

## A COMPARATIVE STUDY OF ENVIRONMENTAL REPORTING AND DISCLOSURE PRACTICES OF STEEL AUTHORITY OF INDIA LIMITED (SAIL) AND TATA STEEL LIMITED

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### ABSTRACT:

*This study conducts a comparative analysis of the environmental reporting and disclosure practices of two prominent Indian steel companies—Tata Steel Limited and Steel Authority of India Limited (SAIL). The primary objective is to evaluate the extent, quality, and consistency of their environmental disclosures and assess their adherence to global standards of sustainability. The study relies on secondary data collected from the companies' annual reports, sustainability reports, and publicly accessible disclosures for the financial years 2021–22, 2022–23, and 2023–24. Using a comparative and analytical research design, the data is analysed through content analysis and statistical tools, including the t-test, to measure the significance of differences in their reporting practices. Key environmental parameters such as waste management, emission levels, conservation efforts, and compliance with international certifications like ISO 14001 are examined. The findings indicate that both companies demonstrate a strong commitment to environmental accountability, with Tata Steel showing marginally better and more consistent disclosure rates compared to SAIL. Despite their progress, the study identifies a need for more standardised and transparent reporting frameworks to enhance stakeholder trust and promote sustainable practices across the industry. The results provide valuable insights for policymakers, investors, and corporate entities striving for responsible environmental management.*

**KEYWORDS:** *Environment, Disclosures, Companies, Sail, Tata, etc.*

### 1. INTRODUCTION:

The main task for humanity's future is environmental protection. It outlines the proper way to safeguard ecosystems, air quality, the sustainability and integrity of our resources, and the factors that put the environment under stress. A nation's economic progress and prosperity are significantly influenced by industrialisation. While it generates income and job possibilities, it also degrades the environment in a number of ways, including loss of natural resources, pollution of the air, water, and soil, global warming, and climate change.

Companies are subject to regulations in order to control pollution and adhere to their own carbon emissions standards. Depending on societal expectations and views, pressures on businesses to minimise pollution have changed over time. With the separate release of "ECO-Action 21" (Environmental Activity Evaluation Program) by the Indian Ministry of Environment, small businesses can now more easily design and run environmental management programs, conduct conservation efforts, and publish environmental reporting. As communication technology advances, environmental awareness among Indian stakeholders increases. Stakeholders are aware of the negative environmental effects of industrial operations. A more cautious approach to environmental responsibility is ensured by the great inclination of Indian firms to be concerned about the environment. It is imperative that our society establish a social framework that allows economic entities to logically assess the beneficial business activities that provide financial advantages to environmentally conscious companies. Disclosure of environmental information must not reduce the value of environmental reporting. Users' information needs must be satisfied with

guaranteed quality and comparability to earlier eras and other businesses. As a result, businesses in the current environment must publish more details about their environmental protection practices.

## **2. ENVIRONMENTAL REPORTING:**

Environmental reporting, which is an essential component of Corporate Social Responsibility (CSR), includes revealing how an organisation affects biodiversity, the environment, the air, water, and non-renewable resources. The European Federation of Accountants defines environmental performance, and it seeks to give stakeholders insights into it using guidelines like GAAP. CSR is defined as the voluntary incorporation of social and environmental issues into company operations by the European Commission. In order to evaluate environmental performance and improve stakeholder knowledge, environmental reporting, a crucial part of sustainability reporting, focuses on creating strong frameworks and indicators.

## **3. ENVIRONMENTAL REPORTING IN INDIA:**

India's natural resource assets are rapidly decreasing as a result of economic development and population growth. Regulations for sustainability reporting are lacking, even though some large transportation, IT, and petroleum businesses voluntarily report their social and environmental performance. To promote sustainability practices in the nation, a study on environmental reporting in a few public and private companies would assist in evaluating its efficacy and indicate areas for development.

## **4. REVIEW OF LITERATURE:**

A literature review is a thorough summary of earlier studies on a topic. Scholarly books, papers, and other sources relevant to particular areas of study are examined in the literature review. Here are some instances of review literature:

