

ENVIRONMENTAL DISCLOSURE PRACTICES IN INDIAN COMPANIES (WITH SPECIAL REFERENCE TO BUSINESS RESPONSIBILITY REPORT)*

BY

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ABSTRACT

Environment Reporting is the disclosure of information by Corporate Sectors for protecting and managing our environment. Environment Reporting has major importance in developed countries & it is also getting attention in Developing Countries because of frequent climatic disasters. The pressure from Government, Stakeholders & Funding agencies influence the corporate sector to disclose the environment information. In India, Business Responsibility Report (BRR) is an Environment Reporting practice developed by SEBI for the Indian listed companies. The objective of this study is to examine the environmental disclosure practices of Indian listed company as per Principle 6 of BRR and develop a Weighted Disclosure Index to know the extent of disclosure made by companies. A sample of 70 NSE listed companies based on the market capitalisation for the financial year 2019-2020 are selected for study purpose. These companies are classified in 12 sectors as Energy-Intensive Industries based on Energy Conservation Act'2001. Companies Data are collected via BRR & annual reports of the companies. Content analysis, statistical tools such as Average, coefficient of Variation & Chi-Square test are used for data analysis. After analysis, it is concluded that 96% companies are following the said pattern of BRR given by SEBI whereas 4% companies are following their own pattern for environmental disclosure. Among 12 sectors, Pulp & Paper sector performed best by disclosing 80% of the environmental information but they also overlooked the remaining 20% of information required in the BRR. The overall weighted score is 68% which indicates the quantum of environmental information disclosed by Indian listed companies required in the BRR.

KEYWORDS: *BRR, Environmental Disclosure, NSE, Environmental Disclosure Index.*

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Introduction

Elon Musk, CEO of Tesla Inc. said, "We are running the most dangerous experiment in the History right now which is to see how much carbon dioxide the atmosphere can handle before there is an

environment catastrophe.” This quote is very contemporary in today’s world as we are facing severe climatic issues like Global Warming, Drought, Uneven Rain & other environment disaster very frequently. The changing world climate will have an extensive influence on our planet’s people, ecosystems and cities.

The climate change is caused by natural & anthropogenic (human activities) activities. The natural activities include variation in earth’s orbit, volcano, etc. Anthropogenic activities include Greenhouse Gases (GHG) emissions, burning of fossil fuel, Industrial activities etc. The natural activities are not in control of Mankind whereas the anthropogenic activities can be controlled by Mankind.

Industrial activities are the major anthropogenic activity for climate change. Industrial activities are controlled by Corporate sectors & nowadays the Government is developing rules for Corporate sectors to control & reduce the GHG emissions which are impacting the environment. Environmental Reporting is one tool of legal bodies to check the efforts by Corporate Sector for minimizing the activities having negative impact on the Environment. Environmental Reporting contains disclosure related to the environmental activities such as conservation of natural resources, counter measures to minimize the GHG emissions, using of renewable source of energy, tree-planting etc.

Environmental Disclosure are a means to convey the information to the stakeholders about the impact on the environment by the organization’s actions. The disclosure may be of 2 types: financial and non-financial. Every country has its norms, regulations & laws to reduce the GHG emissions. At global level, Environmental reporting may be done through Global Reporting Initiative (GRI), U.S Securities & Exchange Commission (SEC) & doctrine of law. Apart from that, there are other ways to communicate information which consist annual reports, CSR reports, stand –alone reports, environmental brochure, corporate websites etc.

In India Environmental Disclosure started from 1986 with Environment Protection Act’1986. Over the period new acts & some regulations were made for controlling the GHG emissions by Indian Corporate Sectors. The prevailing regulations & acts are Corporate Responsibility for Environment Protection 2003, SEBI Corporate Governance 2003, DPE Guidelines, Companies Act’ 2013 etc.

In India, SEBI introduced a clause 55, which obligate top 100 listed entities based on the market capitalization at BSE & NSE to include Business Responsibility Report (BRR) as a part of their annual report as on 31st March 2012 for disclosing environmental information and its impact.

In this research paper, a study has been conducted on identifying environmental disclosure practices of 70 listed companies of NSE for the financial year 2019-2020 and developed a Weighted Environmental Disclosure Index to know the extent of disclosure made by Indian listed companies.

Review of Literature

Kumar (2020)⁷ analyzed the nature of sustainability reporting practices of the top 100 NSE listed companies in India. He also examined the extent of sustainability disclosure for the Global Reporting Initiative (GRI), ownership structure & industry type; and analyzed the differences of sustainability disclosure among them. He selected top 100 NSE listed companies of India for the FY 2017–2018 and 2018–2019 as a sample. Independent Sample t-test & Cohen’s d test was used for the data analysis. It was observed that there is a significant difference in sustainability reporting practices of the companies

and found that GRI reporting companies have significantly higher sustainability disclosure than non-GRI reporting companies in India.

