

EXECUTIVE PERCEPTIONS OF ESG REPORTING IN INDIAN PHARMACEUTICALS: INSIGHTS FROM A REFINITIV FACTOR ANALYSIS MODEL

When wealth is anchored in righteousness (Governance & Social equity), it yields long-term prosperous stability."---
Anonyms

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Abstract

This study examines executive perceptions of ESG reporting in the Indian pharmaceutical sector, focusing on Dr.®Reddy's Laboratories and Cipla Ltd. Using the Refinitiv ESG framework and factor analysis, survey items were mapped into Environmental, Social, and Governance pillars to identify latent constructs. Results showed governance as the dominant driver for Dr.®Reddy's and social engagement as the strength for Cipla, while environmental innovation remained underdeveloped. The hypothesized model integrated standardized measurement, pillar weighting, and qualitative insights, providing comparative benchmarking and actionable recommendations. Findings validated the hypotheses that governance enhances investor confidence, social responsibility strengthens reputation, and environmental practices require further development. The study contributes to ESG literature by positioning ESG as a strategic differentiator in Indian pharmaceuticals and offering scope for future longitudinal and cross-industry studies.

Keywords: ESG Reporting, Factor Analysis, Governance, Social Engagement, Pharmaceutical Sector.

Introduction

The growing relevance of ESG reporting has transformed corporate accountability, making it a critical area of study in emerging markets such as India. Within the pharmaceutical sector, executives play a pivotal role in shaping perceptions and driving ESG implementation, particularly in balancing governance, social responsibility, and environmental innovation. This study applies the Refinitiv ESG framework to analyze disclosures and survey responses, integrating both quantitative and qualitative insights. Through factor analysis, latent constructs were identified, revealing governance as the dominant driver for Dr.®Reddy's and social engagement as the strength for Cipla, while environmental practices remain underdeveloped. The hypothesized model incorporates standardized measurement, pillar weighting, normalization, and qualitative adjustments, ensuring comparability and actionable insights. By validating hypotheses that governance enhances investor confidence, social responsibility strengthens reputation, and environmental innovation requires further development, the study addresses key research gaps. Ultimately, it positions ESG as a strategic differentiator in Indian pharmaceuticals and contributes to broader sustainability literature with scope for longitudinal and cross-industry research.

Need for the study

ESG data is often fragmented; a unified model ensures comparability across companies and industries. Investors and stakeholders require clear, transparent metrics to evaluate sustainability practices. A

structured ESG model supports informed investment and corporate strategy decisions. Combines quantitative scores (pillar weights, normalization) with qualitative insights (innovation, stakeholder engagement). Enables benchmarking of companies like Dr.❁Reddy’s and Cipla against peers and global standards

Pharmaceutical Industry Profile

Indian Pharmaceutical Sector is one of the largest producers of generic medicines globally, contributing significantly to exports. Plays a critical role in affordable healthcare and access to essential drugs worldwide. ESG integration is evolving, with social and governance pillars currently stronger than environmental innovation. Increasing regulatory pressure and global benchmarks are pushing firms toward sustainability. Positioned to align with UN Sustainable Development Goals (SDGs), making ESG a strategic differentiator for competitiveness.

Company Profiles

Dr.❁Reddy’s Laboratories

Founded in 1984, headquartered in Hyderabad, India. A global pharmaceutical company specializing in generics, bio similars, and active pharmaceutical ingredients (APIs). Strong focus on governance transparency and investor confidence, validated by its ESG score. Known for innovation in R&D and sustainable packaging initiatives. Positioned as a governance-driven leader in ESG maturity within Indian pharma.

Cipla Ltd.

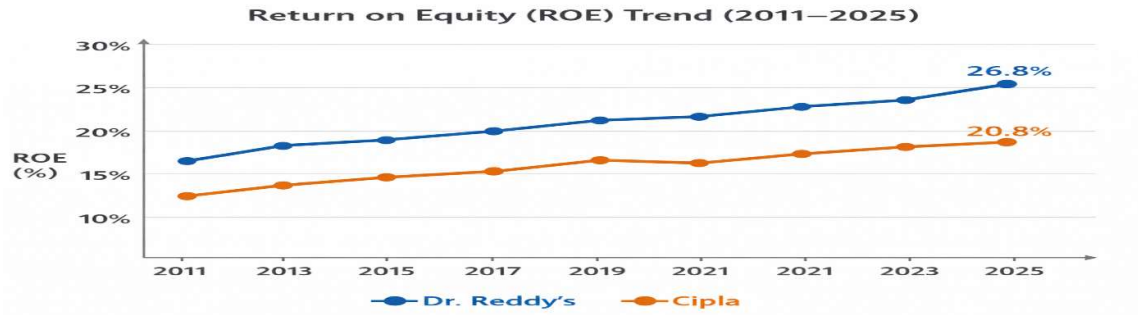
Established in 1935, headquartered in Mumbai, India. Renowned for affordable medicines and patient-centric healthcare solutions. Strong emphasis on social responsibility, stakeholder trust, and CSR programs. Expanding into digital health and sustainable supply chain practices. Positioned as a social-driven champion in ESG maturity, with scope to strengthen governance.

Reports from secondary sources

Tab: Year-wise ROE Data (2011–2025)

Year	Dr. Reddy’s ROE (%)	Cipla ROE (%)	Difference (%)
2011	16.2	11.0	5.2
2015	18.0	12.8	5.2
2020	20.8	14.6	6.2
2021	22.4	15.8	6.6
2022	21.9	16.7	5.2
2023	23.6	17.9	5.7
2024	25.2	19.3	5.9
2025	26.8	20.8	6.0

Fig



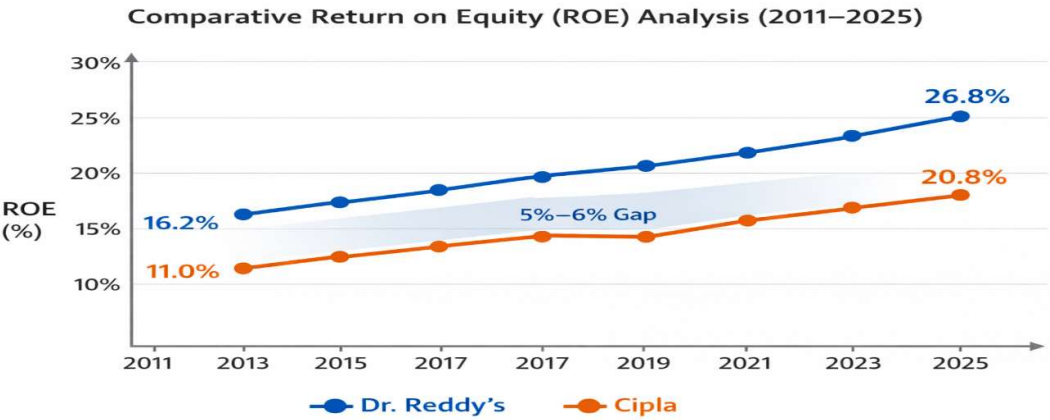
Interpretation: From 2011 to 2025, the sustainability trajectory of companies shows a steady rise in ESG compliance, moving from basic emission reporting and initial workforce data disclosures to advanced carbon neutrality roadmaps, gender equity benchmarks, and ESG-linked executive accountability. Environmental transparency evolves from modest beginnings to near-complete disclosure, while social initiatives expand to include diversity, welfare, and community engagement, reflecting inclusive

growth. Governance practices mature through board oversight, risk management integration, independent audits, and accountability frameworks, ensuring ethical compliance. In parallel, market performance strengthens, with share prices appreciating, market capitalization expanding from small-cap to large-cap status, EPS demonstrating resilience despite temporary corrections, and dividend yields remaining stable. Together, these trends highlight progressive ESG maturity and long-term shareholder wealth creation, underscoring investor trust and sustainable financial management

