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## **Analysis of the Extent of Corporate Environmental Sustainability Disclosure in India**

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### **ABSTRACT**

The present study's goal was to identify measures and solutions in light of environmental information in corporate sustainability reporting practices in India. For this purpose, corporate sustainability report of 15 Indian Companies for the periods 2016-17 to 2019-2020 were checked and examined. 15 sample companies were selected following “Core & speaker; and Comprehensive Status” from the all-encompassing table of GRI as a pilot study. Based on disclosure check list of 32 environmental aspect parameter of GRI Standards 2016 and unweighted announcement index, the present study measures the consideration of GRI Standards revelation two together at the aggregate level and in respect of environment category of GRI standard. The result shows that in consideration of overall environment GRI Standard disclosures varies from 15.63% to 93.75%. The minimum revelation score of 15.63% is immeasurable. But the maximum announcement score is 93.75%. A mean disclosure score of 67.92% displays a comparatively moderate level of announcement. The study discloses a roomy alternative in consideration of environmental disclosure with range and standard deviation 78.13% and 22.66% respectively. On studies of research findings, the researcher concludes that there exists scope for improvement of environmental aspect reporting by Indian companies.

**Key Words:** GRI Standards Disclosure, Corporate Sustainability Reports, Annual reports, GRI Global Database, Environment.

Since the 1970s, the concept of sustainability has been more broadly linked to the sustainability of humans on Earth, resulting in the most commonly cited definitions of sustainability and sustainable development. The United Nations World Commission on Environment and Development<sup>1</sup> defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet theirs”. The definition of sustainable development involves three interdependent objectives: environmental, economic and social.<sup>2</sup> Since 1987, there has been a marked increase in the integration of sustainable development concepts into all disciplines. This phenomenon is evidenced by the increase in the number of articles on sustainable development and the number of journals dedicated to environmental engineering.<sup>3</sup>

Researchers from various fields contributed their empirical research to better understand the use of materials and technologies, green engineering/manufacturing and pollution control. Prevention, energy management and research on water resources. This study aims to provide a comprehensive assessment of environmental sustainability research based on historical analysis from Indian context.

### **1. Review of Literature**

A good number of studies on Sustainability reporting with reference to GRI in foreign countries have been found in the last decade which includes Tanimoto & Suzuki 2005 based on only indicator namely environment, Ho & Taylor 2007, Staksson and Steimle, 2009; Cardoso et al., 2014; Stoma et al., 2017; Orazalin and Mahmood, 2019; Waiznaik and Pactwa, 2019; Putri et al., 2020 based on three indicators namely economic, environment & social aspect, Setyorini and Ishak, 2012 based on two indicators namely social and environmental aspects.

#### **i) Orazalin, N and Mahmood, M (2019)**

They attempted to investigate the extent and determinants of sustainability performance disclosures. The study analyzes data from publicly traded companies at the Kazakhstani Stock Exchange for the