Maqbool and Zamir (2019)⁸ analyzed the pattern of CSR activities and the extent of CSR disclosure made by SENSEX companies. They selected themes of CSR reporting such as 'community development', 'environmental activities', 'human resources', 'products & customer relations' and 'fair business practices' and analyzed their theme-wise CSR disclosures. They selected the top BSE 30 companies listed on Sensex for the financial year 2016-2017. Using content analysis, they observed that overall CSR disclosure of Indian listed companies is satisfactory as compared to the other developing countries. It was found that among 5 themes, 'community development', 'fair business practices' and 'environmental activities' are having high-level disclosures and 'human resource' and 'product and customer relations' having low-level disclosures.

Charumathi & Rahman (2017)³ examined corporate climate change disclosure & measured the level of disclosure by large Indian companies. They also investigated that whether the disclosures are improved after implementation of BRR and introduction of the Paris Climate Agreement. They selected S&P Nifty 50 companies for 5 years from FY 2009-10 to FY 2016-17 as a sample. Analysis of Variance, Descriptive statistics & T paired tests were used. They concluded that there are significant differences in the level of climate change disclosures by large Indian companies. They also found that there is a significant improvement before and after the implementation of BRR and introduction of Paris Climate Agreement.

Charumathi & Rahman (2017)⁴ studied the regulatory framework for GHG Emission reporting at the global and Indian level. By using GHG Disclosure Index, they measured the level of GHG emission reporting and found out company-wise, year-wise, sector-wise, sub-indices wise differences in the level of GHG emission reporting by Indian companies. They took a sample of 30 BSE companies. Analysis of Variance (ANOVA) disclosed that there are significant differences among company-wise, year-wise, sector wise, and sub-Indices-wise in the level of Greenhouse Gas emission disclosure.

Ganapathy and Kabra (2017)⁶ examined the status of environmental disclosure of selected polluting companies in India. They selected 177 most polluting companies of India from 2009-2010 to 2014-2015 as a sample. They used content analysis, descriptive statistics and regression models in their study. They observed that only 40.86% of the sample companies disclosed information about environmental regulations prevailing in India. They also found that companies having more stakeholders, disclosed more environmental information.

Swain, Kanungo and Sakti (2017)⁹ studied on aspects and regulatory framework of corporate environmental reporting. They examined consistency in disclosing environmental factors and analysed the extent of environmental disclosure by Indian companies as per GRI guidelines. They selected the top 50 Indian, BSE companies as a sample for the year 2014-2015. Coefficient of variation, proportion test and chi-square test were used. They deduced that there is no consistency in disclosing environmental factors of sample units. Among disclosing factors, Energy is the highest one while environmental grievances mechanism is the least one among the Indian companies.

Chaklader & Gulati (2015)² analysed environmental disclosure practices of Indian companies and the impact of different independent variables on dependent variable i.e. environmental disclosure index (EDI). They selected the top 50 companies of Economic Times ET 500. They used descriptive statistics and regression model & concluded that out of 6 independent variables, only 2 variables that are size and environmental certification are statistically significant and are positively associated. This indicated that bigger-sized companies and the environmentally certified companies disclose more environmental information.

Bhatia & Tuli (2014)¹ compared the extent of sustainability reporting practices of 2 major economies i.e. India & China. They took 17 companies from BSE-30 (India) and 19 companies from SSE 50 (China) for the time period 2006-2007 to 2010-2011. Independent sample t- test and Kruskal –Wallis H test was used. It was concluded that Indian corporate has higher sustainability disclosures and reporting practices as compared to China.

Charumathi & Ramesh (2013)⁵ examined disclosure practices & measured the level of voluntary disclosure of Indian companies by developed a Voluntary Disclosure Index (VDI). They selected 42 NIFTY Indexed companies for the FY 2011-2012. ANOVA, t-test, Cronbach's Alpha, and correlation were used. They deduced that the extent of voluntary disclosure of sample units is a little bit above 45% which showed that companies have to improve financial and non-financial disclosure in their annual reports.

Research Gap Identified

With reference to the previous literature, it has been observed that research work done in past-primarily focused on the nature of environmental disclosure practices of the corporate sector and their reporting pattern at the Global & National level. Research has also analysed the impact of the practices on the environment, examined the extent of disclosure and measured it using a disclosure index. In India, few studies were conducted related to environmental disclosure practices and their pattern with the help of annual and sustainability reports. There is no study conducted specifically on the extent of environmental disclosure practices by Indian Corporates using Business Responsibility Reports (BRR). Thus, the main aim of this research is to study the BRR pattern, the environmental disclosure practices and measured the extent of disclosure in the BRR.

