Metrics [G10. External Assurance]	0.0000		
	Pillar III - Governance Metrics [G3. Incentivized Pay]	Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	0.0302		
	Pillar III - Governance Metrics [G3. Incentivized Pay]	Pillar III - Governance Metrics [G7. Data Privacy]	0.0387		

To investigate whether there is a significant difference in the perceptions of the respondents, based on at least one of the four demographic factors, i.e., age, gender, work experience and sector, about the importance of at least one of the three pillars of ESG, i.e., environmental, social, and corporate governance, for ESG reporting of the respective companies, Kruskal-Wallis (KW) Test was used (since the data did not qualify the normality requirement).

It was found that (Table 3), based on work experience, respondents differed significantly in their perception of the environment metrics, and based on age, they differed significantly in their perception of the governance metrics concerning the ESG reporting (each p-value <.05). Therefore, Hypothesis 20 was rejected.

Table - 3

Testing Perceptions about Three Pillars of ESG Based on Demographic Factors

Metrics Pillar	Demographic Factor	P-Value	Significance	Result Outcome
Environment Metric	Age	0.4991	No	Hypothesis 20 has been rejected
	Gender	0.3961	No	
	Work Experience	0.0151	Yes	
	Sector	0.6269	No	
Social Metrics	**Age**	0.1252	No	
	Gender	0.3517	No	
	Work Experience	0.8207	No	
	Sector	0.2811	No	
Governance Metrics	**Age**	0.0076	Yes	
	Gender	0.4680	No	
	Work Experience	0.7712	No	
	sector	0.3011	No	

GHG Emissions, Climate Risk Mitigation, Emissions Intensity, Energy Usage, water usage, Climate Risk Mitigation and so on. In the context of social metrics, respondents differed significantly in their perception of the importance of CEO Pay Ratio, Global Health and Safety, Child and Forced Labor, Human Rights, and so on. In the context of governance metrics, respondents differed significantly in their perception of the importance of metrics for Board Diversity, Ethics and Anticorruption, Data Privacy, External Assurance, Collective Bargaining, Supplier Code of Conduct, Ethics and Ethics, Anticorruption, and Disclosure Practices. Personal interviews with the respondents revealed that many companies needed a systematic approach towards promoting awareness about such issues due to a general inconsistency in employees' perception of the ESG metrics. This was an exciting finding, and the concerned authorities of the respective organizations at the decision-making and policy implementation level needed to consider this finding with seriousness (Sunil, M.V. and Sengupta, Mousumi, 2023).

11.2 Key Takeaways from the Perception towards ESG Pillars

The goal of the current research is to use a heat map analysis arranged around a triadic ESG framework to compare the ESG maturity of the different sectors economically. By gathering industry-specific data from Business Responsibility and Sustainability Reports (BRSR) of major Indian firms, the study offers a side-by-side viewpoint on the environmental issues (e.g., emissions control, energy efficiency) theme, social aspects (e.g., diversity, health and safety), and governance aspects (e.g., board independence, data ethics) that different sectors are performing. The research also introduces some examples of the positive social change by means of gender equity initiatives. For instance, provides an example wherein the active support of a TNC to promote gender equality in the workplace culminated in increased output, customer satisfaction, and market share) results

from the action of a transnational company in introducing gender equality in the workplace.

The heat map is a diagnostic tool to be used for identifying the strong as well as the weak points in ESG practices, and hence giving the nuanced trends. For example, we can take the case of the following industries: among highly regulated sectors like Government Services and Banking, the latter seem to have ensured a significantly higher level of environmental and governance integrity, while companies from the sector of resource-intensive businesses such as Manufacturing and Construction show depleted performance in the spheres like provision of waste management and worker safety. Besides, although the economy is heavily dependent on the knowledge sectors of Information Technology and Education, these two are among the top scorers in terms of inclusivity and workplace equity, while the areas of labor-intensive industries are the ones with the difficulties in turnover and diversity.

Following are the main points discussed individually for each of the pillars (Figure 2, 3 & 4) and also was debated the general (Figure 5) learning showing the whole picture of the learning by the scholars to the participants.