- 1) **(Das, Das, Singh, & Ruidas, 2024)** The goal of the study paper Environmental Accounting Practices and Their Impact in India is to enumerate and evaluate the different environmental accounting methods and systems that are employed in India. Both conventional cost-based approaches and more sophisticated strategies like life cycle assessment and carbon accounting were used in the study. The study concluded that our understanding of environmental accounting practices and how they promote environmentally responsible business practices and decision-making in India will determine the outcome.
- 2) **(Venugopal, Hussain, Ul Oman, & Chattopadhyay, 2024)** The study looks at green accounting techniques in Indian businesses, concentrating on adoption rates, perceived advantages, difficulties, and effects on financial and environmental performance. The Energy Sector had the highest adoption rate, according to a survey of 150 companies from various industries. Lack of experience and hefty implementation costs are obstacles.
- 3) **(Chaithanya & H, 2024)** The study's goal was to navigate green accounting's environmental responsibility in the Indian context. The purpose of the study is to determine how well-informed top accounting professionals are about green accounting. The demographic sample for the study consisted of one hundred working professionals. To choose its participants, the study used a stratified random sampling technique. Since it might not be feasible to combine all ecological data with the current bookkeeping system at a small scale, the study's conclusion regarding financial worth is based on its inability to compute natural liabilities and resources.
- 4) **(Bhattacharya & Bhattacharya, 2023)** The study looked at how the ESG pillars affected the business models of biopharmaceutical businesses and how they related to innovation. In order to comprehend sustainable business concepts, it employed the Analytical Hierarchy. The results indicate that society, the main customer of biopharma products and services, benefits from industry-level business model innovation.
- 5) **(Mulchandani, Mulchandani, & Vishnani, 2023)** The study used data from India and the effects of COVID-19 to examine how ESG reporting impacted profitability. The research was persistent in its investigation of the impact of ESG reporting on profits quality. The research was based entirely on secondary data. The sample size for the study consisted of three hundred companies listed on the Nifty 50. The study was conducted from 2015 to 2020. Regression analysis was used to analyse the data. According to the research's conclusions, ESG has minimal impact on the quality of discretionary earnings. The fiscal year that concluded when the epidemic hit the market also saw improvements in ESG and earnings quality.

## **5. RESEARCH GAP:**

Despite the increasing importance of environmental reporting in corporate sustainability, there is a lack of research comparing Indian steel companies. Indian industry analysis is usually neglected in favour of focusing on specific businesses or international circumstances. The environmental disclosure policies of Tata Steel Limited and Steel Authority of India Limited (SAIL), two major industry participants, have not been thoroughly compared. Furthermore, present research usually prioritises financial performance over environmental disclosure and stakeholder benefit. This study closes these gaps by analysing and comparing the environmental reporting practices of SAIL and Tata Steel, assessing their quality, consistency, and accordance to global standards.

## **6. STATEMENT OF THE PROBLEM:**

Environmental reporting and disclosure is becoming a critical component of corporate responsibilities due to the growing significance of environmental sustainability. The purpose of this study is to examine the environmental reporting and disclosure policies of Tata Steel Limited and Steel Authority of India Limited (SAIL), two major participants in the Indian steel sector. It aims to assess their dedication to sustainable practices, determine the scope, calibre, and transparency of their environmental disclosures, and understand how these practices affect stakeholders' opinions and decision-making.

## **7. OBJECTIVES OF THE STUDY:**

The objectives of the study always decide a proper track to carry out the desired research activities. The following are the objectives of the study:

- 1) To examine the environmental reporting and disclosure practices prevailing in selected public and private sector companies India.
- 2) To evaluate the state of compliances of key environmental disclosure parameters in selected companies.
- 3) To compare the environmental reporting and disclosure practices in public and private sector companies listed in Stock Exchange.

## **8. SCOPE OF THE STUDY:**

The primary goal of this study is to compare Tata Steel Limited's and Steel Authority of India Limited's (SAIL) environmental reporting and disclosure policies. It highlights their dedication to sustainable growth by analysing the scope, calibre, and transparency of their environmental disclosures. The survey also assesses how these businesses follow environmental laws and implement eco-friendly procedures, offering information on industry norms and potential areas for development.

## **9. SIGNIFICANCE OF THE STUDY:**

The purpose of this study is to examine the environmental reporting and disclosure policies of Tata Steel Limited and Steel Authority of India Limited (SAIL), two major participants in the Indian steel sector. It draws attention to the ways in which major businesses report on environmental issues, encouraging responsibility and openness. The results will promote well-informed decision-making for sustainable development and assist stakeholders, investors, and legislators in evaluating the efficacy of company environmental initiatives.

## **10. RESEARCH METHODOLOGY:**

### **10.1 Research Design:**

Tata Steel Limited and Steel Authority of India Limited's (SAIL) environmental reporting and disclosure policies are examined in this study using a comparative and analytical research design. During a specific period of time, the study will rely on secondary data collected from both companies' annual reports, sustainability reports, and other publicly accessible disclosures. Using content analysis, the amount, calibre, and openness of environmental information will be evaluated. A comparison of important indicators will be made, including environmental policies, initiatives, compliance, and performance metrics. In order to improve environmental accountability in the Indian steel industry, the study intends to identify best practices, gaps, and suggestions.