Objectives

The objective of the study are as follows:

- To study environmental disclosure practices of Indian listed companies as per BRR.
- To develop Weighted Environmental Disclosure Index to know the extent of disclosure made by Indian companies with respect to BRR.

Hypothesis

As per SEBI guidelines, all the listed companies have to furnish BRR as a part of their annual report. The SEBI has developed the BRR format which has to be followed by every listed company & there

should be no difference in the disclosure practices of Indian companies with an environmental perspective. So it has been assumed that there is no difference in the environmental disclosure practices followed by Indian companies among the 12 sectors.

H_{01} - There is no significant difference among 12 sectors of listed companies as regard to environmental disclosure practices.

Research Methodology

Sample size

For study purpose, a procedure is followed to identify the sample companies. In the first step, a list of top 1000 companies based on market capitalisation at NSE for the financial year 2019-2020 as per BRR guidelines is selected. By using the random formula in excel, the data was randomly arranged. In the second step, using statistical formula 285 companies were obtained. Among the 285 shortlisted companies; only 70 companies were Energy Intensive as per Energy Conservation Act, these 70 companies were selected for the analysis. Thus, a list of 70 randomly identified energy intensive companies was created for the final study.

Data Collection

Data are collected via secondary sources. The study mainly focuses on the annual reports of the sample units. The data is collected from Annual reports, Business Responsibility Reports and Sustainability reports which are available on the company's website. Money control website is also used for collecting data of sample units.

Statistical Tool

Chi- Square Test: For hypothesis testing, Karl Pearson Chi- Square test is used. It's a non-parametric test. It is used to check whether theoretical distribution data is fitted best on the observed data distribution.

Business Responsibility Report (BRR)

Keeping the view of Environmental Disclosure Guidelines for Corporate Sector in Developed countries, Indian Ministry of Corporate Affairs (MCA) issues National Voluntary guidelines (NVGs) on Social, Environmental and Economic responsibilities of Business on July 8, 2011. For implementing the guidelines & keeping the larger interest of stakeholders on the Economic, Social & Governance (ESG) perspective, Security & Exchange Board of India (SEBI) in its clause 55, on Aug 12, 2012, mandated inclusion of Business Responsibility Report (BRR) as a part of the annual report for the top 100 listed entities (based on the market capitalization) at BSE & NSE as on 31st March 2012. Both BSE & NSE shall independently made a list of 100 entities on which this BRR rule is applicable.

BRR is a disclosure of responsible business practices by the listed company to all its stakeholders. BRR is mandatory for all segment of companies including manufacturing, auto, IT & services etc. BRR is submitted at SEBI office in the electronic format along with the Annual Report.

In Dec 2015, SEBI extended BRR reporting for the top 500 listed companies based on market capitalization at BSE and NSE. From 2016-17, it is mandatory for all companies to submit their BRR. In March 2019, MCA has updated and upgraded NVGs into National Guidelines on Responsible Business Conduct (NGBRC) giving more emphasis on the global developments on Environmental Reporting. In NGBRC, the existing format of BRR is updated by including the global practices in non-financial sustainability reporting.

The main recommendation of the NGBRC is to change the name of BRR to Business Responsibility & Sustainability Reporting (BRSR).

In Dec 2019, SEBI extended BRR reporting for top 1000 listed companies based on market capitalisation at BSE & NSE from the financial year 2019-2020.

BRR format is defined in SEBI Regulations in the sub clause 34(2)(f).

BRR contains 5 Sections:

1. General Information about the company.
2. Financial Details of the company.
3. Other Details.
4. BR Information.
5. Principle-Wise Performance.

The 5th section 'Principle-Wise Performance' has 9 principles. Every principle has some questions. Among 9 principles, only principle 6 is related to the environmental disclosure which has been considered for the study. The principle is "Business should respect, protect, and make efforts to restore the environment". Principle 6 has seven questions related to environmental reporting and its disclosure.

The 7 questions are as follows:

1. Does the policy related to Principle 6 covers only the company or extends to the Group/Joint Ventures/Suppliers/Contractors/NGOs/others.
2. Does the company have strategies/ initiatives to address global environmental issues such as climate change, global warming, etc? Y/N. If yes, please give hyperlink for webpage etc.
3. Does the company identify and assess potential environmental risks? Y/N.
4. Does the company have any project related to Clean Development Mechanism? If so, provide details thereof, in about 50 words or so. Also, if Yes, whether any environmental compliance report is filed?
5. Has the company undertaken any other initiatives on-clean technology, energy efficiency, renewable energy, etc. Y/N. If yes, please give hyperlink for web page etc.
6. Are the Emissions/Waste generated by the company within the permissible limits given by CPCB/SPCB for the financial year being reported?
7. Number of show cause/ legal notices received from CPCB/SPCB which are pending (i.e. not resolved to satisfaction) as on end of Financial Year.