Environmental Metrics

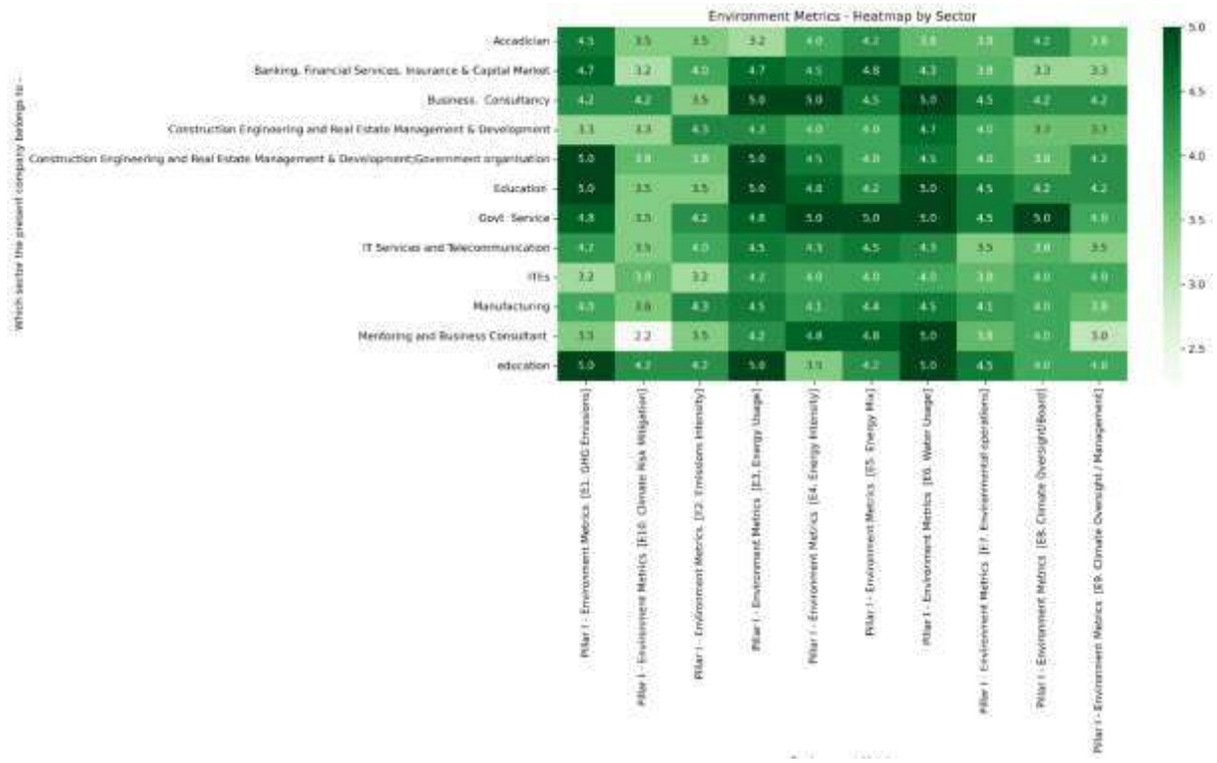

Figure 2: **Heatmap of Environmental Metrics**

The Government Services, Education, and Banking sectors really stood out with impressive scores, landing between 4.5 and 5.0 in Climate Oversight & Emissions Control. This clearly highlights their commitment to being environmentally responsible. On the flip side, sectors like Manufacturing and Construction did reasonably well in energy efficiency, scoring around 4.3, but their ratings for water and waste management were noticeably lower, sitting at about 3.5. This suggests that while they're making strides in energy sustainability, there's still plenty of room for improvement in managing water use and material resources. Interestingly, the Business Consulting sector lagged behind with a low score of around 2.2 in Climate Risk Mitigation, indicating that industry leaders might not feel fully equipped with effective strategies to tackle climate change. Overall, it seems that regulated industries like Government Services, Banking, and Education are leading the way in environmental governance, while energy-intensive sectors such as Manufacturing and Construction are gradually improving their resource management practices.

Social Metrics

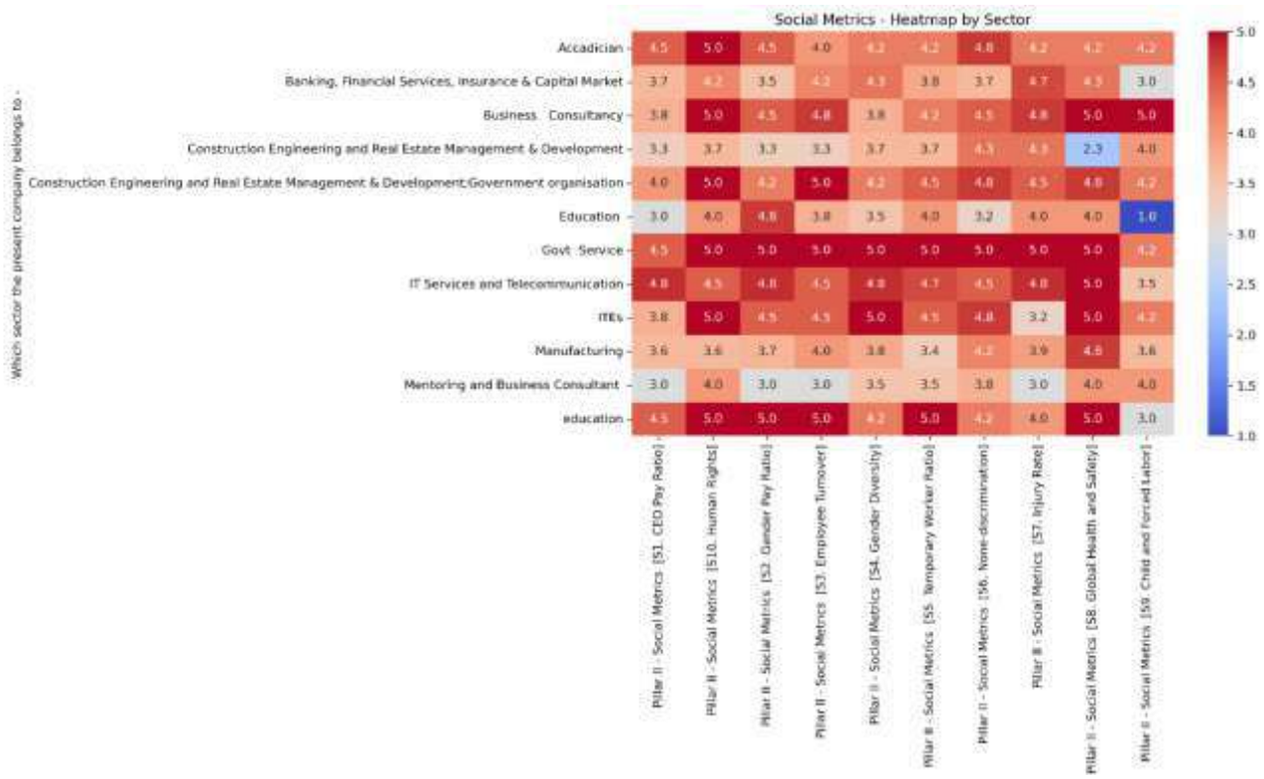

Figure 3: **Heatmap of Social Metrics**

Industries such as Government Services, Education, and IT are really shining when it comes to social metrics, often scoring between 4.5 and 5.0. This indicates that these fields are viewed as fair and inclusive workplaces, with a good mix of diverse teams. On the other hand, sectors like Construction and Business Consulting are falling short, grappling with issues like high turnover rates and a lack of gender diversity, which raises concerns about workforce stability and inclusivity. The Construction industry, in particular, faces challenges with health and safety ratings, frequently dipping below 2.3, likely due to the risks that come with physical labor. To sum it up, desk-based industries like IT, education, and government seem to promote a stronger sense of social fairness, while those that involve physical work really need to improve their safety measures and inclusivity efforts.