years 2013–2015. To investigate the extent, nature and quality of sustainability reports, the study measures and analyzes economic, environmental and social performance parameters, as suggested in the GRI guidelines. They considered 146 firms under energy, manufacturing and service companies in their study. Data were collected from sustainability performance from CSR reports and annual reports available on the webpage of the Kazakhstani Stock Exchange and company websites. These reports are used to assess and measure individual dimensions of sustainability performance and construct individual sub index scores and a composite SR index. They obtained financial data from audited financial statements available on the webpage of the Kazakhstani Stock Exchange. The researchers constructed individual dimensions of SR based on a dichotomous approach assigning a value of 1 if corresponding information is reported and 0 otherwise. In particular, we calculate sub-indices for economic (ECON), environmental (ENVI) and social (SOC) indicators of sustainability through the application of the globally recognized GRI guidelines and standards. Agency theory, legitimacy theory and signaling theory were used for explaining theoretical framework. They took impact on Sustainability Reporting in percentage as dependent variable while the independent variables were stand-alone reporting, reporting language, leverage, financial capacity, return on equity, firm age, firm size and auditor type. The descriptive statistics on SR practices of Kazakhstani companies by industry. The study showed that the energy industry represents 18.87 percent of the sampled companies, followed by the manufacturing industry at 43.40 percent then by service companies at 37.73 percent. The results for stand-alone reporting and reporting language variables indicate that 50 percent of the energy companies disclose their sustainability information in English and only 5 percent of service companies issue stand-alone reports. The results for ENVI show that the energy industry has a mean value of 9.62 percent, followed by manufacturing companies at 9.49 percent and services companies at 6.67 percent. The results also reveal that manufacturing companies have the highest mean values of 25 percent for economic performance and 10.64 percent for social performance indicators. Descriptive statistics, correlation coefficient and OLS regression estimate were used in the study. The average SR index is 9.88 percent and varies between 1.27 and 51.89 percent, with a standard deviation of 9.40 percent. The results indicate that determinants such as stand-alone reporting, reporting language, firm profitability, firm size and auditor type substantially influence the extent, nature and quality of sustainability-reporting practices of Kazakhstani companies. They concluded that values of individual dimensions of SR and a composite SR index indicate that SR practices of the top companies in Kazakhstan are at an early stage of development.

**ii) Woźniak, J and Pactwa, K (2019)**

They tried to analyse the impact of socio-economical activities within the enterprise and to analyse the compliance of disclosure. They had taken only 3 Poland companies namely Cemex, Góraźdże Heidelberg Cement Group and Lafarge for their study. They used non-financial data collected from integrated reporting of selected companies of rock raw materials industry with a check list of 43 information items from environment and social aspects. They conducted content analysis. They analyzed the social and environmental policy of mining entrepreneurs exploiting rock raw materials. The study entailed that social aspects expressed in the international GRI standard showed that Heidelberg holds the lead (16), then Cemex (13 with the proposition of 2 own indicators) and Lafarge (8 + 4 own). In terms of the environmental dimension, Góraźdże Heidelbergcement again registered (16) and Cemex (9) along with 2 individual indicators. In turn, Lafarge includes 8 indicators of which 4 were from their own suggestion. There is a tendency to introduce own indicators, closely related to the scope of business activity to present achievements better in the field of disclosing non-financial data that fall within the scope of CSR activities. The study does not include external stakeholders.

**iii)Putri et. al, (2020)**

They attempted to investigate the dominant indicators in each industry classification based on sustainability reports. Data were collected from 28 listed Indonesian GRI G4-based company sustainability reports in 2016 and 2017 with a checklist of 91 indicators from economic, environmental and social impacts in GRI G4 for the purpose of study. The analytical method was used in the study with the K-means clustering analysis. Stakeholder theory and legitimacy theory was

used in explaining theoretical framework. There are 6 (six) variables identified by the researchers as company KPIs in disclosure of environmental impacts, with statements on a scale where 0 = there is absolutely no disclosure in the GRI G4 indicator, 1 = disclosure in the GRI G4 indicator included in each variable, the company is perceived as having a challenge and 2 = if the company feels it finds benefits in conducting or disclosing the GRI G4 indicator. They used ANOVA & descriptive quantitative analysis in their research. Using an ANOVA/F-test, objects were systematically entered in the clusters to maximize the differences in clustering of each indicator. The greater the value of F and ( $\text{sig} < 0.05$ ), the greater the difference in indicators on the cluster formed. The data were obtained and processed to carry out the tests on the problem using the cluster analysis methods, namely non-hierarchical procedures or K-means clustering. Based on the conducted study, it can be concluded that there are differences in the quality of disclosure on each GRI G4 indicator in the sustainability reports of companies listed on the IDX in 2016–2017 in each industry characteristic; the difference in indicators is 66 out of 91 indicators.

The dominant indicator expressed in the financial industry is an economic indicator. In the mining, transportation and infrastructure industries, various industries, and basic and chemical industries, the dominant indicators to be disclosed are environmental indicators. This was understandable, considering that the financial industry was being very focused on economic interests (e.g., Iman, 2018), while other industries are more closely related to environmental factors.