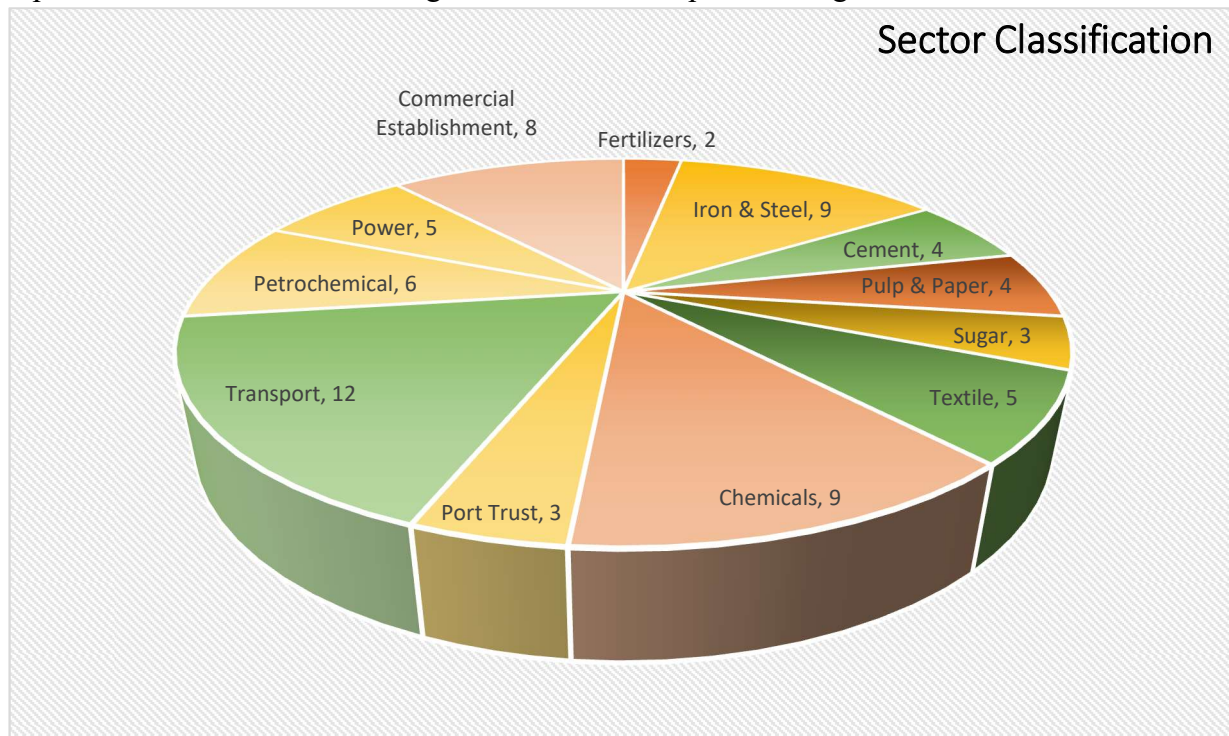
The study is basically on the BRR pattern given by SEBI followed by the sample units. The research work mainly focuses on the information given by the companies on these seven questions of principle 6 of BRR. The study is also related to the environmental disclosure practices and quantum of disclosure made by the sample units/companies.

Content Analysis

The study uses a qualitative research technique i.e. Content Analysis for analysing the collected data. The technique is quite common for analysing the annual reports, BRR and sustainability reports of the companies. Earlier carried out studies used this technique for the identification of ethical, social and environmental disclosure by the companies. The study uses this technique to investigate the nature & quantity of environmental disclosure practices by Indian Companies. It is also used to know the extent of disclosure by the sample units.

Sample Distribution

A sample of 70 companies is shortlisted from NSE for the period of FY 2019-2020 for study purpose. These companies are classified into different sectors as per the Energy Conservation Act, 2001. As per this act, the schedule, section 2(s) defined the list of energy intensive industries and other establishments which are distributed in 15 different sectors. The sample units taken for the study was classified & distributed between 12 sectors from Energy Act. Only 3 sectors of Energy Act, i.e. Aluminium, Chlor Alkali & Railways were left as no companies from these sectors were in the sample. The pie chart shown below is having the number of companies along with the classification of sectors.



Environmental Disclosure Index

Environmental Disclosure Index has been developed to know the extent of environmental disclosure by the companies. Disclosure Index can be either weighted or unweighted score. For this study, weighted disclosure index has been used. The weighted average assigns the relative importance of each data point instead of treating all numbers equally. Thus, a mean weight is to be provided to every disclosure item as per their relative importance.