### 10.2 Sample Size:

The researcher chose a total of two (02) Indian organisations in order to evaluate the efficiency of the entity and the procedure for corporate environmental reporting and disclosure procedures used by Indian corporations in terms of the content and quality disclosed in annual reports. One Public Sector Company and one private sector company, respectively. Below is a list of the chosen companies:

Sr. No.	PUBLIC SECTOR COMPANY	PRIVATE SECTOR COMPANY
1.	Steel Authority of India Limited (SAIL)	Tata Steel Limited.

### 10.3 Justification for Selection of Sample:

- 1) These companies are listed in Bombay stock exchange (BSE) and National Stock Exchange (NSE)
- 2) Good Credit rating given by the rating Agencies like CRISIL, ICRA.

### 10.4 Sampling Method:

Convenience and judgment sampling method were used for selection of sample.

### 10.5 Data Collection:

The study is based on secondary information and data were collected from the annual reports of Selected Companies, internet, journals, magazines, newspapers and books etc.

### 10.6 Period of the Study:

The Environmental reporting and disclosure practices of the selected companies will be examined for the last three financial years i.e. from 2021-22, 2022-23 and 2023-24.

### 10.7 Tools of Analysis:

The study employs the t- Test to analyse and prioritise factors influencing Environmental Reporting Disclosure Practices in Indian companies.

### 10.8 Hypothesis:

$H_0$  – There is no significance difference between the environmental reporting and disclosure practices between selected public and private sector companies in India.

$H_1$  – There is significance difference between the environmental reporting and disclosure practices between selected Public and private sector companies in India.

## 11. KEY AREAS, PARAMETERS AND THEIR MEASUREMENT:

This study evaluates the nature and reputation of environmental accounting and reporting practices in India by identifying key areas and developing a composite Environmental Disclosure Index (EDI). The following key areas are selected for the study.

S.No.	Environmental Disclosure Index
1	Environmental Goal
2	Environmental Policy
3	Environmental Vision and Mission
4	Environmental Target
5	Environmental Action Plan
6	Global Warming and Environmental Hazards
7	Waste Management
8	Environmental Audit
9	Research and Development
10	Training and Education
11	ISO 14001
12	Conservation Campaign
13	Cleaner Production

14	Life Cycle Assessment
15	Occupational Safety and Hazards
16	Use and Conservation of Natural Resource
17	Emission level of Greenhouse gases, Water discharge, Solid waste disposal etc.
18	Environmental Awards and Achievements
19	Environmental conservation/prevention of ecology and community development
20	Green Building Movement

**12. ITEM-WISE DISCLOSURE BY SELECTED COMPANIES DURING THE YEAR 2021-22, 2022-23 AND 2023-24.**

S. No.	Environmental Reporting Index	Steel Authority of India Limited (SAIL)			Tata Steel Limited		
		2021	2022	2023	2021	2022	2023
1	Environmental Goal	√	√	√	√	√	√
2	Environmental Policy	√	√	√	√	√	√
3	Environmental Vision and Mission	√	√	√	√	√	√
4	Environmental Target	√	√	√	√	√	√
5	Environmental Action Plan	√	√	√	√	√	√
6	Global Warming and Environmental Hazards	√	√	√	√	√	√
7	Waste Management	√	√	√	√	√	√
8	Environmental Audit	√	√	√	√	√	√
9	Research and Development	√	√	√	√	√	√
10	Training and Education	√	√	√	√	√	√
11	ISO 14001	√	√	√	√	√	√
12	Conservation Campaign	√	√	√	√	√	√
13	Cleaner Production	√	√	√	√	√	√
14	Life Cycle Assessment			√	√	√	√
15	Occupational Safety and Hazards	√	√	√	√	√	√
16	Use and Conservation of Natural Resource	√	√	√	√	√	√
17	Emission level of Greenhouse gases, Water discharge, Solid waste disposal etc.	√	√	√	√	√	√
18	Environmental Awards and Achievements	√	√	√	√	√	√
19	Environmental conservation/prevention of ecology and community development	√	√	√		√	√
20	Green Building Movement	√	√	√	√	√	√
Total Items disclosed by the selected		19	19	20	19	20	20
% age of Total Items disclosed		95	95	100	95	100	100
Mean Value		96.67%			98.33%		

(Sources: Annual Reports)

**12.1 INTERPRETATION:**

Tata Steel Limited and Steel Authority of India Limited (SAIL) demonstrate a significant commitment to sustainability through their environmental reporting standards. The majority of environmental items were continuously disclosed by both companies during 2021–2022 and 2023–2024. With a mean disclosure percentage



of 96.67%, SAIL's disclosure rate increased from 95% in 2021–2022 and 2022–2023 to 100% in 2023–2024. With a higher mean value of 98.33% and a 100% disclosure rate over the previous two years, Tata Steel did marginally better. This suggests that, in comparison to SAIL, Tata Steel takes a more thorough and uniform approach to environmental accountability and transparency.