Governance Metrics

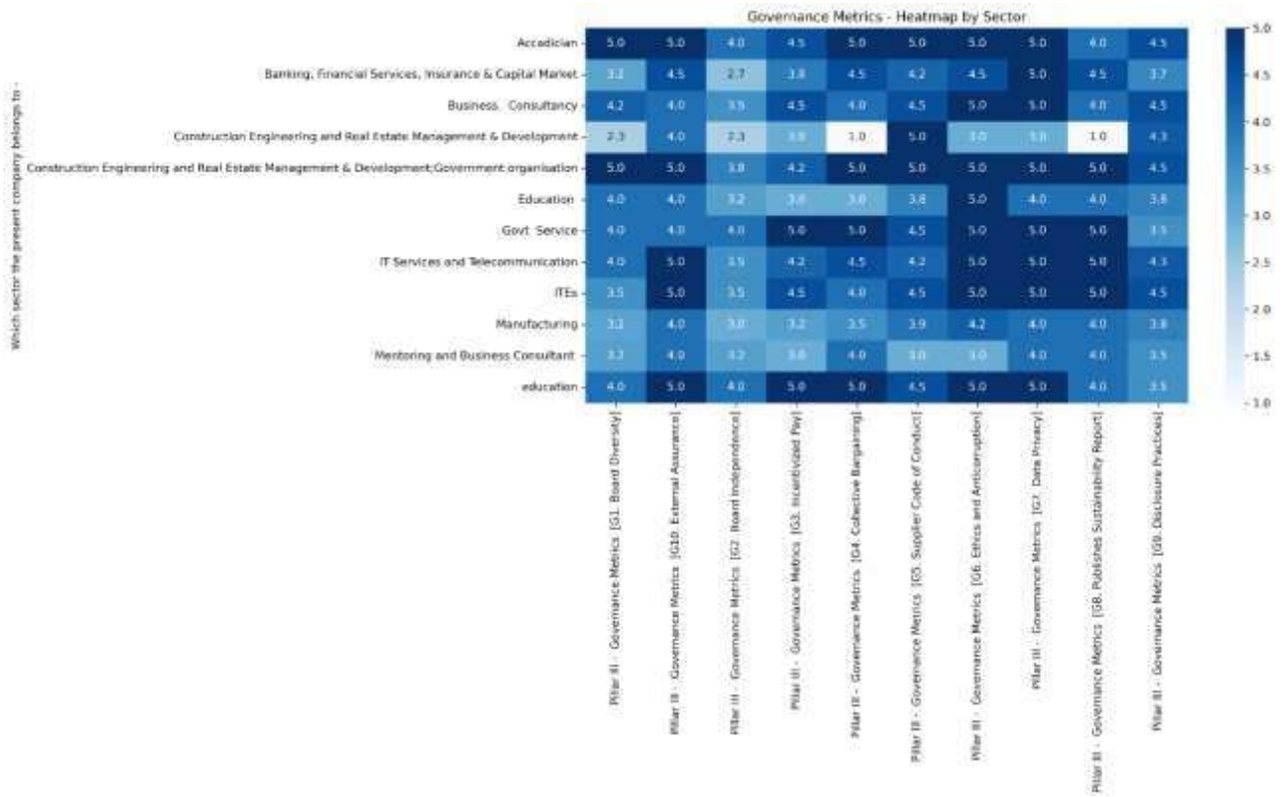

Figure 4: **Heatmap of Governance Metrics**

Both the Accadian/unorganized sector and Government Services sectors are scoring impressively high around 5.0 in areas like Ethics, Data Privacy, and External Assurance. This really highlights their strong commitment to integrity in governance. On the flip side, the Construction sector is lagging behind with a concerningly low score of about 1.0 for Board Independence. This could point to some governance issues, like insufficient oversight or potential conflicts of interest. The Banking sector isn't far behind, either, as it shows room for improvement with a Board Diversity score of around 3.2, indicating a lack of representation in leadership roles. In summary, while the highly regulated Government Services sector is demonstrating robust governance, both the Construction and Banking sectors have some work to do in enhancing their governance independence and diversity.