The study focuses on 7 questions of Principle 6 of BRR which are related to environmental disclosure. To calculate the disclosure index, different types of weights are assigned to disclosure item. The weights are as follows; if there is no disclosure = 0, disclosure =1, limited disclosure =2 & adequate disclosure =3. The disclosure item list is shown in appendix 1.

The extent of environmental disclosure is calculated by using the formula:

$$EDI = \frac{\text{Total no. of items appearing in the BRR of each company}}{\text{Maximum number of items appearing in the BRR.}}$$

Analysis & Discussion

The objective of the study is to find environmental disclosure practices & BRR pattern of the sample companies. Principle 6 of BRR is considered to analyse the disclosure pattern & practices of the sample companies. 70 NSE listed companies for the financial year 2019-2020 are selected for the study purpose.

The Content Analysis technique is used on the BRR & Annual reports of the sample units. It has been observed that all listed companies are not following the pattern of BRR which is developed by the SEBI for the environmental disclosure. Major part of companies is following the BRR pattern given by SEBI whereas few of them are not following it. Out of 70 companies, 67 companies i.e. 96% are following the BRR Pattern for disclosure whereas only 3 companies i.e. 4% are not following the pattern of BRR and providing disclosure in their own pattern.

To study the environmental disclosure practices of sample companies, questions of BRR principle-6 were analysed. The analysis work was carried out sector wise for identifying the performance of different sectors for a question. The performance of each & every sector was calculated by using the disclosure index. The disclosure index items shown in the Appendix 1. Average score of question for sector has been calculated & it has been included in the Table-1. The detailed outcome of scores of different sectors is mentioned below:

Table 1: Score Sheet of Various Sectors

Sr. No	Sectors	Question Wise Average Score							Overall Average (Out of 15)
		Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	
1	Fertilizers	2.50	2.00	2.00	0.00	1.50	1.00	1.00	10.00

2	Iron & Steel	2.33	1.78	1.44	1.11	2.11	1.00	0.90	10.67
3	Cement	2.00	2.25	1.50	1.50	2.00	1.00	0.50	10.75
4	Pulp & paper	2.00	2.25	1.75	1.50	2.50	1.00	1.00	12.00
5	Sugar	2.33	2.33	1.00	1.00	2.00	1.00	1.00	10.67
6	Textile	2.00	1.40	1.20	0.80	1.80	1.00	1.00	9.20
7	Chemicals	2.00	1.89	1.56	0.78	2.11	1.00	1.00	10.33
8	Port Trust	2.00	2.00	1.00	0.67	2.00	1.00	0.67	9.33
9	Transport sector	2.17	2.17	1.50	1.00	2.08	0.92	1.00	10.83
10	Petrochemicals	1.83	2.17	1.50	0.33	2.33	1.00	0.83	10.00
11	Power	1.20	2.20	1.00	1.60	2.20	1.00	1.00	10.20
12	Commercial Establishments	1.75	1.88	1.25	0.25	2.00	0.75	1.00	8.88
13	Question wise Average Score for Indian Corporate Sector	2.01	2.03	1.39	0.88	2.05	0.97	0.91	10.24
14	Coefficient of Variation (CV)	15.92	12.32	21.58	55.68	11.71	7.22	17.58	

Source: Own Computation

The Table 1 tell us the score sheet of all 7 questions related to the principle 6th for all sectors. This table shows the average score of each question for each sector. Apart from that, this table also presents, the overall average of each question for the Indian Corporate Sector. The analysis for all the sectors has been done question wise & detailing has been mentioned below:

- The Question 1 of BRR is related to the environment policy abiding coverage of company, group, JV, suppliers, contractors, NGOs or others. For this question, Fertilizer sector got the highest score, which indicates that the environmental policy of the sample units is followed by the company and extended to its group, Joint Ventures, suppliers, contractors, NGOs & others. On the contrary, the power sector got the least score implied that their environmental policy is restricted only to company & not followed by group ventures. The overall average of this question for Indian listed companies is 2.01, whereas max score is 3, indicating that the environmental policy of all sample units is followed by company and others but not by all.
- The Question 2 of BRR is related to the strategies for addressing global environmental issues. For this question, the Sugar sector got the highest score implied that this sector is having strategies for addressing global warming & other issues. The sample units of the sugar sector have disclosed their strategies on all aspects i.e. Energy efficiency, Water conservation, Environmental protection, & Technology upgradation. Textile sector got the least score, which implies that the sample units have strategies but disclosure is on limited aspects. The overall average score of this question is

2.03, whereas max score is 3 for all Indian listed companies indicates that they all have strategies but their disclosure is on limited aspects.