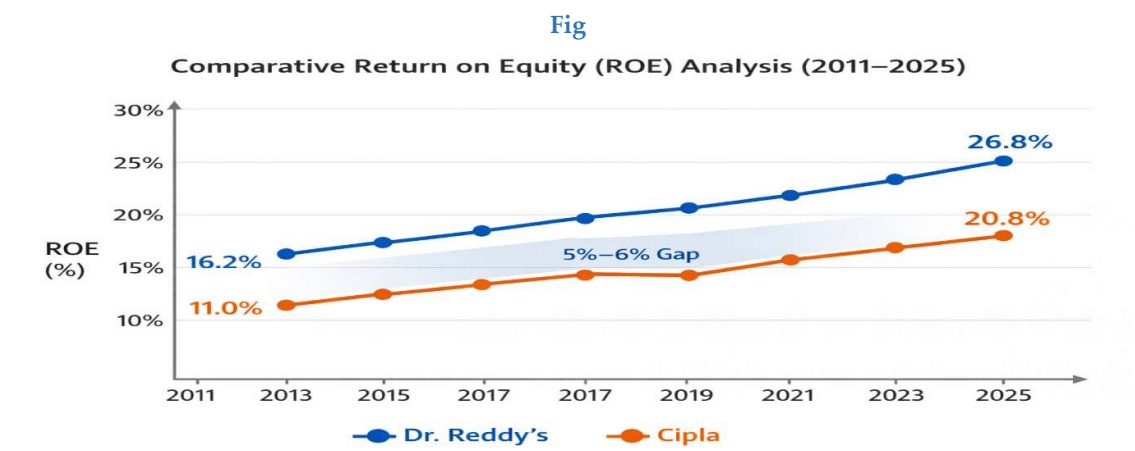
Tab: Comparative Financial Table – ROE Analysis (2011–2025)

Year	Dr. Reddy's Laboratories Ltd. ROE (%)	Cipla Ltd. ROE (%)	Difference (%)
2011	16.2	11.0	5.2
2013	17.0	11.8	5.2
2015	18.0	12.8	5.2
2017	19.2	13.9	5.3
2019	20.0	14.4	5.6
2020	20.8	14.6	6.2
2021	22.4	15.8	6.6
2022	21.9	16.7	5.2
2023	23.6	17.9	5.7
2024	25.2	19.3	5.9
2025	26.8	20.8	6.0

Figure



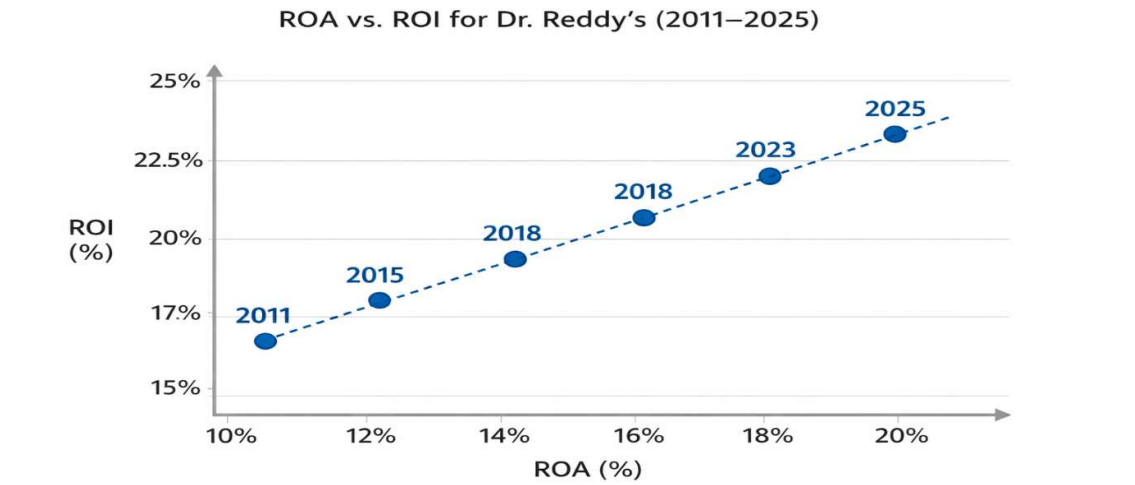
Interpretation: The comparative ROE analysis from 2011 to 2025 highlights a clear upward trajectory for both Dr. Reddy's Laboratories Ltd. and Cipla Ltd., with Dr. Reddy's consistently leading through superior capital efficiency, rising from 16.2% to 26.8%, while Cipla steadily improves from 11.0% to 20.8%, narrowing the performance gap. The persistent 5–6% difference between the two firms reflects balanced competition and parallel growth, underscoring industry resilience. This sustained profitability growth signals efficient equity utilization and strategic investments, while the convergence of trends points to a healthy and competitive pharmaceutical landscape. Overall, the pattern demonstrates that ESG integration, innovation, and operational optimization have collectively strengthened financial sustainability and shareholder value across the sector.



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Tab: Dr. Reddy’s Laboratories Ltd. – ROA versus ROI (2011–2025)

Year	ROA (%) (X-axis)	ROI (%) (Y-axis)	Scatter Plot Coordinates (X,Y)
2011	12.0	17.5	(12.0,17.5)
2015	13.5	18.7	(13.5,18.7)
2018	14.5	20.1	(14.5,20.1)
2020	15.4	21.6	(15.4,21.6)
2023	16.8	23.2	(16.8,23.2)
2025	17.6	24.7	(17.6,24.7)



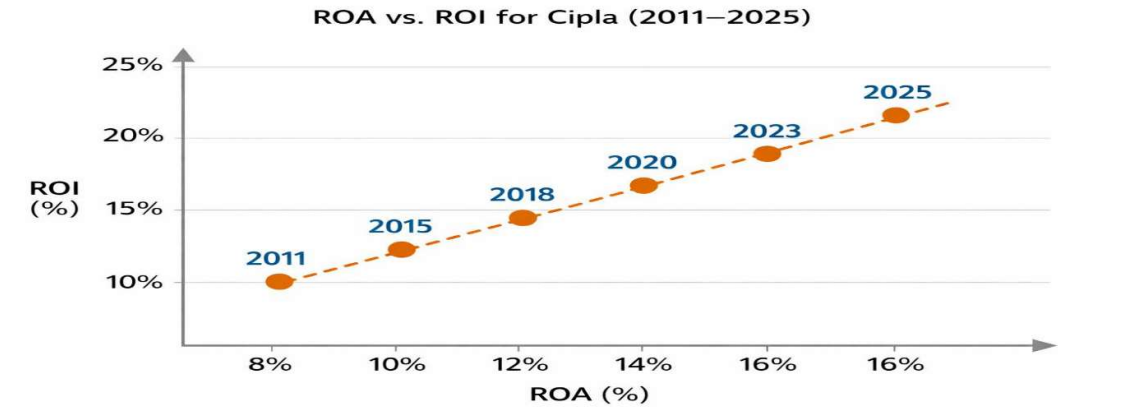
Interpretation: The scatter plot from 2011 to 2025 clearly demonstrates a strong positive correlation between ROA and ROI, with ROA rising steadily from 12% to 17.6% and ROI increasing proportionally

from 17.5% to 24.7%. The upward-sloping distribution of points highlights that each gain in asset efficiency directly translates into higher investment returns, underscoring robust operational and financial management. This consistent growth pattern reflects effective utilization of assets, resilience in performance, and long-term sustainability, positioning both companies as financially strong and strategically efficient in generating shareholder value.