Overall ESG Heatmap

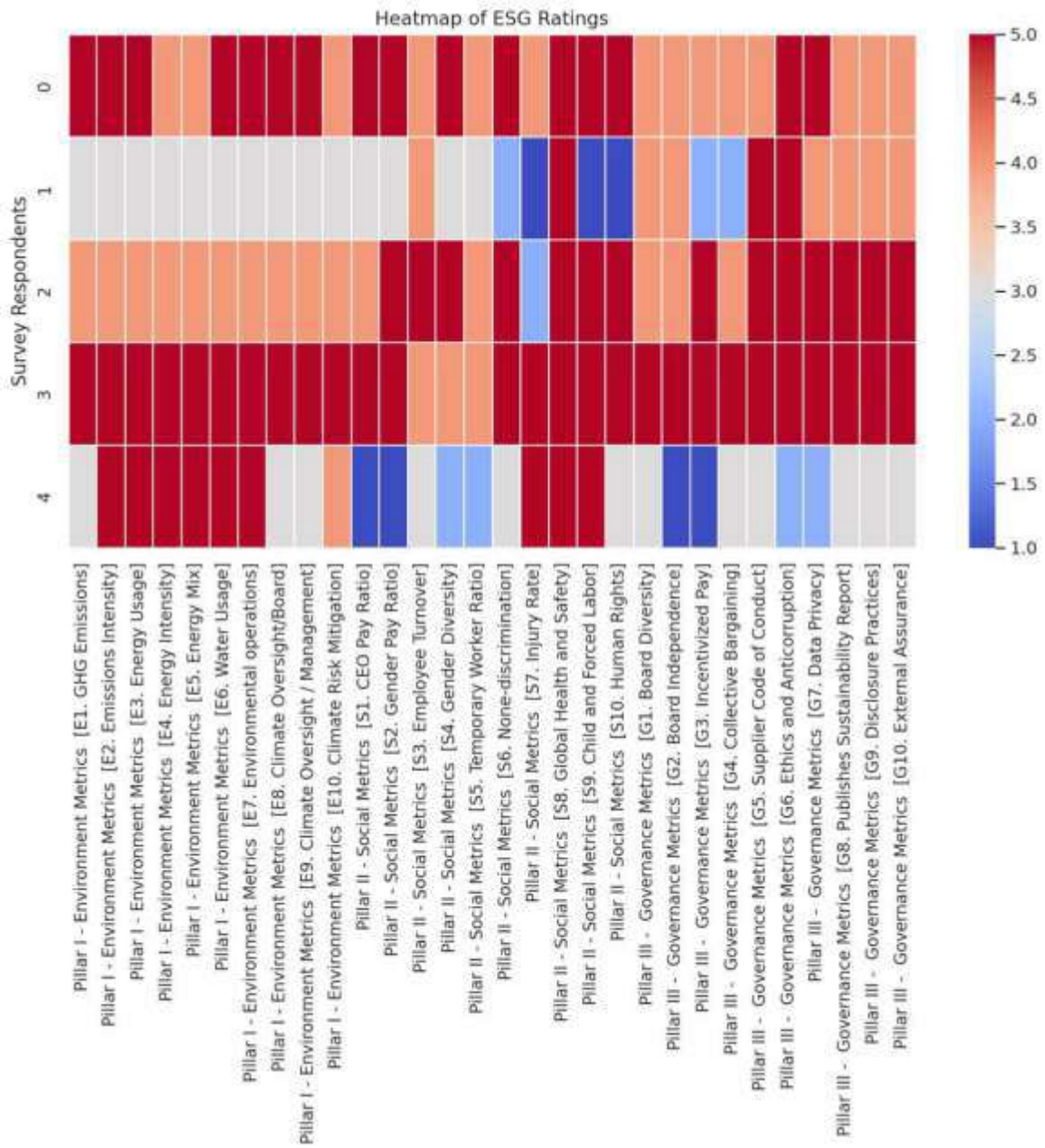

Figure 5: **Heatmap of Overall ESG Metrics**

The heatmap provides a visual depiction of ESG ratings via color coding which allows a quick identification and assessment of performance across different dimensions, where each row represents an individual survey respondent and each column represents a specific ESG indicator. Warmer variables (Red shades) indicate lower ratings and thus weak performance in these areas, while cooler variables (blue shades) indicate high ratings and good performance. Key observations drawn from the heatmap include variability across certain ESG variables - some variables are mixed colors which indicate variability among respondents, while other variables show consistent colors which indicate consensus across respondents. In particular, dominance in red colors in certain columns indicates potential weakness - meaning that a column with an overall low rating (and consistent red color) in the "Governance Pillar - Transparency" area means that additional governance practices are warranted. On the opposite side, columns dominated by blue colors signal areas of strength with strong performance and attentive management. In sum, the heatmap is an effective identification tool to help quickly identify strengths and weakness or areas for improvement in an organization's approach to ESG.

12.0 Conclusion

In the context of the above study, the data collection for the study was a significant challenge since the concept of ESG was emerging and at a nascent stage for many organizations in India. The authors attempted a detailed study by circulating a questionnaire and conducting personal interviews with 30 respondents to gain in-depth insight into the relevant issues. Based on the findings, it was evident that the respondents were well aware of the concept of ESG and the present ESG reporting system followed in their respective organizations. This awareness is crucial since, from this awareness, the journey towards sustainable business with the help of ESG reporting can be effectively envisioned. In general, all the respondents agreed that all the metrics were important (more or less) in the context of ESG reporting. Water usage (E6 metrics) and Global Health and Safety (S8 metrics) were considered the most critical metrics, whereas Board Independence (G2 metrics) was considered the least essential metrics. So-called general issues related to water consumption and promoting health and safety were the areas where the respondents felt more confident expressing their perceptions. However, since the functioning of the board and its implications were less discussed at all levels of the organizational hierarchy, the respondents needed to be able to consider its significance in the context of ESG reporting. This was investigated further during the personal interview. The respondents were more comfortable discussing and reporting the environmental and social issues related to ESG reporting. This needs to be considered by the organizations. They need to be more transparent about board-related governance issues. In addition, during the personal interview, it was observed that the respondents felt more awareness is needed among the employees in general (and not only at the policy-making level) about ESG and its benefits. This is a significant contribution of the study in the context of ESG reporting in India. Since employees are the key stakeholders in implementing ESG practices, organizations need to involve them directly in their ESG-related functions. This will help the organizations implement the ESG metrics more effectively, and their outcomes will be more visible and add to the organisations' competitive edge.

13.0 Authors' remarks

Based on the above findings, authors felt a need to develop an organization-specific drive to promote ESG-related awareness and nurture an ESG-positive mindset among young managers. This process should start as a part of value-based Education at various levels. For example, apart from discussing the relevance of ethical and environment-friendly activities to students in schools and colleges, academic institutions (and universities) offering management education may consider offering specific courses related to ESG. This can directly contribute towards organizational activities, since the students, after completion of the management education, will join the corporate and have the potential to bring more positive change in the organizational culture. The organizations involved in ESG reporting or planning to get involved in the same process need to consider the above.

Navigating the ESG Landscape:
Awareness and Requirements Among Indian Executives

Report - 2

Technology Adaptation and Software Requirements

14.0 Technology Adaptation and Software Requirements

In India, many companies are following BRR (Business Responsibility Reporting) and CSR (Corporate Social Responsibility) reporting standards or guidelines for ESG reporting compliance. Corporate Responsibility and Sustainability Report (BRSR) produced by SEBI (led by MCA) in May 2020, due to lack of technology and lack of defined standards, BRSR report will be applicable to 1000 largest listed companies by March 2021 - needs research and discussion (Dhamne & Modak, 2021), (Sood et al., 2022), (Narayanan & Sirigauri, 2020). However, there is a need for thorough research on employee perceptions and opinions on the process of such reporting, since employees are key stakeholders in the implementation of the ESG practices. In this regard, a ESG software helps companies manage their environmental, social, and governance (ESG) initiatives in a more organized manner and more time-effective way. ESG software can automate data collection, manage reporting frameworks, and provide insights into ESG performance. ESG software can be used by companies of all sizes to improve their ESG performance. Some of the benefits of using ESG software include:

- **Improved data collection and manage ment:** ESG software can help companies collect data from a variety of sources, including internal systems, external data providers, and surveys. This data can then be used to track ESG performance and identify areas for improvement.
- **Automated reporting:** ESG software can automate the reporting process, freeing up employees to focus on other tasks. This can help companies save time and money, and it can also help ensure that reports are accurate and up-to-date.
- **Insights into ESG performance:** ESG software can provide insights into ESG performance, such as identifying areas where a company is doing well and areas where it could improve. This information can be used to make decisions about ESG initiatives and to improve ESG performance over time.

The authors have identified 25 available software(s) which support the ESG Reporting. The software were identified based on the adherence to the standards, implementation, age of the software, ratings, number of reviews, and the quality based on the provided description of the software. The list of software(s) identified is presented as Annexure A. Companies needs to choose an ESG software, keeping certain features and characteristics of such software in mind, which would meet the company's requirement effectively.