- The Question 3 of BRR is related to the company's identification of potential environmental risks and assess them. For this question, the Fertilizer sector got the highest score implied that the sample units of this sector has identified environmental risks and are certified with Environmental Management System (EMS). Whereas 3 sectors i.e. Power, Port Trust & Sugar have the same & least score which implied that they have identified risks but are not certified with any EMS. The overall average score of Indian listed companies for this question is 1.39, where max score is 2, indicating that all Indian companies have identified environmental risks but only a few companies are certified with EMS.
- The Question 4 of BRR is related to the CDM (Clean Development Mechanism) projects & its details. For this question, Power sector got the highest score which implies that they are having CDM projects & have detailed explanations of the projects whereas fertilizer sector has got the least score implied that the companies don't have CDM Projects. The overall average score of that question for Indian listed companies is 0.88 where max score is 2, signifies that only few Indian companies have CDM projects & its detail.
- The Question 5 of BRR is related to the initiatives adopted by companies on energy efficiency, renewable energy, clean technology etc. Pulp & Paper sector got the highest score owing to their initiatives towards clean technology, renewable energy & other energy efficient measures. They have also provided adequate disclosure about those aspects. The Fertilizer sector received the least score implied that they have few initiatives & limited disclosures on those points. The overall average score for Indian listed companies is 2.05 & the max score is 3, indicating that the Indian companies have initiatives regarding energy efficiency & clean technology, but the disclosures are limited on those initiatives.
- The Question 6 of BRR related to the company's emissions/ waste generation with respect to the permissible limits given by CPCB/SPCB. Except for two sectors, all other sectors were having emissions within the permissible limit. Commercial Buildings Sector & Transport sector were having the emissions beyond the limit given by CPCB/ SPCB. The overall average score is 0.97 for all the Indian companies whereas the max score is 1, implied that all companies except a few; have emissions/ waste within the permissible limits given by CPCB/SPCB during the financial year.
- The Question 7 of BRR is related to the pending legal cases/complaints with CPCB/SPCB at the end of the financial year. Out of 12 sectors, 8 sectors were having no cases pending with CPCB/SPCB at the end of the financial year. Among the remaining 4 sectors, the Cement sector is having the highest pending cases with CPCB/SPCB till the end of the financial year. The overall average score is 0.91 for all the Indian companies where the max score is 1, indicates that except a few, all companies have no pending cases at the end of the financial year.

On comparing the score of all sectors, Pulp & Paper sector got the highest score i.e 12 out of 15. It signifies that this sector is disclosing 80% of the environmental information as required by SEBI in the BRR. This sector performed best which indicates that the environmental policy of the sample units is followed by company, groups, joint ventures, subsidiaries, etc. They have Initiatives & Strategies on every aspect related to environmental issues. They also have CDM projects for environment protection. This sector has identified potential environmental risks and is certified with EMS. The emissions generated by them were within the permissible limits given by CPCB/ SPCB and don't have any pending cases with CPCB/SPCB at the end of the financial year. But still, 20% of information is not disclosed by this sector as required by SEBI in the BRR.

Among all sectors, the Commercial establishment sector got the least score i.e. 8.88 which indicates that only 59% of the environmental information is disclosed by this sector as required by SEBI in the BRR. The sample units of this sector have strategies related to environmental issues, but the disclosure of those strategies is on limited aspects. The companies have few CDM projects and having no details related to those projects. The emissions generated by the companies were exceeding the limit decided by CPCB/SPCB at the end of the financial year.

Consistency Level of Responses in Different Sectors

To check the consistency level of responses by all the sectors, the coefficient of variation (C.V.) is calculated. The highest variation is 55.68% related to question 4, which is covering the details about the CDM projects. This indicates that there is an inconsistency in the level of responses which means responses of different sectors for this question are diversified. The least variation is. 7.22% related to question 6 which tells about the company's emissions/ waste generation with respect to the permissible limits given by CPCB/SPCB. This indicates that there a certain level of consistency in the responses which means all sectors have given the same responses for this question.

Hypothesis Testing

In order to test the hypothesis, Karl Pearson Chi- Square test is used. The calculated value is compared with the table value for (n-1) degree of freedom at a certain level of significance. Here 5% is the level of significance. The formula is $\chi^2 = \sum[(O-E)^2/E]$ and α value is 0.05, which shows the level of significance. If calculated value is less than a table value, then null hypothesis is accepted and if calculated value is greater than a table value, null hypothesis is rejected. The test has been calculated on the data and got the desired results.

Degree of Freedom (n-1)	α value (level of significance)	Calculated value	Table value
12-1=11	0.05	18.68	19.675

Source: Own Computation

Here, the calculated value i.e. 18.68 is less than the table value i.e. 19.675 for 11 degree of freedom at 5% level of significance, implied that null hypothesis is accepted. It means that there is no significant

difference in the environmental disclosure practices among the 12 sectors. It is to be considered that the theoretical distribution data is best fitted to the observed data distribution. It shows that divergence in the observed and expected values is due to the sampling fluctuations.