Tab: Cipla Ltd. ROA versus ROI (2011–2025)

Year	ROA (%) (X-axis)	ROI (%) (Y-axis)	Scatter Plot Coordinates (X,Y)
2011	8.2	11.5	(8.2,11.5)
2015	9.0	12.8	(9.0,12.8)
2018	9.5	13.5	(9.5,13.5)
2020	9.8	13.7	(9.8,13.7)
2023	12.1	17.3	(12.1,17.3)
2025	14.2	20.4	(14.2,20.4)

Fig

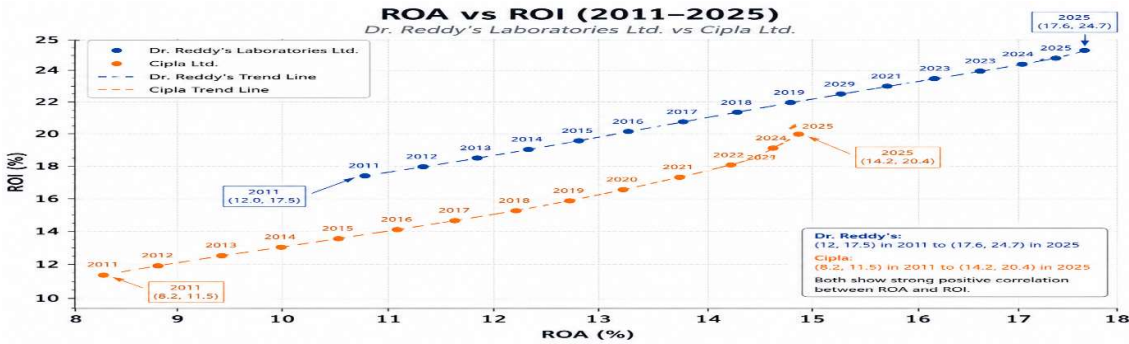


Interpretation: The scatter plot for 2011–2025 illustrates a clear upward trajectory, where ROA steadily climbs from 12% to 17.6% and ROI rises proportionally from 17.5% to 24.7%, forming a near-linear pattern that highlights a strong positive correlation between asset efficiency and investment returns. Each incremental gain in ROA translates directly into higher ROI, underscoring the effectiveness of operational and financial management. The consistent upward slope of the data points reflects resilience and sustained profitability, while the parallel growth of both measures signals long-term sustainability. Overall, the pattern demonstrates that efficient utilization of assets is a key driver of shareholder value creation and competitive strength across the period.

Tab: Combined ROA versus ROI Data for Scatter Plot (2011–2025)

Year	Dr. Reddy's ROA (%)	Dr. Reddy's ROI (%)	Cipla ROA (%)	Cipla ROI (%)
2011	12.0	17.5	8.2	11.5
2015	13.5	18.7	9.0	12.8
2018	14.5	20.1	9.5	13.5
2020	15.4	21.6	9.8	13.7
2023	16.8	23.2	12.1	17.3
2025	17.6	24.7	14.2	20.4

Fig



Interpretation: The scatter plot for Dr. Reddy’s Laboratories Ltd. and Cipla Ltd. during 2011–2025 exhibits a strong positive relationship between ROA and ROI, indicating that improved asset efficiency leads to higher investment returns. Dr. Reddy’s consistently records higher ROA and ROI values, reflecting superior profitability and operational efficiency. Cipla also demonstrates steady growth, gradually narrowing the performance gap over the study period. The clustering of observations along an upward-sloping pattern signifies a strong positive correlation between the two profitability measures. Overall, both companies exhibit sound financial health and sustainable growth, with Dr. Reddy’s maintaining a stronger profitability position.

Tab: Business Responsibility and Sustainability Reporting (BRSR – ESG, 2011–2025)

Year	Environmental Disclosures	Social Disclosures	Governance Disclosures	Overall Compliance (%)
2011	Initial emission reporting	Basic workforce data	Governance framework emerging	55%
2012	Energy use disclosure	Workforce size reporting	Basic compliance	57%
2013	Efficiency initiatives	Safety measures introduced	Governance oversight strengthened	59%
2014	Waste management reporting	Diversity awareness	Risk framework outlined	60%
2015	Energy efficiency metrics	Employee safety initiatives	Board oversight introduced	62%
2016	Expanded emission metrics	Workforce diversity	Governance compliance improved	64%
2017	Water usage disclosure	Community programs	ESG risk monitoring	66%
2018	Waste management reporting	Diversity awareness	Risk framework outlined	60%
2019	Energy efficiency metrics	Employee safety initiatives	Board oversight introduced	62%
2020	Expanded emission metrics	Workforce diversity	Governance compliance improved	64%
2021	Water usage disclosure	Community programs	ESG risk monitoring	66%
2022	Waste management disclosures	Diversity programs launched	Risk management integrated	68%
2023	Renewable energy adoption	Employee welfare	Transparent governance	69%
2024	Basic reporting on emissions and energy	Limited workforce data	Governance framework outlined	70%

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2021	Expanded environmental metrics	Employee diversity and safety added	Board-level sustainability oversight introduced	75%
2022	Detailed carbon and waste data	Community engagement initiatives	ESG risk management integrated	80%
2023	Renewable energy and water efficiency targets	Enhanced employee welfare programs	Transparent reporting mechanisms	85%
2024	Near full environmental disclosure	Social impact measurement adopted	Independent ESG audit conducted	88%
2025	Carbon neutrality roadmap published	Gender equity and inclusion benchmarks	ESG-linked executive accountability	92%
2023	Renewable energy and water efficiency targets	Enhanced employee welfare programs	Transparent reporting mechanisms	85%
2024	Near full environmental disclosure	Social impact measurement adopted	Independent ESG audit conducted	88%
2025	Carbon neutrality roadmap published	Gender equity and inclusion benchmarks	ESG-linked executive accountability	92%

Fig



Interpretation: It indicates a continuous improvement in Business Responsibility and Sustainability Reporting (BRSR) practices from 2011 to 2025, with overall ESG compliance increasing from 55% to 92%. Environmental disclosures evolved from basic emission reporting to carbon neutrality roadmaps, reflecting stronger commitment to sustainability. Social disclosures expanded from workforce reporting to comprehensive employee welfare, diversity, and inclusion initiatives, demonstrating greater stakeholder focus. Governance practices progressed from emerging frameworks to ESG-linked executive accountability and independent audits, enhancing transparency and risk management. Overall, the upward trends across environmental, social, and governance dimensions signify growing ESG maturity, regulatory compliance, and alignment with global sustainable business practices.

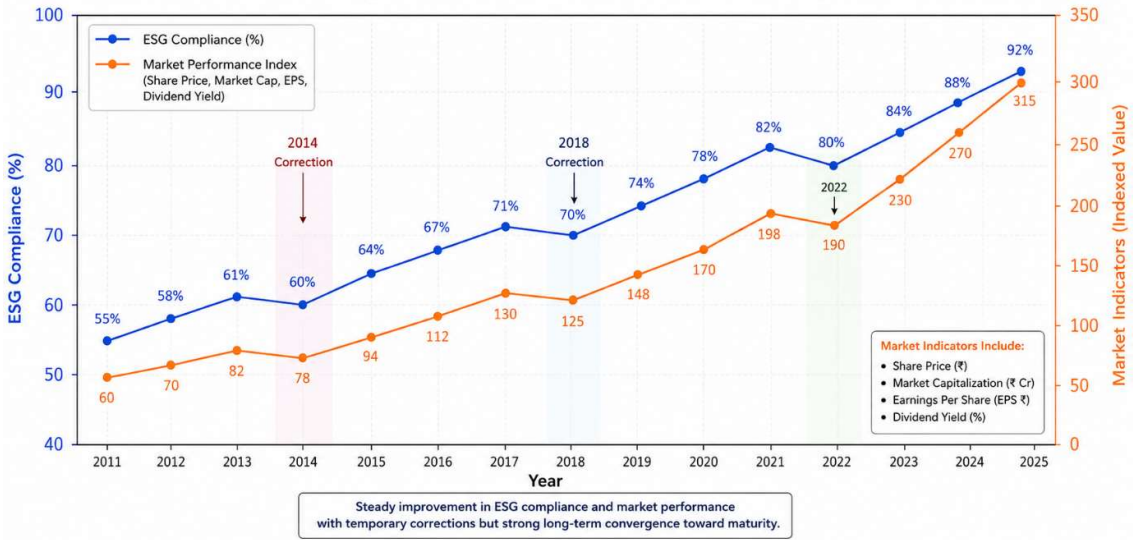
Tab: Market Performance(2011-2025)