The data consolidated from the available secondary sources like ESG Software company websites, social media posts, blogs, discussion boards and company reports, is an effort to give the immediate source of information about the existing ESG Reporting Software in the market. The authors made an attempt to tabulate those data which the executives expressed as source of information for software identification during the interview process. The identified software(s) are further categorized into those who have the headquartered in India and who are not. Presence of decision making authority of the software company in India, is one of the core features for the initial screening and shortlisting process (Sunil M.V., et.al 2024). This particular feature is a hygiene component for Indian company's executives for confidence and convenience quotients which the authors have identified during the interviews. Further, the list of publicly disclosed clients, as available in the

company websites, act as a point of reference and the authenticity of the software.

14.1 Data analysis

Importance-Performance Analysis (IPA), or quadrant analysis (Martilla and James, 1977) framework (Figure 6) has been chosen to investigate the respondents' opinion, related to selection of ESG-software. Research evidences prove the benefits of IPA, in the context of customer service, marketing and strategies for developing and evaluating computing information systems, and, better allocation of organizational resources and HR strategies (Crompton & Duray, 1985; Sampson & Showalter, 1999; Slack, 1994), Skok et al., 2001, Dandridge & Levenburg, 2000; Graf et al., 1992). This framework is based on the two dimensions of attribute importance that define categories, such as, declared importance and derived importance, which help to understand the customer expectation and satisfaction. Declared Importance or mentioned Importance, is attached to attributes by experts in response to direct questions about importance (identified by number/rating/score/percentage). Declared importance is itself independent and may or may not influence the final judgment or evaluation of a trademark. Derived Importance is derived from the collective opinion of practitioners. It is derived from the categorical attributes and related to the context. Based on the derived and declared importance, four quadrants are proposed: core, hidden, eliminator, and conditionally unimportant . The core region contains functions declared and inferred to be most important. Hidden motives include features commonly inferred but not considered important. Eliminators contain features with low derived features but high declared importance. Conditionally immaterial functionality includes functionality that is neither declared nor derived.

Data from the detailed assessment was used to present the ESG software requirements of Indian companies in the form of a "category map", to attain the second objective.

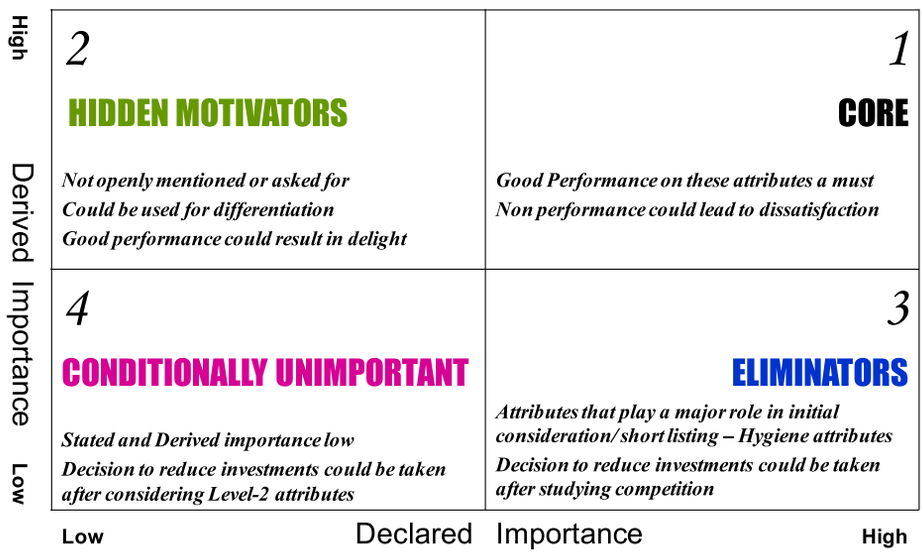

Figure 6: **Explanation of Quadrants of Importance-Performance Analysis**
Source: Authors' analysis

To attain the first objective, the mean scores for each metric, assigned by the respondents were computed (Table 4). The mean score for all the metrics was more than 3 (on a scale of 1 to 5). Therefore, respondents agreed that all the metrics were important (more or less) in the context of ESG reporting. This supports the existing literature, where it is evident that globally, ESG has been recognized as a significant ingredient for organizational sustainability. Water usage (E6 metrics) and Global Health and Safety (S8 metrics) were assigned the highest mean score by the respondents, i.e., these two metrics were perceived to be the most critical metrics for the respondents' respective company ESG reporting. In contrast, Board Independence (G2 metrics) were assigned the least mean score by the respondents, i.e., these metrics were perceived to be the least important metrics for the respondents' respective company ESG reporting.

Table - 4

Descriptive statistics presenting the respondent's perception of metrics and the mean scores for each metrics

Metrics	Mean	Standard Deviation	Kurtosis	Skewness
Pillar I - Environment Metrics [E1. GHG Emissions]	4.2540	0.9327	1.0255	-1.1523
Pillar I - Environment Metrics [E2. Emissions Intensity]	3.9365	1.1198	-0.3311	-0.8681
Pillar I - Environment Metrics [E3. Energy Usage]	4.5397	0.7793	5.9190	-2.1423
Pillar I - Environment Metrics [E4. Energy Intensity]	4.3333	0.8424	3.1525	-1.5418
Pillar I - Environment Metrics [E5. Energy Mix]	4.4127	0.6632	-0.5396	-0.6962
Pillar I - Environment Metrics [E6. Water Usage]	4.5556	0.8187	0.9434	-1.5501
Pillar I - Environment Metrics [E7. Environmental operations]	4.0476	0.9057	-1.4538	-0.2303
Pillar I - Environment Metrics [E8. Climate Oversight/Board]	4.0000	0.8231	1.2632	-0.7170
Pillar I - Environment Metrics [E9. Climate Oversight / Management]	3.7778	0.9579	-0.7124	0.0117
Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	3.5238	1.2682	-1.3298	-0.3001
Pillar II - Social Metrics [S1. CEO Pay Ratio]	3.8571	1.2029	0.1448	-0.8648
Pillar II - Social Metrics [S2. Gender Pay Ratio]	4.1429	1.2554	1.2856	-1.4907
Pillar II - Social Metrics [S3. Employee Turnover]	4.2222	0.9409	2.4929	-1.4255
Pillar II - Social Metrics [S4. Gender Diversity]	4.1429	1.1894	-0.1797	-1.1164
Pillar II - Social Metrics [S5. Temporary Worker Ratio]	4.0635	1.0606	0.9840	-1.2188
Pillar II - Social Metrics [S6. None-discrimination]	4.2698	1.0193	1.9945	-1.5162
Pillar II - Social Metrics [S7. Injury Rate]	4.1905	1.0904	1.7156	-1.4720
Pillar II - Social Metrics [S8. Global Health and Safety]	4.5556	0.9294	8.4797	-2.8439
Pillar II - Social Metrics [S9. Child and Forced Labor]	3.6349	1.5059	-1.3129	-0.5460
Pillar II - Social Metrics [S10. Human Rights]	4.3333	1.0925	3.3434	-1.9333
Pillar III - Governance Metrics [G1. Board Diversity]	3.6984	1.5201	-0.5879	-0.9752
Pillar III - Governance Metrics [G2. Board Independence]	3.3175	1.7304	-1.5869	-0.4913
Pillar III - Governance Metrics [G3. Incentivized Pay]	3.8730	1.2762	-0.3063	-0.8126
Pillar III - Governance Metrics [G4. Collective Bargaining]	4.0159	1.1143	0.8500	-1.1879
Pillar III - Governance Metrics [G5. Supplier Code of Conduct]	4.2381	0.8746	-1.5278	-0.4912
Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	4.5397	0.9302	1.7896	-1.7955
Pillar III - Governance Metrics [G7. Data Privacy]	4.5238	0.8587	2.7854	-1.8915
Pillar III - Governance Metrics [G8. Publishes Sustainability Report]	4.1905	0.9308	4.6531	-1.8825
Pillar III - Governance Metrics [G9. Disclosure Practices]	3.9683	0.8793	-1.7230	0.0629
Pillar III - Governance Metrics [G10. External Assurance]	4.3968	0.6101	-0.6106	-0.4703