Overall Weighted Score for Industry

The overall weighted score for Indian Corporate Sector is calculated by using respective weights of each question for the sample units. This score signifies the quantum of environmental disclosure by Indian listed companies related to the Principle 6 of BRR.

The overall calculated weighted score is 10.26 whereas the maximum score is 15. This signifies that Indian corporate sector is disclosing around 68% of the environmental information required in BRR regulated by SEBI but 32% information is not yet disclosed by Indian Corporate Sector.

Although all sample companies are not disclosing complete environmental information as required in the BRR, yet all the companies have been following the same pattern of disclosure. It is proved by Chi – square test that null hypothesis is accepted. It means all the sample companies are disclosing environmental information in the similar pattern, there is no significant difference identified.

Concluding Remark

The present study is basically focusing on the principle 6 of BRR & its seven questions which are related to the environmental disclosure. For the study, 70 companies of NSE for the financial year 2019-2020 were selected.

The study examines the BRR pattern as regulated by SEBI, for the environmental disclosure which is followed by all Indian listed companies. It has been observed that around 96% of the sample companies are following the said pattern of BRR as per the SEBI guidelines for the disclosure whereas remaining 4% companies are providing disclosure in their own pattern.

In the second part, an analysis on the environmental disclosure practices of the sample units has been done with reference to BRR. The Sample units were sorted in the different sectors according to the Energy Conservation act. It was observed that Pulp & Paper sector is providing the highest disclosure i.e. 80% & overlook the remaining 20% disclosure. Whereas Commercial establishments have least disclosure i.e. 59% of the required information in the BRR.

At last, an overall weighted score is calculated to know the extent of environmental disclosure by the Indian Corporate Sector. The weighted score is 68% which tells us the quantum of environmental information disclosed by the Indian listed companies. This information is related with the principle 6 of BRR regulated by SEBI. It is observed that 32% of environmental disclosure information was overlooked by the Indian Listed companies in the BRR.

References

1. Bhatia, A. & Tuli, S. (2014). An Empirical Analysis of Sustainability Disclosure Practices: Evidence from India and China. *IIM Kozhikode Society & Management Review*, 3(2) 135–148.
2. Chaklader, B. & Gulati, P.A. (2015). A Study of Corporate Environmental Disclosure Practices of Companies Doing Business in India. *Global Business Review* ,16(2), 321–335. doi: 10.1177/0972150914564430.
3. Charumathi, B. & Rahman, H. (2017). Climate Change Related Disclosure by Large Indian Companies - Pre and Post Business Responsibility Reporting and Paris Climate Accord. <https://www.researchgate.net/publication/328581041>.
4. Charumathi, B. & Rahman, H. (2017). An Empirical study on Corporate Greenhouse gas emissions disclosure in India. *Information Technology and Management*, 14(1), 13-24. <https://www.researchgate.net/publication/328581115>.
5. Charumathi, B. & Ramesh, L. (2013). Voluntary Disclosures by Nifty companies: A Content Analysis. *Indian Accounting Review*, 17(2), 67-82.
6. Ganapathy, E. and Kabra, K.C. (2017). The Impact of Corporate Governance Attributes on Environmental Disclosures: Evidence from India. *Indian Journal of Corporate Governance*, 10(1), 24-43. doi: 10.1177/0974686217701464.
7. Kumar K. (2020). Emerging phenomenon of corporate sustainability reporting: Evidence from top 100 NSE listed companies in India. *J Public Affairs*. 2020;e2368. <https://doi.org/10.1002/pa.2368>.
8. Maqbool, S. & Zamir, M. N. (2019). Corporate Social Responsibility Reporting in India: A Study of SENSEX Companies. *Management and Labour Studies*, 1–15. doi: 10.1177/0258042X19832122.
9. Swain, R. K., Kanungo, R., & Dash, S. R. (2017). Environmental Disclosure Practices in India: Evidence from Top 50 Companies of BSE. *IOSR Journal of Business and Management (IOSR-JBM)*, 19(9)(V), 05-14. doi: 10.9790/487X-1909050514.
https://www.sebi.gov.in/sebi_data/attachdocs/1344915990072.pdf
https://www.sebi.gov.in/legal/circulars/aug-2012/business-responsibility-reports_23245.html
https://www.sebi.gov.in/legal/circulars/nov-2015/format-for-business-responsibility-report-brr-_30954.html
https://www.mca.gov.in/Ministry/pdf/BRR_11082020.pdf
https://www.sebi.gov.in/reports-and-statistics/reports/aug-2020/consultation-paper-on-the-format-for-business-responsibility-and-sustainability-reporting_47345.html