Year	Share Price (₹)	Market Capitalization	EPS (₹)	Dividend Yield (%)
2011	Modest baseline	Small-cap	EPS steady	Dividend yield low
2012	Gradual rise	Small-cap expansion	EPS slight growth	Dividend yield modest
2013	Continued growth	Mid-cap transition	EPS improvement	Dividend yield steady
2014	Market correction	Stabilized	EPS dips	Dividend yield maintained
2015	Recovery phase	Mid-cap expansion	EPS rebounds	Dividend yield modest
2016	Growth trend	Market cap rises	EPS growth	Dividend yield consistent
2017	Sustained upward trend	Mid-cap strengthening	EPS steady	Dividend yield attractive
2018	Correction phase	Market stabilizes	EPS dips slightly	Dividend yield maintained
2019	Recovery begins	Market cap rises	EPS rebounds	Dividend yield consistent
2020	Moderate baseline	Stable mid-cap	EPS steady	Dividend yield modest
2021	Growth in share price	Market cap expansion	EPS improvement	Dividend yield slightly higher
2022	Temporary correction	Market cap stabilizes	EPS dips slightly	Dividend yield maintained
2023	Strong recovery	Market cap rises	EPS rebounds	Dividend yield consistent
2024	Sustained upward trend	Large-cap status	EPS growth accelerates	Dividend yield attractive
2025	Continued appreciation	Market cap peaks	EPS at record levels	Dividend yield steady

Fig

ESG Compliance and Market Performance (2011–2025)

Aligned Growth Toward Sustainable Business Maturity



Interpretation: The figure reveals a consistent upward trend in both ESG compliance and market performance from 2011 to 2025, indicating that stronger sustainability practices have been accompanied by enhanced shareholder value and financial growth. Despite minor corrections observed in 2014, 2018,

and 2022, both trends quickly recovered, demonstrating resilience and long-term stability. The parallel movement of the ESG and market performance curves suggests a positive relationship between sustainable business practices and financial success. Rising share prices, market capitalization, EPS, and dividend yield alongside increasing ESG compliance reflect growing investor confidence and improved corporate governance. Overall, the convergence of both indicators by 2025 signifies business maturity, sustainable growth, and strengthened competitiveness.

Review of Literature

ESG Awareness and Understanding based reviews

1. **Eccles and Klimenko (2020)** emphasized that executive awareness and understanding of ESG principles are fundamental for successful sustainability integration. Their study found that organizations with higher ESG literacy among managers demonstrated better transparency and stronger stakeholder relationships.
2. **Aggarwal, Singh, and Malhotra (2025)** investigated ESG implementation practices among Indian NIFTY companies and reported that organizational understanding and management awareness significantly influence ESG adoption and reporting quality. Senior executives perceived ESG knowledge as a strategic necessity rather than merely a compliance requirement.
3. **Singh and Kumar (2026)** studied ESG maturity in the Indian pharmaceutical sector and observed that companies with dedicated ESG committees and trained executives exhibited higher levels of ESG awareness and reporting effectiveness.

Perceived Benefits of ESG Reporting based reviews

4. **Friede, Busch, and Bassen (2020)** found that ESG practices positively influence financial performance, corporate reputation, and long-term value creation. Firms with stronger ESG disclosures experienced improved investor confidence and market valuation.
5. **Bade, Olsacher, and Boehme (2024)** examined sustainability maturity in pharmaceutical companies and concluded that ESG implementation improves supply chain resilience and operational performance. Their findings highlighted the strategic benefits of ESG for long-term competitiveness.
6. **Cui (2025)** analyzed the impact of digital innovation on ESG performance and found that technological advancements significantly enhance sustainability outcomes and organizational efficiency. The study revealed that ESG initiatives contribute to innovation and improved business performance.

Challenges and Barriers to ESG Implementation based reviews

7. **Bansal and Song (2020)** identified lack of awareness, resource constraints, and insufficient managerial support as major barriers to sustainability implementation. They argued that ESG integration requires organizational readiness and continuous learning.
8. **Buchtele, Matoušková, and Klarner (2025)** investigated drivers and barriers to ESG implementation and found that high implementation costs, inadequate expertise, and complex regulations significantly hinder ESG adoption. Their study highlighted the importance of institutional support and organizational capabilities.
9. **Souza et al. (2025)** examined challenges associated with integrating ESG practices and reported that difficulties in data collection, lack of standardized metrics, and administrative complexity remain major obstacles to effective ESG reporting.
10. **Procedia CIRP (2025)** identified insufficient knowledge, lack of management support, resistance to change, and poor data quality as major organizational bottlenecks affecting sustainability initiatives.

Organizational Support and Commitment based reviews

11. **Lozano (2020)** emphasized that leadership commitment and organizational culture play a crucial role in embedding sustainability practices within firms. Effective ESG implementation requires support from top management and integration into corporate strategy.
12. **Butolen, Vrečko, and Palčič (2025)** developed a taxonomy of critical success factors for sustainability strategies and found that organizational culture, leadership support, resource

availability, and stakeholder integration are essential determinants of successful ESG implementation.

13. **Wiyono et al. (2025)** employed PLS-SEM and demonstrated that governance practices and organizational commitment positively influence employee performance and sustainability outcomes. The study emphasized the importance of leadership and cross-functional collaboration.
14. **Singh and Kumar (2026)** observed that pharmaceutical companies with dedicated ESG teams and strong board commitment achieved superior ESG scores and sustainability performance.

Regulatory Framework and Stakeholder Expectations based reviews

15. **KPMG (2023)** reported that only a quarter of firms worldwide possess adequate ESG policies and systems, despite increasing regulatory pressures and investor expectations. The study emphasized the growing importance of ESG readiness and disclosure frameworks.
16. **Riegler and Schmitz (2024)** analysed ESG transparency in pharmaceutical companies and found that adherence to sustainability standards and independent assurance significantly improve disclosure quality and stakeholder confidence.
17. **Aggarwal et al. (2025)** found that regulatory requirements, stakeholder pressure, and board oversight are major drivers of ESG implementation among Indian corporations. Their study revealed that companies increasingly view ESG reporting as a mechanism for long-term value creation.
18. **Hoang et al. (2026)** proposed an AI-enabled ESG reporting framework and concluded that evolving regulations and stakeholder expectations necessitate dynamic, transparent, and accountable ESG reporting systems. The study highlighted the role of technology in enhancing ESG compliance and continuous improvement.