Source: Authors' analysis

14.2 Category Map

This study developed the "category map", where the declared importance is represented by the mean ranking scores assigned by the relevant experts (X axis) and the derived importance is represented by the mean ranking scores assigned by the respondents (Y axis), for each feature and characteristics of the ESG software, in the context of effective adoption of the same for a company (Table 5 and Table 6). A total of 9 features and characteristics were considered, based on the literature review and experts' opinion. 5 experts were consulted for the same purpose: 1 Senior Management representative, 1 ESG Practitioner, 1 ESG consultant, 1 Software Developer, and 1 Academician in the ESG field. The experts and the respondents assigned ranking on a scale of 1 to 9 (1 being the least important and 9 being the most important feature/ characteristics of the software for adoption).

Table - 5

Declared Importance

Experts	Adherence to the standards	Cloud / Web based solution	Easy to use	Integration with the existing software	Module based selection option	One stop solution	Price	Support & Services	Training and Supportive Manual
Management Representative	9	1	5	4	6	8	7	3	2
ESG Practitioner	6	2	9	8	5	4	1	3	7
ESG Consultant	9	1	8	2	3	4	5	6	7
Software Developer	5	4	6	3	2	9	1	8	7
Academician	9	3	8	4	2	1	5	7	6
Mean Score	7.6	2.2	7.2	4.2	3.6	5.2	3.8	5.4	5.8

Source: Primary Research Data

Table - 6

Derived Importance

	9	8	7	6	5	4	3	2	
Criteria for Selection of Software	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6	Priority 7	Priority 8	Derived Significance
Adherence to the standards		7		7	11	4		0	169
Cloud / Web based solution			3	8			7	0	90
Easy to use	42							0	378
Integration with the existing software	4	11	15					0	229
Module based selection option		4	8	8				0	136
One stop solution	7	23						0	247
Price	3		7	15	8			0	206
Support and Services			3		7	8		0	88
Training and Supportive Manual	7	3	8	3	4	10	8	0	245

Source: Primary Research Data

With above declared and derived importance, the authors plotted the Category Map of the Indian Corporates Requirements in ESG Software (Figure 3).

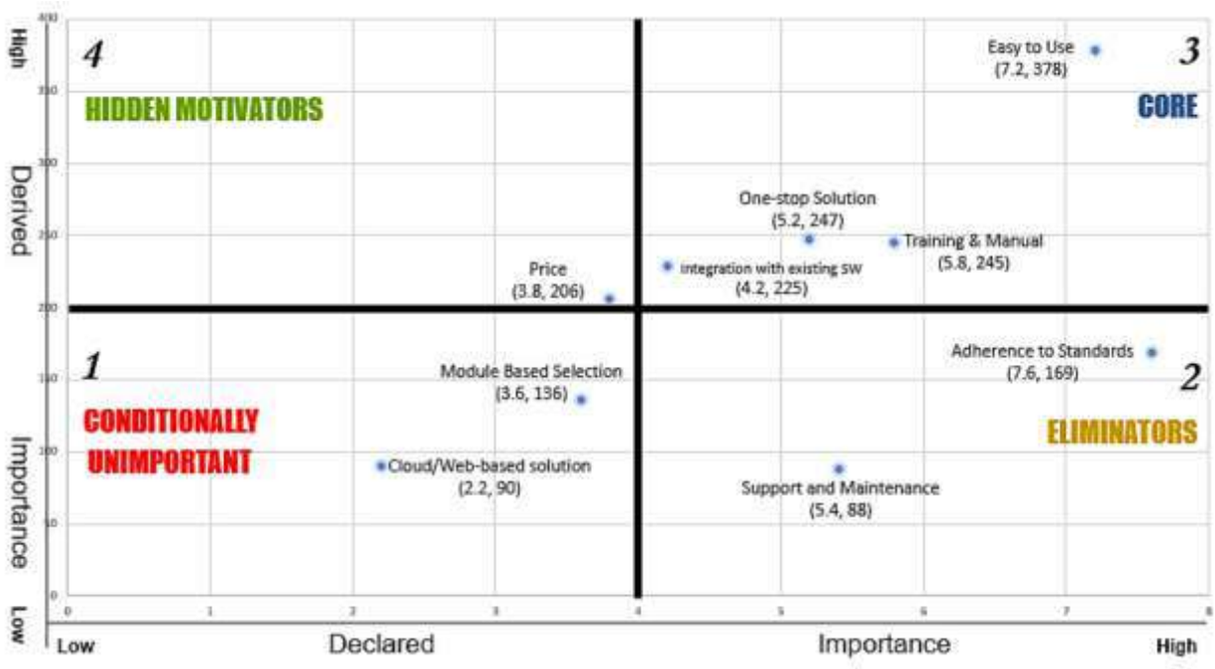

Figure 7: **Indian Corporates Requirements in Adoption of ESG Software**

15.0 Conclusion

The respondents were well aware of the concept of ESG and the present ESG reporting system followed in their respective organizations. This awareness is crucial since, from this awareness, the journey towards sustainable business with the help of ESG reporting can be effectively envisioned. In general, all the respondents agreed that all the metrics were important (more or less) in the context of ESG reporting. Water usage (E6 metrics) and Global Health and Safety (S8 metrics) were considered the most critical metrics, whereas Board Independence (G2 metrics) was considered the least essential metrics. So-called general issues related to water consumption and promoting health and safety were the areas where the respondents felt more confident expressing their perceptions. However, since the functioning of the board and its implications were less discussed at all levels of the organizational hierarchy, the respondents needed to be able to consider its significance in the context of ESG reporting. This was investigated further during the personal interview. The respondents were more comfortable discussing and reporting the environmental and social issues related to ESG reporting. This needs to be considered by the organizations. They need to be more transparent about board-related governance issues.