#### **iv) Cardoso et. al, (2014)**

They attempted to investigate the disclosure practices from a sustainability point of view in Brazilian companies. Disclosure index was verified by taking into consideration the nature of company activities in relation to their potential for environmental impact, according to disposition by law number 10.165/2000. They had taken 33 companies from 13 sectors and selected one year 2009–2010 for the study. They took GRI indicators as dependent variable. Descriptive statistics along with qualitative research was conducted using content analysis in their research study. Legitimacy theory was used in theoretical framework. They concluded that high level of disclosure had great potential for pollution and improvement of people's lives i.e. environmental and social indicators were significant. In relation to injuries, occupational diseases, lost days, absenteeism and deaths, they found that companies do not usually promote discussions about the appropriate measures to reduce such occurrences, limiting themselves to presenting the corresponding rates, in numerical form, without additional comments. Nevertheless, information related to training was always well emphasized, in a discursive way, not limited to showing the amount of hours spent on training and development.

#### **v) Kaur, D & Das, N (2015)**

They attempted to examine and compare the level of sustainability reporting of mining companies. They had taken 53 private companies and 47 public companies for their research. They took impact of sustainability reporting as dependent variable. They used for 5 years accounting period 2007 to 2012 in their research. Data were collected from top 100 Indian mining companies as per Net Sales are taken from Indian corporate Database "capital line" of capital market, annual Reports, Websites and sustainability reports published by the selected companies. They conducted content analysis and independent t-test in their study with the help of 84 information items from economic, environment and social aspects. Disclosure index was computed with maximum score of 2 each (as 2 for full disclosure: - if information completely disclosed as per GRI guidelines, 1 for partial disclosure: if information is disclosed but not disclosed completely as per GRI guidelines and 0 for no disclosure) making total possible score. The sustainability disclosure score of the items in case of private mining companies varies from 82 to 0 while the sustainability disclosure score of the items in case of public mining companies varies from 48 to 0. Only 23 public mining companies disclosed information on the non-financial aspects. The volume of disclosure varies from neutral followed by partial and then full information. It observed that in public companies also disclosure is below 50% but the numbers of companies are more as compared to private mining companies. The Study revealed that there is high variation in the disclosure practices of the Indian private ( $t=-15.424$ ) and public ( $t=-9.629$ ) sector

mining companies as value of t-test was less than 0.05. The study also revealed that there is significant difference between the mean scores of public and private sectors mining companies p value is greater than the 0.05 depicts that there is significance difference in the disclosure practices of public and private sector. From the study it was clear that the mean of public sector Indian mining companies that is 7.70 which was more than private mining sector companies which had a mean score of 3.38. It signifies that sustainability disclosure by public companies was more than private sector mining companies. They concluded that Sustainability reporting disclosure practices were more in public sector as compared to the private sector mining companies but in context of content quality private mining companies disclosed limited but relevant information on sustainability disclosure as per GRI.

**vi) Dutta et. al, (2011)**

They attempted to examine the applicability of the concept of TBLR with GRI, to examine the extent of Corporate Social Responsibility disclosure by the Companies under GRI, to examine the present status of sustainable based reporting status as per Karmayog and to make comparative Study of GRI based companies under Karmayog CSR activities. They had taken 19 companies in his study using random sampling method. Time covered in this study was only 2010. They consider three parameters namely people, environment and profit. They conducted content analysis. He concluded that how the TBLR implementation had taken place in India with special reference GRI initiative as well as Karmayog.

Based on above review of literature study, the research gap was found regarding the number of study on corporate disclosure of environmental information is very limited in Indian context:

## 2. Objectives of the Study

Based on the research gaps identified, the objective of the research is to empirically measure and analyse the extent of Corporate Sustainability Reporting in India based on GRI Standards on environmental aspect.