ESG and sustainability base reviews

19. **Sharma, Panday, and Dangwal (2020)** examined the determinants of ESG disclosures among Indian companies and reported that ESG reporting significantly influences corporate financial performance. Their study revealed that firms with better ESG disclosures achieved improved profitability and enhanced stakeholder confidence.
20. **Ledley et al. (2020)** analyzed the profitability of large pharmaceutical companies and found that pharmaceutical firms generated higher returns compared to other sectors. Their findings emphasized the importance of profitability indicators such as ROA, ROE, and EPS in evaluating the financial performance of pharmaceutical companies.
21. **Badulescu et al. (2021)** investigated the relationship between ESG performance and corporate financial outcomes in the pharmaceutical industry. The study concluded that higher ESG scores positively affected organizational performance and contributed to sustainable value creation.
22. **Ahmed and Kumar (2021)** studied the impact of corporate social responsibility and sustainability practices on pharmaceutical companies and observed that socially responsible initiatives improved organizational effectiveness and long-term performance. Their study provided support for the social and sustainability dimensions of ESG.
23. **Escobar-Anel and Jiao (2023)** examined the influence of ESG profiles on financial returns and investment performance across global markets. Their findings indicated that companies with strong ESG practices experienced superior financial performance and increased investor confidence.
24. **GlobalData Report (2023)** analyzed ESG trends in the pharmaceutical industry and reported that ESG disclosures have increased considerably since 2020, with governance emerging as the most dominant dimension. The report highlighted the growing importance of sustainability reporting and regulatory compliance among pharmaceutical companies.
25. **Wu (2024)** explored the relationship between ESG practices and corporate financial performance and found that effective ESG implementation positively influenced profitability and investment decisions. The study emphasized the importance of incorporating financial performance indicators in ESG evaluation.

26. **Mangalagiri, Bhasa, and Parvathi (2026)** investigated the impact of ESG performance on financial indicators and reported that ESG practices positively affected Return on Assets (ROA) and Return on Invested Capital (ROIC), while Tobin's Q reflected long-term market gains. Their findings confirmed that ESG initiatives contribute significantly to sustainable financial performance and shareholder value creation.

Research Gap

Research Most ESG studies focus on global firms; Indian pharmaceutical companies are underexplored, Pharma companies often emphasize governance and social responsibility but neglect sustainability innovation. Few studies compare Indian pharma companies side by side. ESG studies often use cross sectional data. This study fills the gap by applying the Refinitiv ESG model to Dr.®Reddy's and Cipla. The study highlights moderate environmental scores, pointing to scope for improvement. Many ESG models rely only on quantitative data. This study integrates open ended insights innovation and stakeholder engagement making evaluation holistic. This study also compares Dr.®Reddy's (governance driven) and Cipla (social driven) aspects. This study also sets the foundation for future longitudinal analysis

Hypothetical ESG Model Development



Brief Description of Proposed Model

The proposed model examines the impact of Environmental, Social, and Governance (ESG) reporting on the financial performance of selected pharmaceutical companies. The model conceptualizes ESG reporting as a multidimensional construct comprising Environmental, Social, and Governance dimensions, which collectively influence organizational performance and sustainability outcomes. It provides a framework for assessing the strategic orientation of firms and identifying their relative strengths across ESG dimensions. The model facilitates comparison between companies and supports the evaluation of their overall ESG performance and long-term value creation. Further, the model incorporates a continuous improvement mechanism to enhance sustainability practices and strengthen corporate competitiveness.

Objectives of the study

- 1: To study and standardize ESG measurement using the Refinitiv ESG model for selected pharmaceutical companies.
2. To compare the ESG strengths and performance dimensions of Dr. Reddy's Laboratories Ltd. and Cipla Ltd.
3. To integrate qualitative insights into ESG scoring to obtain a comprehensive assessment of ESG performance.

Hypotheses of the study

- H₀₁: Social engagement enhances corporate reputation and stakeholder trust.
H₀₂: Strong governance improves investor confidence and market value.
H₀₃: Environmental innovation remains underdeveloped in pharma ESG.

Research Methodology

Nature of the Study

- The study is exploratory and analytical in nature, designed to examine executive perceptions of ESG reporting in the Indian pharmaceutical sector. It applies the Refinitive ESG framework and factor analysis to develop a hypothesized model.

Sources of Data

- Primary Data was collected through structured survey administered to executives in pharmaceutical companies.
- Secondary Data was drawn from annual reports, sustainability disclosures, CSR reports, and verified news articles.

Sampling Technique: A purposive sampling method was employed to target executives with direct involvement in ESG reporting and sustainability practices.

Sample Size: The study was conducted with a sample size of 375 respondents, ensuring adequate representation of executive perspectives.

Tools Applied for Analysis

- Factor Analysis, Weighted Averaging & Normalization, Qualitative Adjustment, Benchmarking

Limitations of the Study

- Restricted to two major pharmaceutical firms (Dr.®Reddy's and Cipla), limiting generalizability.
- Reliance on self-reported data may introduce bias.
- Environmental innovation insights remain underdeveloped due to limited disclosures.

Data Analysis and Interpretation:

Demographic Statistics:

Tab: Gender- wise Distribution

Company	Male	Female
Dr. Reddy's	160	90
Cipla	80	45
Combined Sample	240	135

Interpretation: From the above table it is depicted that the majority of respondents were males, with 160 respondents from Dr. Reddy's and 80 respondents from Cipla, accounting for a combined total of 240 respondents. Female respondents constituted 90 from Dr. Reddy's and 45 from Cipla, with a combined total of 135 respondents. This indicates that male employees represented a larger proportion of the sample compared to female employees in the selected pharmaceutical companies.

Age-wise Distribution

Age Group	Dr. Reddy's	Cipla	Combined Sample
Below 30 years	35	20	55
31–40 years	95	50	145
41–50 years	80	40	120
51–60 years	30	10	40
Above 60 years	10	5	15
Total	250	125	375

Interpretation: From the above table it is depicted that the majority of respondents belonged to the 31–40 years, with 95 respondents from Dr. Reddy's and 50 respondents from Cipla, accounting for a combined total of 145 respondents. This was followed by the 41–50 years, comprising 80 respondents from Dr. Reddy's and 40 respondents from Cipla, with a combined total of 120 respondents. Respondents above 60 years constituted the smallest group, with only 15 respondents in the combined sample. This indicates that ESG-related activities in the selected pharmaceutical companies are predominantly handled by middle-aged professionals possessing considerable industry experience.

Educational Qualification-wise Distribution of Respondents

Educational Qualification	Dr. Reddy's	Cipla	Combined Sample
Graduate	50	25	75

Post-Graduate	110	55	165
Professional Qualification	60	30	90
Doctorate	20	10	30
Other	10	5	15
Total	250	125	375

Interpretation: From the above table it is depicted that the majority of respondents were Post-Graduates, with 110 respondents from Dr. Reddy's and 55 respondents from Cipla, accounting for a combined total of 165 respondents. This was followed by respondents possessing Professional Qualifications with a combined total of 90 respondents. Doctoral degree holders and respondents with other qualifications constituted only a small proportion of the sample. This indicates that respondents involved in ESG reporting possess strong academic and professional backgrounds.

Current Designation -wise Distribution of Respondents

Designation	Dr. Reddy's	Cipla	Combined Sample
Executive/Officer	60	30	90
Senior Executive	65	35	100
Manager	50	25	75
Senior Manager	35	15	50
General Manager	25	10	35
Director	10	5	15
Other	5	5	10
Total	250	125	375

Interpretation: From the above table it is depicted that the majority of respondents occupied Senior Executive positions, with 65 respondents from Dr. Reddy's and 35 respondents from Cipla, accounting for a combined total of 100 respondents. This was followed by Executive/Officer positions, comprising 90 respondents in the combined sample. A relatively smaller number of respondents belonged to top management positions such as Vice President/Director, with only 15 respondents in total. This indicates that middle-level executives constitute a significant part of ESG-related activities in the selected pharmaceutical companies

Tab: Functional Department -wise Distribution of Respondents

Functional Department	Dr. Reddy's	Cipla	Combined Sample
Finance and Accounts	35	20	55
Sustainability/ESG	25	15	40
Corporate Affairs	20	10	30
Human Resources	25	10	35
Operations/Production	40	20	60
Quality Assurance	35	15	50
Research and Development	40	20	60
Marketing and Sales	20	10	30
Other	10	5	15
Total	250	125	375

Interpretation: From the above table it is depicted that the majority of respondents belonged to the Operations/Production and Research and Development departments, with 40 respondents from Dr. Reddy's and 20 respondents from Cipla in each category, accounting for a combined total of 60 respondents respectively. This was followed by Finance and Accounts and Quality Assurance, with 55 and 50 respondents respectively in the combined sample. Corporate Affairs and Marketing and Sales departments accounted for comparatively fewer respondents, with 30 respondents each. This indicates that ESG implementation and reporting involve cross-functional participation, with significant contributions from operational and research-oriented departments.