For adoption of the ESG software, four quadrants revealed the following.

Quadrant 1: Conditionally Unimportant

The category map reveals that the feature(s) i.e.; Need of cloud based or Web-based solution (2.2, 90); and the Module based selection option (3.6, 136) in an ESG Software is Conditionally Unimportant. Since both the solutions have been used by the Indian companies, choosing between cloud based or web-based solution is insignificant. Also, migrating any software from cloud to web-based or visa-versa can be achieved with the prevailing technology solutions, and thus the opinion provided. In regard to the Module based selection option, respondents considered a comprehensive ESG Software, instead of opting for the pick and choose the module they require for the organization. The presence of this feature also justifies the findings from the literature study that Indian corporate needs more awareness, information and the process knowledge to manage the ESG initiative. However, with the demand for pick and choose of selected modules of ESG Software and cloud-based environment to increase, there is every chance to move to quadrant 4 (Hidden Motivators) or to quadrant 2 (Eliminators) in future.

Quadrant 2: Eliminators

The features of an ESG Software, such as, Adherence to Standards (7.6, 169); and Support and Maintenance (5.4, 88) fell under this quadrant. It was expected since Indian corporate is aware about the recent developments and release of standards from various assessment and accreditation bodies including NASDAQ, EFRAG, MSCI, TCFD and others in the international scenario and BRR and BRSR which are from India (Sunil, M.V., et.al, 2024). Expectations of certain standards and the process dictated to the contemporary environment a ESG Software is a hygiene factor and hence the presence of this feature in this quadrant is justifiable. The Support and Maintenance feature of any software is a viability indicator for the customer to select the software. It is obvious that any company will expect this feature to be bundled with the purchase policy and the agreement. Also it observed by the authors many of the ESG practitioners are from the Non-technology background or practices, like from HR, Operations, and Finance, hence continuous support and maintenance is expected to be taken care by the software developer.

Quadrant 3: Core

Easy to use (7.2, 378), One-Stop Solution (5.2, 247), Integration with existing software (4.2, 229); and Training & Supportive Manual (5.8, 245) , are the features/characteristics of an ESG Software, which fell under this quadrant. Many of the respondents were from non-technical background and thus, easy to use features (e.g.; easy navigation, guided alerts, menu driven options and quick reference for the option, and

possibility to integrate the same with the existing software and interoperability), have attracted high declared and high derived importance. The need for detailed training for the employees to work on an ESG Reporting solution and to support them with suitable training tutorials, materials, manuals, and other aids are much required. This justifies the presence of the feature – training and supportive manual – in the Core quadrant in this category map.

Quadrant 4: Hidden Motivators

During the discussion with the expert and the interview with some of the respondents as part of this study, the feature or the Price factor in the ESG Reporting Software did not gain much attention. However, the presence of Price in the Quadrant 4 has justified the author(s) belief that ultimately in the Indian corporate, the price paramount some of the important or hygiene features in decision-making. This is proved again in this study with the category map.

16.0 Authors' remarks

The concept of ESG has been in the focus, among the Indian corporate. The experts opine that the mission of the ESG Center or Cell in any company is intimately related to the parent organization, and ESG practitioners or In-charge of the ESG initiative are concerned today with the meeting the standards, norms and prevailing rules to have their presence in the market and which can act as a core differentiator in the competitive advantage. The effectiveness of a ESG initiative is the balancing act of all the 3 pillars – Environment, Social and Governance – to achieve the desired goal in this initiative. Moreover, it is equally important to get the top management support, social inclusiveness, employees involvement, financial resources and the concern for adherence to the standards, to serve better with the implementation of technology for growth and service excellence.

17.0 Overall Scope for further research

Based on the study, the authors observed that focused research on ESG and its metrics is the need of the hour. The awareness, adoption, modification, resultant change in the matrices and the consequent introduction of new metrics are expected to contribute more insight for the ESG-related research in the coming days. In this context, software(s) related to ESG reporting may become a crucial differentiating factor for organizations. Using such software(s) will not only help to organize the reporting of the ESG-related activities of the organizations systematically but also will readily indicate the performance of the same, against the prevailing benchmark. It is to be noted that the sample size was smaller and non-parametric tests were used for the present study. While this is a limitation of the study, it must be noted that the present study is one of its kind towards investigating the perception of Indian executives on ESG reporting. The present study lays a path for further studies in this direction.

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Annexure A

List of ESG Reporting Software(s)

ESG Reporting Software Details - Which does NOT have the Headquarters in India

ESG Reporting Software Details

[Who have decision-making authority and implementation center in India with local support]