In this context, the present study aims to measure and analyse the extent of sustainability disclosure by corporate entities in India both at aggregate level as well as in respect of environmental category GRI Standards.

## 3. Research Methodology

In order to examine the environmental aspect based on GRI Standards, the present study has used sustainability written reports of 15 sample companies. The sustainability written reports of all 15 selected companies for the years 2016-2017 to 2019-2020 have been downloaded from the companies' websites. In the next step, an environmental sector revealing checklist of 32 information items was prepared based on GRI Content Index in Indian context. After finalizing the revealing checklist, sustainability written report of each of the sample company was exhaustively examined. A score one( ' 1 ') was awarded to the concerned party if an information item contained in our checklist was disclosed anyplace in its sustainability written report. If an information item was found to remain unrevealed in the one-year written report, a score zero ("0") was awarded. When awarding of scores for all information items was over, overall revealing of sustainability information based on environmental aspect of each company was measured by an indicant of revealing, called Total Environmental Disclosure Index( TEDI). This indicant is calculated by the proportion of total score obtained by the company to the maximum score come-at-able by the party

*Total Environmental Disclosure Index*

$$= \frac{\text{Total score obtained by the company in respect of environment aspect}}{\text{Maximum Score attainable by the company}}$$

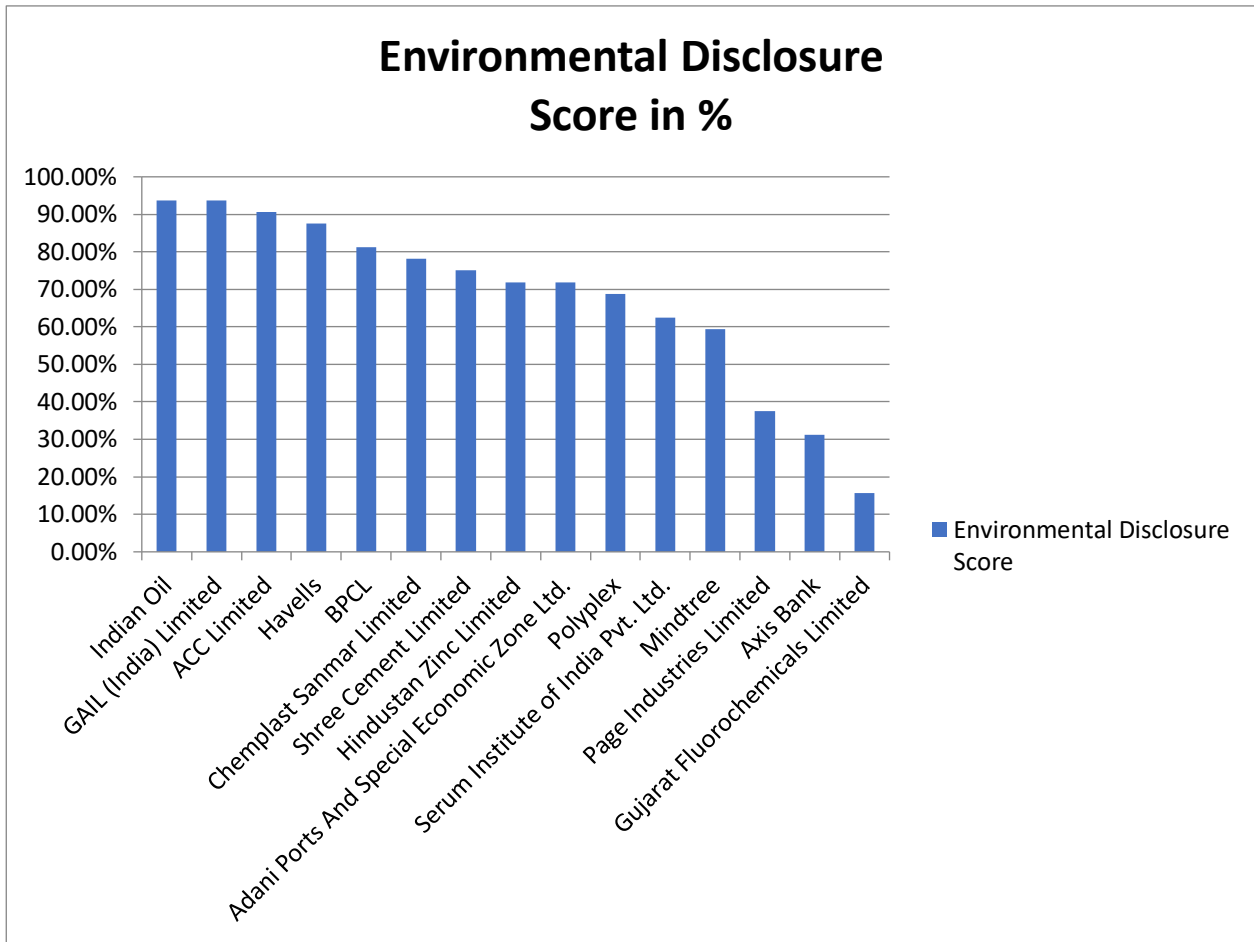
#### 4. Empirical results relating to the Extent of Environmental Disclosure