#### 12.2 SUMMARIZED TABLE:

S. No.	Environmental Reporting Index	Steel Authority of India Limited (SAIL)	Tata Steel Limited
1	Environmental Goal	100%	100%
2	Environmental Policy	100%	100%
3	Environmental Vision and Mission	100%	100%
4	Environmental Target	100%	100%
5	Environmental Action Plan	100%	100%
6	Global Warming and Environmental Hazards	100%	100%
7	Waste Management	100%	100%
8	Environmental Audit	100%	100%
9	Research and Development	100%	100%
10	Training and Education	100%	100%
11	ISO 14001	100%	100%
12	Conservation Campaign	100%	100%
13	Cleaner Production	100%	100%
14	Life Cycle Assessment	33.33%	100%
15	Occupational Safety and Hazards	100%	100%
16	Use and Conservation of Natural Resource	100%	100%
17	Emission level of Greenhouse gases, Water discharge, Solid waste disposal etc.	100%	100%
18	Environmental Awards and Achievements	100%	100%
19	Environmental conservation/prevention of ecology and community development	100%	66.67%
20	Green Building Movement	100%	100%

(Sources: Annual Reports)

#### 13. t-TEST: TWO-SAMPLE ASSUMING EQUAL VARIANCES:

	Variable 1	Variable 2
Mean	0.966665	0.983335
Variance	0.02222444	0.005554445
Observations	20	20
Pooled Variance	0.01388944	
Hypothesized Mean Difference	0	For testing hypothesis,
df	38	p value ( <b>0.657</b> ) is more
t Stat	<b>-0.4472941</b>	Than <b>0.05</b> . Hence,
P(T<=t) one-tail	0.32860103	Null hypothesis has
t Critical one-tail	1.68595446	been Accepted at
P(T<=t) two-tail	<b>0.65720207</b>	<b>5%</b> level of significance.
t Critical two-tail	<b>2.02439416</b>	

#### 14. FINDING:

- 1) **No Significant Difference:** There is not a significant variance between SAIL and Tata Steel's environmental reporting, according to the t-test results, which support the null hypothesis.
- 2) **Standard Compliance:** Both companies operate with environmental regulations at the national and international levels.
- 3) **Consistent Disclosure:** They provide regular updates on sustainability, waste management, and emissions.
- 4) **Comparable Transparency:** There is no statistically significant difference in the level of reporting.
- 5) **Clear Communication:** Both guarantee that there is enough information for accountability and stakeholder awareness.

#### 15. LIMITATIONS OF THE STUDY:

- 1) **Limited Scope:** Because the study only looks at SAIL and Tata Steel, it might not accurately reflect the environmental reporting procedures of the whole Indian steel sector.
- 2) **Data Dependency:** The study makes use of secondary data that is accessible to the general public, which might not necessarily represent the most up-to-date and comprehensive environmental performance.
- 3) **Comparability Challenges:** Inconsistencies in the comparison of environmental disclosures may arise from variations in corporate size, operational scale, and reporting requirements.

#### 16. SUGGESTIONS:

- 1) Use international frameworks for transparent and standardised environmental reporting, such as GRI.
- 2) To improve stakeholder understanding, reveal accurate, data-driven environmental performance measures.
- 3) To present a comprehensive picture of corporate sustainability, combine financial and ESG reporting.
- 4) Make green innovation investments and draw attention to sustainable development projects.
- 5) Make sure third parties conduct audits to ensure that environmental disclosures are reliable, authentic, and trustworthy.

#### 17. CONCLUSION:

Environmental responsibility is becoming increasingly important in the Indian steel sector, as seen by the comparison of Tata Steel Limited's and Steel Authority of India Limited's (SAIL) environmental reporting and disclosure standards. Although both businesses show that they are working to be more sustainable, Tata Steel stands out for making more thorough and open environmental disclosures that are in line with international norms. Even while SAIL is making strides, there is still room for improvement in the breadth and regularity of its reporting procedures. Standardised environmental reporting systems are necessary to boost stakeholder knowledge and investor trust, which will ultimately encourage ethical business practices, according to this study.

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