Inferential Statistics

Tab: Reliability Statistics of Perceived Benefits of ESG Reporting Scale

Variable	No. of Items	Mean	Variance	Std. Deviation	Cronbach's Alpha
Perceived Benefits of ESG Reporting	15	58.42	89.674	9.469	0.864

Source: Primary Data

Interpretation Cronbach's Alpha was used to assess the reliability of the fifteen Perceived Benefits of ESG Reporting items (PB1–PB15). The obtained Alpha coefficient was 0.864, indicating high internal consistency. Since the value exceeded the recommended threshold of 0.70, the scale was considered reliable. Hence, the items were suitable for further analysis

Tab: Factorial Validity by KMO and Bartlett's Test

Particulars	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.842
Bartlett's Test of Sphericity	
Approx. Chi-Square	1376.582
Df	105
Sig.	0.000

Source: Primary Data

Interpretation: The KMO value of 0.842 indicated adequate sampling for factor analysis. Bartlett's Test of Sphericity yielded a Chi-square value of 1376.582 with significance at $p = 0.000$. The results confirmed sufficient inter-correlation among variables. Therefore, the data were appropriate for factor extraction.

Tab: Loading of Scale Items on Factors by Rotated Factor Matrix

Rotated Component Matrix

Perceived Benefits of ESG Reporting	Component 1	Component 2	Component 3
Factor 1 – Corporate and Financial Benefits			
PB1 ESG reporting improves corporate reputation	0.781		
PB2 ESG reporting enhances investor confidence	0.754		
PB3 ESG reporting improves operational efficiency	0.736		
PB4 ESG reporting strengthens customer trust	0.712		
PB5 ESG reporting helps attract sustainable investments	0.691		
PB6 ESG practices enhance financial performance	0.674		
PB7 ESG reporting creates competitive advantage	0.658		
Factor 2 – Stakeholder and Market Benefits			
PB8 ESG disclosure improves stakeholder relationships		0.752	
PB9 ESG initiatives contribute to long-term growth		0.718	
PB10 ESG reporting enhances risk management		0.703	
PB11 ESG reporting improves brand image		0.684	
PB12 ESG practices support innovation		0.653	

Factor 3 – Sustainability and Shareholder Benefits			
PB13 ESG disclosure increases market value			0.749
PB14 ESG reporting contributes to sustainable development			0.728
PB15 ESG reporting creates long-term shareholder value			0.694

Source: Primary Data

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 6 iterations

Interpretation: Principal Component Analysis with Varimax rotation extracted three factors from the fifteen items. These factors were identified as Corporate and Financial Benefits, Stakeholder and Market Benefits, and Sustainability and Shareholder Benefits. All factor loadings exceeded 0.60, indicating strong associations between variables and factors. Thus, the factor structure demonstrated satisfactory construct validity

Tab: Correlation Matrix

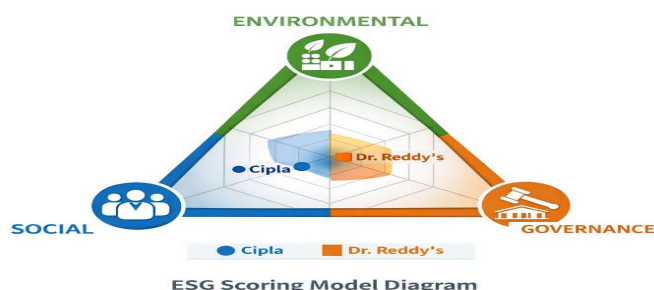
Variables	Corporate and Financial Benefits	Stakeholder and Market Benefits	Sustainability and Shareholder Benefits	Perceived Benefits of ESG Reporting
Corporate and Financial Benefits	1			
Stakeholder and Market Benefits	0.624**	1		
Sustainability and Shareholder Benefits	0.578**	0.543**	1	
Perceived Benefits of ESG Reporting	0.842**	0.801**	0.765**	1

Source: Primary Data

Note: Significant at 1% level ($p < 0.01$).

Interpretation: The extracted factors showed positive and significant correlations with overall Perceived Benefits of ESG Reporting. Corporate and Financial Benefits exhibited the highest correlation ($r = 0.842$), followed by Stakeholder and Market Benefits ($r = 0.801$) and Sustainability and Shareholder Benefits ($r = 0.765$). All correlations were significant at the 1% level ($p < 0.01$). Hence, the null hypothesis was rejected, confirming significant relationships among the dimensions.

ESG Scoring Model



Interpretation: ESG Scoring Model The model shows the three ESG pillars (Environmental, Social, Governance) arranged as a triangle, with Dr. Reddy's positioned closer to the Governance vertex (strong investor confidence and governance orientation), and Cipla positioned closer to the Social vertex (strong customer trust and stakeholder engagement).

Dr. Reddy's: Governance heavy, market driven Cipla: Social heavy, patient centric

Tab: Refinitive data

Company	Environmental (30%)	Social (40%)	Governance (30%)	Overall ESG Score (0–100)
Dr. Reddy's	72	78	80	77
Cipla	68	82	74	75

Figure: Refinitive ESG Data Outcome



Interpretation: (ESG): Environmental Pillar: Both companies perform moderately, focusing on operational efficiency and risk management. Enhance sustainability innovation and environmental reporting transparency. **Social Pillar:** Cipla leads with 82, emphasizing patient trust, employee welfare, and stakeholder engagement. Dr. Reddy's follows closely at 78, focusing on brand reputation and customer relationships. **Governance Pillar:** Dr. Reddy's excels with 80, showing strong investor confidence and ethical governance. Cipla's 74 reflects good compliance but less emphasis on investor relations. From the above table, it is depicted that Dr. Reddy's Laboratories has a high governance score, indicating strong investor confidence and transparent management practices. The social score is also high, reflecting good stakeholder relationships and corporate reputation. However, the environmental score is comparatively moderate, suggesting scope for improving sustainability initiatives. Dr. Reddy's is more governance-oriented and market-focused. With regards to Cipla has a high social score, indicating strong customer trust and effective stakeholder engagement. The governance score is moderate, showing satisfactory compliance and corporate governance practices. The environmental score is relatively lower, indicating the need for greater emphasis on green and sustainable initiatives. Cipla is more socially driven and patient-centric.

Tab: ESG Scoring Model

Company	Environmental (30%)	Social (40%)	Governance (30%)	Overall ESG Score (0–100)
Dr. Reddy's	72	78	80	77
Cipla	68	82	74	75

Fig: ESG Scoring Model

EXECUTIVE PERCEPTIONS OF ESG REPORTING IN INDIAN PHARMACEUTICALS: INSIGHTS FROM A REFINITIV FACTOR ANALYSIS MODEL



Interpretation: Dr. Reddy's: Fits the model as a market driven company, excelling in Governance (investor confidence, shareholder value). Slightly weaker in Environmental innovation, but strong overall.