Environmental GRI disclosure score of all 15 sample companies is reported in the Table 1 and presented in Chart 1.

**Table 1 Environmental Disclosure Score of Sample Companies (in Descending Order)**

Sl. No	Name of the organization	Company Code	Environmental Disclosure Score
1	Indian Oil	C 10	93.75%
2	GAIL (India) Limited	C 6	93.75%
3	ACC Limited	C 1	90.63%
4	Havells	C 8	87.50%
5	BPCL	C 4	81.25%
6	Chemplast Sanmar Limited	C 5	78.13%
7	Shree Cement Limited	C 15	75.00%
8	Hindustan Zinc Limited	C 9	71.88%
9	Adani Ports And Special Economic Zone Ltd.	C 2	71.88%
10	Polyplex	C 13	68.75%
11	Serum Institute of India Pvt. Ltd.	C 14	62.50%
12	Mind tree	C 11	59.38%
13	Page Industries Limited	C 12	37.50%
14	Axis Bank	C 3	31.25%
15	Gujarat Fluor chemicals Limited	C 7	15.63%





### 5. Analysis of the Extent relating to the Disclosure score in Environmental Category of Information

With a view to making analysis, the overall GRI Standards disclosure scores have been classified into different groups. Such classification has been presented in Table 2

**Table 2 Frequency Distribution of Environmental GRI Standards Disclosure Score**

Disclosure Scores	Sample Companies		Cumulative Sample Companies			
	Number	%	More than Type		Less than Type	
			Number	%	Number	%
Col. (1)	Col. (2)	Col. (3)	Col. (4)	Col.(5)	Col.(6)	Col.(7)
Above 90%	3	20%	3	20%	12	80%
80% - 90%	2	13%	5	33%	10	67%
70% - 80%	4	27%	9	60%	6	40%
60% - 70%	2	13%	11	73%	4	27%
50% - 60%	1	7%	12	80%	3	20%
40% - 50%	0	0%	12	80%	3	20%

30%-40%	2	13%	14	93%	1	7%
20% - 30%	0	0%	14	93%	1	7%
10% - 20%	1	7%	15	100%	0	0%
	<b>15</b>	<b>100%</b>				

Source: Computed from Total Environmental Disclosure Score Presented in Table 1

The information presented in Table 2 reveals the following:

- i) The maximum number of companies (4) representing 27% of sample companies have extent of environmental disclosure between 70% - 80%.
- ii) 60% companies have disclosed more than 70% GRI standards information.
- iii) Only 3 companies have social disclosure score exceeding 90%.
- iv) No company has disclosed below 10%.