Sl No	Name	Developer/ Company	Status	Country of Origin	Presence in Indian Market	Latest Update/Release	Publicly Disclosed Clients
1	ABB Ability Sustainability	ABB	Active	USA	Bengaluru, Karnataka	Updated ESG compliance modules (2024)	Adani, General Electric, ITC, Dr. Reddy's, Whirlpool
2	Benchmark Gensuite	Benchmark Digital	Active	USA	Bengaluru, Karnataka	Latest updates for CSRD compliance (2025)	NA
3	Benchmark Risk + Compliance	Gensuite	Active	USA	Bengaluru, Karnataka	Updated ESG compliance modules (2024)	Adani, General Electric, ITC, Dr. Reddy's, Whirlpool
4	Cority Software	Cority	Active	Canada	Bengaluru, Karnataka	Regular updates; latest in 2024	Unilever, Volvo, Rio Tinto, Seattle City Light
5	denxpert Software	Inogen Alliance	Active	Hungary	Bengaluru, Karnataka	Latest version released in late 2024	Siemens Energy, GE Power, Lufthansa
6	Diligent	Diligent Corporation	Active	USA	Bengaluru, Karnataka	ESG materiality assessment tools updated (2024)	NA
7	EcoStruxure Resource Advisor	Schneider Electric	Active	France	Bengaluru, Karnataka	Enhanced for CSRD compliance (2024)	Whirlpool, Coco Cola, ABinBev
8	Emex EHS & ESG Software	Emex Software Ltd	Active	Ireland	Bengaluru, Karnataka	Latest release in Q3 2024	Aer Lingus, Addax Petroleum, Premier Foods
9	IBM Envizi ESG Suite	IBM	Active	USA	Bengaluru, Karnataka	March 2025: Security enhancements, ASRS S1 and S2 framework support, GRESB 2025 updates	NA
10	IsoMetrix Lumina	IsoMetrix	Active	South Africa	Bengaluru, Karnataka	ESG Lumina platform updates (2024)	Alterra Capital Partners
11	NAVEX ESG Software	Navex Global	Active	USA	Bengaluru, Karnataka	New GHG tracking tools (2024)	Serco, General Dynamics, Bumble Bee
12	OneTrust Software	OneTrust	Active	USA	Bengaluru, Karnataka	ESG Center enhancements (2024)	None publicly disclosed
13	Siemens Xcelerator Suite	Siemens	Active	Switzer land	Bengaluru, Karnataka	Energy management and emissions tracking updates (2024)	NA
14	Workday ESG Platform	Workday	Active	USA	Bengaluru, Karnataka	Integrated ESG features (2024)	NA

ESG Reporting Software Details

[Who doesn't have decision-making authority and implementation center in India with local support]

Sl No	Name	Developer/ Company	Status	Country of Origin	Latest Update/Release	Publicly Disclosed Clients
1	Brightest	Brightest	Active	USA	New dashboards for NGOs (late-2024)	NYC, Unilever, Arizona State University
2	Locus ESG & Sustainability	Locus Technologies	Active	USA	Updated dashboards (2023)	Bayer, Del Monte, Alstom
3	Metrio Software	Metrio INC	Active	Canada	Latest release in early 2024	Target, The Clorox Company, Air Canada
4	Novisto	Novisto Inc.	Active	Canada	Latest release: Q1 2025	CAE, Intact, IGM Financial
5	SmartHead Software	SmartHead Co.	Active	Slovakia	Last major update in 2023	Tesco, Dell, Citi, EY, BMW
6	Wdesk Software	Workiva	Active	USA	Latest ESG features added in 2024	Cognizant, AMGEN, JPMorgan Chase & Co., Kinder Morgan

Annexure - 1

Shapiro-wilk Test Explaining the Not Satisfactory Normality Assumption

Metrics	W-stat	p-value	alpha	normal
Pillar I - Environment Metrics [E1. GHG Emissions]	0.7643280	0.0000000108943	0.05	no
Pillar I - Environment Metrics [E2. Emissions Intensity]	0.8097410	0.0000001414680	0.05	no
Pillar I - Environment Metrics [E3. Energy Usage]	0.6320310	0.0000000000269	0.05	no
Pillar I - Environment Metrics [E4. Energy Intensity]	0.7422980	0.0000000035126	0.05	no
Pillar I - Environment Metrics [E5. Energy Mix]	0.7465080	0.0000000043392	0.05	no
Pillar I - Environment Metrics [E6. Water Usage]	0.5801470	0.0000000000038	0.05	no
Pillar I - Environment Metrics [E7. Environmental operations]	0.7930480	0.0000000529604	0.05	no
Pillar I - Environment Metrics [E8. Climate Oversight/Board]	0.8252680	0.0000003702120	0.05	no
Pillar I - Environment Metrics [E9. Climate Oversight / Management]	0.7751970	0.0000000195245	0.05	no
Pillar I - Environment Metrics [E10. Climate Risk Mitigation]	0.8469770	0.0000015528700	0.05	no
Pillar II - Social Metrics [S1. CEO Pay Ratio]	0.8056200	0.0000001104720	0.05	no
Pillar II - Social Metrics [S2. Gender Pay Ratio]	0.6990110	0.0000000004507	0.05	no
Pillar II - Social Metrics [S3. Employee Turnover]	0.7612960	0.0000000092867	0.05	no
Pillar II - Social Metrics [S4. Gender Diversity]	0.7185600	0.0000000011103	0.05	no
Pillar II - Social Metrics [S5. Temporary Worker Ratio]	0.7920120	0.0000000499105	0.05	no
Pillar II - Social Metrics [S6. None-discrimination]	0.7301790	0.0000000019350	0.05	no
Pillar II - Social Metrics [S7. Injury Rate]	0.7414470	0.0000000033666	0.05	no
Pillar II - Social Metrics [S8. Global Health and Safety]	0.5194230	0.0000000000005	0.05	no
Pillar II - Social Metrics [S9. Child and Forced Labor]	0.7907620	0.0000000464718	0.05	no
Pillar II - Social Metrics [S10. Human Rights]	0.6489740	0.0000000000529	0.05	no
Pillar III - Governance Metrics [G1. Board Diversity]	0.7421660	0.0000000034894	0.05	no
Pillar III - Governance Metrics [G2. Board Independence]	0.7371160	0.0000000027162	0.05	no
Pillar III - Governance Metrics [G3. Incentivized Pay]	0.7899560	0.0000000443893	0.05	no
Pillar III - Governance Metrics [G4. Collective Bargaining]	0.7992880	0.0000000760139	0.05	no
Pillar III - Governance Metrics [G5. Supplier Code of Conduct]	0.7236890	0.0000000014162	0.05	no
Pillar III - Governance Metrics [G6. Ethics and Anticorruption]	0.5433820	0.0000000000011	0.05	no
Pillar III - Governance Metrics [G7. Data Privacy]	0.6059150	0.0000000000098	0.05	no
Pillar III - Governance Metrics [G8. Publishes Sustainability Report]	0.7039860	0.0000000005648	0.05	no
Pillar III - Governance Metrics [G9. Disclosure Practices]	0.7619060	0.0000000095888	0.05	no
Pillar III - Governance Metrics [G10. External Assurance]	0.7435640	0.0000000037422	0.05	no

Source: Author's Analysis

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