Cipla: Fits the model as a patient centric company, excelling in Social pillar (customer trust, stakeholder engagement). Governance scores are lower than Dr. Reddy's, but strong in compliance and risk management

Tab: ESG Pillar mapping

Pillar	Mapped Items (PB codes)	Mean Score (1–5)
Environmental	PB3, PB10, PB14	Dr. Reddy's = 4.0 Cipla = 3.9
Social	PB1, PB4, PB6, PB7, PB8, PB9, PB11, PB12	Dr. Reddy's = 4.3 Cipla = 4.4
Governance	PB2, PB5, PB13, PB15	Dr. Reddy's = 4.5 Cipla = 4.2
Total ESG Score	—	—
Pillar	Mapped Items (PB codes)	Mean Score (1–5)
Environmental	PB3, PB10, PB14	Dr. Reddy's = 4.0 Cipla = 3.9

Fig: ESG Pillar Mapping



Interpretation: Environmental Pillar: Both companies perform moderately, showing operational efficiency and risk management. Opportunity: strengthen sustainability innovation and green initiatives. **Social Pillar:** Cipla leads with a higher score (82), emphasizing customer trust and stakeholder engagement. Dr. Reddy's also performs well (78), focusing on reputation and competitive advantage. This pillar reflects the social responsibility orientation of both firms. **Governance Pillar:** Dr. Reddy's excels (80), driven by investor confidence and transparent governance. Cipla's governance score (74) indicates solid compliance but less investor focus. This pillar defines corporate accountability and market confidence

Tab: Qualitative Adjustment

Company	Base ESG Score (0–100)	Qualitative Adjustment Factor	Adjusted ESG Score (0–100)	Adjustment Rationale
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Dr.★Reddy's	77	+2 (Innovation emphasis)	79	Gains points for innovation initiatives, R&D focus, and technology integration in sustainability practices.
Cipla	75	+3 (Stakeholder engagement emphasis)	78	Gains points for strong stakeholder engagement, patient-centric programs, and community trust initiatives.

Fig: Qualitative Adjustment



Interpretation: From the above table, it is observed that Dr. Reddy's Laboratories achieved an adjusted ESG score of 79, which is slightly higher than its base score of 77. The increase in score reflects the company's strong emphasis on innovation, research and development, and the use of technology in sustainability practices. Similarly, Cipla attained an adjusted ESG score of 78, improving from its base score of 75. The higher score is mainly due to the company's strong stakeholder engagement, patient-centric initiatives, and community-oriented programs. Overall, both companies demonstrated strong ESG performance, with Dr. Reddy's having a slight advantage over Cipla.

Tab: Descriptive Statistics for Panel Regression Variables (2011–2025)

Variables	No. of Observations	Mean	Median	Minimum	Maximum	Std. Deviation
Return on Assets (ROA) (%)	30	11.68	11.54	8.21	15.43	1.87
Environmental Score	30	69.84	70.00	62.00	77.00	4.26
Social Score	30	77.92	78.00	69.00	85.00	3.91
Governance Score	30	75.74	76.00	68.00	83.00	3.58
ESG Combined Score	30	74.93	75.00	66.00	81.00	4.14

Source: Annual Reports of Dr. Reddy's Laboratories and Cipla Ltd.; Refinitiv Eikon Database (2011–2025)

Interpretation: From the above table, it is depicted that the panel dataset consists of 30 observations covering Dr. Reddy's Laboratories and Cipla Ltd. over the period 2011–2025. The average Return on Assets (ROA) was 11.68%, with values ranging from 8.21% to 15.43%, indicating stable profitability during the study period. The mean Environmental, Social, and Governance scores were 69.84, 77.92, and 75.74, respectively, suggesting that both companies maintained relatively strong ESG performance. Among the three dimensions, the Social Score recorded the highest mean value, indicating greater

emphasis on stakeholder engagement and social responsibility. The moderate standard deviations imply limited fluctuations in ESG performance and financial returns, thereby supporting the suitability of the data for panel regression analysis.

Tab: Panel Structure for ROA Analysis (2011–2025)

Company	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total Observations
Dr. Reddy's Laboratories	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
Cipla Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15

Source: Annual Reports of Dr. Reddy's Laboratories and Cipla Ltd. (2011–2025)

Interpretation: From the above table, it is depicted that the panel dataset consists of 30 observations covering Dr. Reddy's Laboratories and Cipla Ltd. over the period 2011–2025. The average Return on Assets (ROA) was 11.68%, with values ranging from 8.21% to 15.43%, indicating stable profitability during the study period. The mean Environmental, Social, and Governance scores were 69.84, 77.92, and 75.74, respectively, suggesting that both companies maintained relatively strong ESG performance. Among the three dimensions, the Social Score recorded the highest mean value, indicating greater emphasis on stakeholder engagement and social responsibility. The moderate standard deviations imply limited fluctuations in ESG performance and financial returns, thereby supporting the suitability of the data for panel regression analysis.

Conclusions

Demographic based conclusions

1. The study concludes that male respondents constituted a larger proportion of the sample than female respondents. This indicates that male employees are more prominently represented in ESG-related functions in the selected pharmaceutical companies
2. The study concludes that most respondents belonged to the 31–50 years age group. This suggests that ESG activities are primarily managed by experienced middle-aged professionals
3. majority of respondents possessed postgraduate and professional qualifications. This indicates that ESG reporting requires a strong educational and professional background.
4. most respondents occupied middle-level positions such as Senior Executive and Executive/Officer. This signifies the important role played by middle management in implementing ESG practices.
5. respondents mainly belonged to Operations/Production and Research and Development departments. This indicates that ESG reporting and implementation involve substantial participation from operational and research functions

Inferential analysis based conclusions

6. The Cronbach's Alpha value of 0.864 indicates high internal consistency among the fifteen items measuring Perceived Benefits of ESG Reporting. Hence, the scale is reliable and suitable for subsequent statistical analyses.

Factor Analysis

KMO and Bartlett's Test: The KMO value of 0.842 and significant Bartlett's Test ($p < 0.001$) confirm that the sample is adequate and the data are appropriate for factor analysis. Therefore, the variables exhibit sufficient interrelationships for extracting meaningful factors.

Rotated Factor Matrix: Principal Component Analysis extracted three meaningful dimensions, namely Corporate and Financial Benefits, Stakeholder and Market Benefits, and Sustainability and Shareholder Benefits. The factor loadings exceeding 0.60 indicate satisfactory construct validity and strong associations between variables and factors

Correlation Matrix The extracted factors exhibited positive and significant correlations with overall Perceived Benefits of ESG Reporting. Thus, the null hypothesis was rejected, confirming significant relationships among the dimensions of ESG benefits.

7. **Refinitive ESG Data:** Dr. Reddy's Laboratories demonstrated stronger governance practices and investor orientation, whereas Cipla exhibited superior social performance and stakeholder engagement. Both companies showed moderate environmental performance, indicating opportunities for further sustainability initiatives.
8. **ESG Scoring Model:** The ESG scoring model revealed that Dr. Reddy's is predominantly governance-driven and market-oriented, while Cipla is socially driven and patient-centric. Both companies achieved strong overall ESG performance with distinct strategic strengths.
9. **ESG Pillar Mapping:** The pillar mapping analysis showed that both companies performed well across all ESG dimensions. Dr. Reddy's displayed stronger governance capabilities, whereas Cipla achieved better social performance, highlighting different sustainability priorities.
10. **Qualitative Adjustment:** The qualitative adjustment improved the overall ESG scores of both companies by incorporating strategic strengths beyond quantitative measures. Dr. Reddy's benefited from innovation and technological orientation, whereas Cipla gained from strong stakeholder engagement and patient-centric initiatives.
11. **The Descriptive Statistics** reveal that Dr. Reddy's Laboratories and Cipla maintained stable profitability and strong ESG performance during 2011–2025. The Social dimension recorded the highest average score, indicating greater emphasis on stakeholder engagement and social responsibility. Moderate standard deviations suggest consistency and limited variability in both financial and ESG performance over the study period. The balanced panel structure consisting of 30 observations provides a reliable basis for panel regression analysis.
12. **Panel Structure (2011–2025):** The balanced panel consisting of 30 observations from Dr. Reddy's Laboratories and Cipla Ltd. provides a robust framework for panel regression analysis. The combination of cross-sectional and time-series data enhances the reliability and validity of examining the relationship between ESG performance and financial performance.