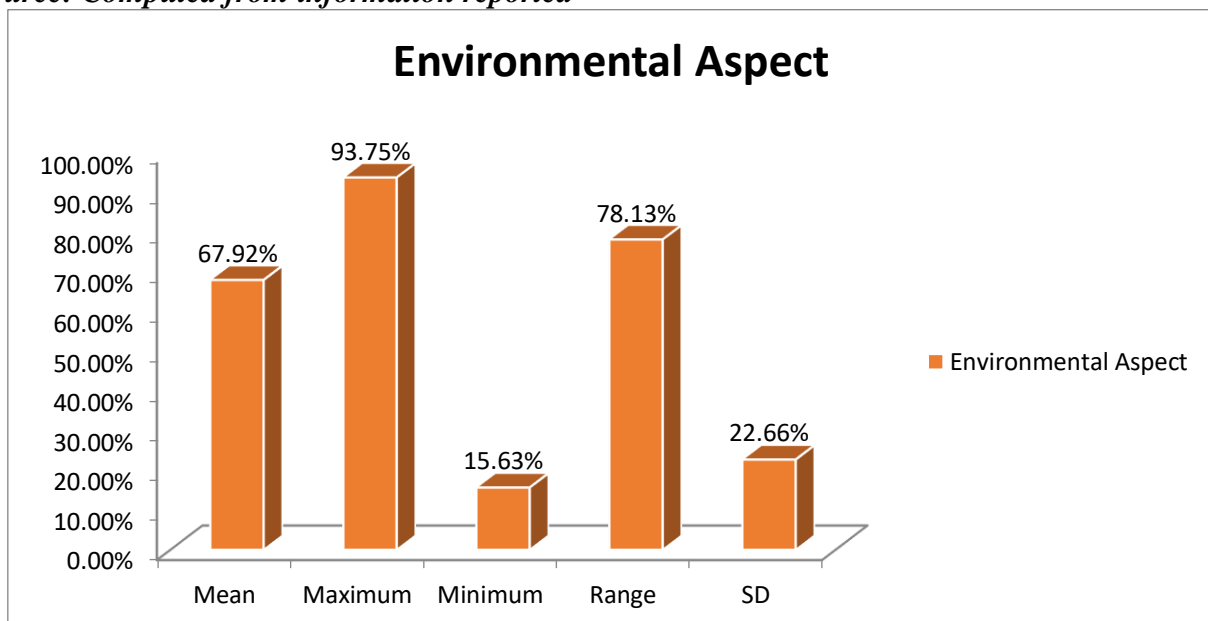
### 6. Analyses of the Extent of Disclosure in Environmental Category of GRI Standards Information

For making further analysis, some descriptive statistics have been calculated using the overall GRI Environmental Standards disclosure scores which are presented in Chart 2 and Table 3

**Table 3 Table showing descriptive statistics of Environmental Information**

Information	Environmental Aspect
Sample Information	32
Sample Size	15
Mean	67.92%
Maximum	93.75%
Minimum	15.63%
Range	78.13%
SD	22.66%

Source: Computed from information reported



From the information presented in Table 3, we have the following important observations in respect of overall environmental disclosure reporting by our sample companies

- (i) Extent of GRI standards disclosures varies from 15.63% to 93.75% yielding a range of 78.13%.
- (ii) Mean Disclosure of 67.92% indicates that average level of GRI standards environmental information disclosure is moderate.
- (iii) Minimum disclosure of 15.63% is very low.
- (iv) Maximum disclosure is 93.75%. However, it reveals that none of the companies in our sample has disclosed all the 32 GRI standards information items examined in our study.
- (v) A wide variation is observed in the extent of overall GRI Standards disclosure which is evident from range of 78.13% and standard deviation of 22.66%.

## 7. Conclusion

The study shows the evidences of low to high level of environmental disclosure by sample firms. Analyses of the extent of environmental disclosure namely water consumption (GRI 303.5), biodiversity (GRI 304) and Negative environmental impacts in the supply chain and actions taken (GRI 308.2) have not been reported by our sample companies. Moreover, wide variations have been observed in the extent of overall environmental disclosure. The result suggests that there is scope for improvement in environmental reporting by companies in India

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