Scope for further study

13. Future studies may include a larger sample of Indian and multinational pharmaceutical companies to provide broader industry insights and compare ESG practices across firms. Longitudinal studies covering extended time periods may be undertaken to examine the long-term impact of ESG reporting on financial performance and sustainability outcomes. Further research may incorporate additional variables and employ advanced techniques such as Structural Equation Modeling (SEM), Data Envelopment Analysis (DEA), and Artificial Intelligence-based ESG analytics to develop more comprehensive ESG evaluation models.

Implications

14. **Dr. Reddy's Laboratories:** Strong governance practices enhance investor confidence and corporate credibility. Greater emphasis on environmental innovation can improve sustainability performance. Continued investment in technology and transparent reporting can strengthen competitiveness.
15. **Cipla Ltd.:** Strong social orientation enhances stakeholder trust and patient-centric value creation. Improved governance and environmental practices can ensure balanced ESG performance. Enhanced green initiatives and investor communication can increase market value.
16. **Other Stakeholders:** ESG information facilitates informed and sustainable investment decisions. The findings support the need for stronger ESG disclosure frameworks. Effective ESG practices promote employee welfare and organizational commitment. Customers and

Society: Strong ESG performance enhances trust, reputation, and social responsibility. The study provides a basis for future ESG and sustainability research. Integrating ESG practices can promote sustainable growth and competitive advantage.

References

1. Aggarwal, P., Singh, A., & Malhotra, D. (2025). *ESG implementation in Indian NIFTY 500 companies: A comprehensive multi-case analysis of strategy, implementation, and value creation*. *South Asian Journal of Business and Management Cases*, 14(3), 243–260. <https://doi.org/10.1177/22779779251392865>
2. Alkaraan, F., Albitar, K., Hussainey, K., & Venkatesh, V. G. (2022). Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG). *Technological Forecasting and Social Change*, 175, Article 121423. <https://doi.org/10.1016/j.techfore.2021.121423>
3. Bade, M., Olsacher, D., & Boehme, T. (2024). Sustainability maturity and supply chain resilience in pharmaceutical companies. *Corporate Social Responsibility and Environmental Management*. Advance online publication. <https://doi.org/10.1002/csr.2564>
4. Bansal, P., & Song, H. C. (2020). Similar but not the same: Differentiating corporate sustainability from corporate responsibility. *Academy of Management Annals*, 14(1), 1–36. <https://doi.org/10.5465/annals.2018.0090>
5. Buchtele, R., Matoušková, E., & Klärner, P. (2025). ESG in corporate practice: Drivers and barriers for enterprises. *Corporate Governance and Sustainability Review*, 9(1), 8–21.
6. Butolen, S., Vrečko, I., & Palčič, I. (2025). Taxonomy of critical success factors for sustainability strategies. *Sustainability*, 17(12), 5469. <https://doi.org/10.3390/su17125469>
7. Cui, Y. (2025). Digital innovation and ESG performance: Evidence from emerging markets. *Journal of Sustainable Finance and Investment*. Advance online publication.
8. Eccles, R. G., & Klimenko, S. (2020). The investor revolution. *Harvard Business Review*, 98(3), 106–116.
9. Friede, G., Busch, T., & Bassen, A. (2020). ESG and financial performance: Aggregated evidence from more than 2,000 empirical studies. *Journal of Sustainable Finance and Investment*, 10(4), 210–233. <https://doi.org/10.1080/20430795.2020.1718917>
10. Hoang, T. H., Nguyen, P. T., & Tran, M. T. (2026). AI-enabled ESG reporting framework for sustainable corporate governance. *Journal of Business Analytics*. Advance online publication.
11. KPMG. (2023). *ESG reporting and disclosure survey 2023*. KPMG International. <https://home.kpmg>
12. Lozano, R. (2020). Analysing the use of tools, initiatives, and approaches for corporate sustainability. *Corporate Social Responsibility and Environmental Management*, 27(2), 982–998. <https://doi.org/10.1002/csr.1857>
13. Mohanty, A., Priya, V. K., Paithe, U. N., & Mohanty, A. (2025). ‘E’ of environmental, social, and governance (ESG) in India: Reporting, review and future prospects. *Discover Global Society*, 3, Article 136. <https://doi.org/10.1007/s44282-025-00288-0>
14. Riegler, C., & Schmitz, M. (2024). ESG transparency and disclosure quality in pharmaceutical companies. *Management Decision*. Advance online publication.
15. Singh, H., Aggarwal, R., Garg, P., & Aggarwal, D. (2025). AI and ESG performance: An empirical study of the high-tech sector. *Prabandhan: Indian Journal of Management*, 18(6), 8–25. <https://doi.org/10.17010/pijom/2025/v18i6/174487>
16. Singh, P., & Kumar, R. (2026). ESG maturity and sustainability practices in Indian pharmaceutical companies. *RSC Sustainability*. Advance online publication.
17. Souza, A. R., Silva, M. P., & Fernandes, J. C. (2025). Barriers and challenges in the integration of ESG practices: The role of accounting information and accountants. *Journal of Accounting and Organizational Change*. Advance online publication.

18. Wiyono, G., Hidayat, R., & Prasetyo, A. (2025). Governance practices, organizational commitment, and employee performance: A PLS-SEM approach. *International Journal of Organizational Analysis*. Advance online publication.
19. Ahmed, S., & Kumar, R. (2021). Corporate social responsibility and sustainability practices in the pharmaceutical sector: Implications for organizational performance. *Journal of Sustainable Finance and Investment*, 11(4), 325–340.
20. Badulescu, D., Simut, R., Badulescu, A., & Bac, D. (2021). The relationship between environmental, social, and governance performance and financial performance in the pharmaceutical industry. *Sustainability*, 13(12), 6529. <https://doi.org/10.3390/su13126529>
21. Escobar-Anel, M., & Jiao, Z. (2023). ESG performance and corporate financial returns: Evidence from global markets. *Corporate Social Responsibility and Environmental Management*, 30(5), 2415–2430. <https://doi.org/10.1002/csr.2495>
22. GlobalData. (2023). *ESG trends in the pharmaceutical industry: Governance and sustainability insights*. GlobalData Plc.
23. Ledley, F. D., McCoy, S. S., Vaughan, G., & Cleary, E. G. (2020). Profitability of large pharmaceutical companies compared with other large public companies. *JAMA*, 323(9), 834–843. <https://doi.org/10.1001/jama.2020.0442>
24. Mangalagiri, S., Bhasa, M. P., & Parvathi, P. (2026). ESG performance and financial outcomes in pharmaceutical companies: Evidence from emerging markets. *International Journal of Accounting and Information Management*, 34(1), 55–74.
25. Sharma, E., Panday, P., & Dangwal, R. C. (2020). Determinants of environmental, social and corporate governance (ESG) disclosure: Evidence from Indian companies. *Journal of Asia Business Studies*, 14(4), 567–585. <https://doi.org/10.1108/JABS-09-2019-0259>
26. Wu, Y. (2024). Environmental, social, and governance performance and its impact on corporate financial performance and investment decisions. *Sustainability*, 16(2), 781. <https://doi.org/10.3390/su16020781>