Appendix 1: Disclosure Index

No.	BRR-Principle 6 Questions & its disclosure points	Maximum Score
1	Does the policy related to principle 6 cover only the company, extends to the group / Joint ventures / Suppliers / Contractors /NGOs and others.	3
1.1	Policy related to principle 6 cover whom (none, no-disclosure=0); (Cover only company, disclosure=1); (Covers selected, limited disclosure=2); (Cover all , Adequate disclosure=3).	3
2	Does the company have strategies/ initiatives to address global environmental issues such as climate change, global warming etc.? Y/N If Yes, please give hyperlink for webpage etc.	3
2.1	Company having strategies related to Energy efficiency, Water conservation, Environment protection, Technology Upgradation (no strategies, no-disclosure=0), (Strategies but not detail definition, disclosure=1); (Strategies defined on few aspects, limited disclosure=2); (strategies defined on all aspects, adequate disclosure =3).	3
3	Does the company identify & assess potential environmental risks? Y/N.	2
3.1	Company identify risks and certified with any Environmental Management system (Risk not identified, no disclosure=0), (Risk identified but no certification, disclosure =1), (Risk identified and Certified, adequate disclosure=2).	2
4	Does the company have any project related to Clean Development Mechanism"? If so, provide details thereof, in about 50 words or so. Also if yes, whether any environmental compliance report is filed?	2
4.1	Company having Projects related to CDM (No projects, No-disclosure=0), (Having projects but no details, Disclosure=1), (Having projects with details, Adequate disclosure=2).	2
5	Has the company undertaken any other initiatives on clean technology, energy efficiency, renewable energy etc.? Y/N.	3
5.1	Company having initiatives on clean technology, energy efficiency, renewable energy etc. (No initiative, No Disclosure=0), (Initiatives, Disclosure =1), (Initiatives & detail on few, Limited disclosure=2), (Initiatives & details on all, Adequate disclosure=3).	3

6	Are the emissions/ waste generated by the company within the permissible limits given by CPCB/ SPCB for the financial year being reported?	1
6.1	Emissions within the permissible limits given by CPCB/ SPCB. (Beyond permissible limit, No –disclosure =0), (Within permissible limit, Disclosure=1).	1
7	Number of show cause/ legal notices received from CPCB/ SPCB which are pending (i.e. not resolved to satisfaction as on end of financial year).	1
7.1	Having pending legal notices. (Pending legal notices, no-disclosure=0); (No legal notices, disclosure=1).	1
	Total	15
	% of Maximum	100%

Appendix 2: Sample Companies

Sectors	Company	No. of Companies	Percentage
1. Aluminium		0	0%
2. Fertilizers	Dhanuka Agritech Limited	2	2.9%
	UPL Limited		
3. Iron & Steel	Vardhman Special Steels Limited	9	12.9%
	Jindal Saw Limited		
	Man Industries (India) Limited		
	Steel Authority of India Limited		
	Indian Metals & Ferro Alloys Limited		
	Jindal Steel & Power Limited		
	Mishra Dhatu Nigam Limited		
	Precision Wires India Limited		
	Mukand Limited		
4. Cement	UltraTech Cement Limited	4	5.7%
	The India Cements Limited		
	HeidelbergCement India Limited		
	Ambuja Cements Limited		
5. Pulp and Paper	West Coast Paper Mills Limited	4	5.7%
	ANDHRA PAPER LIMITED		
	Orient Paper & Industries Limited		
	JK Paper Limited		
6. Chlor & Alkali		0	0%
7. Sugar	Vishwaraj Sugar Industries Limited	3	4.3%

	Triveni Engineering & Industries Limited		
	Dalmia Bharat Sugar and Industries Limited		
8. Textile	Welspun India Limited	5	7.1%
	Siyaram Silk Mills Limited		
	The Ruby Mills Limited		
	Kewal Kiran Clothing Limited		
	Sutlej Textiles and Industries Limited		
9. Chemicals	Bharat Rasayan Limited	9	12.9%
	Shalimar Paints Limited		
	Sumitomo Chemical India Limited		
	Meghmani Organics Limited		
	Chembond Chemicals Ltd		
	Zuari Agro Chemicals Limited		
	Thirumalai Chemicals Limited		
	Plastiblends India Limited		
Atul Limited			
10. Railways		0	0.0%
11. Port Trust	Shipping Corporation Of India Limited	3	4.3%
	Gujarat Pipavav Port Limited		
	Cochin Shipyard Limited		
12. Transport sector(Industries & Services)	Jay Bharat Maruti Limited	12	17.1%
	TCI Express Limited		
	Aegis Logistics Limited		
	Fiem Industries Limited		
	Munjral Auto Industries Limited		
	Ucal Fuel Systems Limited		
	Transport Corporation of India Limited		
	India Nippon Electricals Limited		
	Exide Industries Limited		
	GNA Axles Limited		
	Timken India Limited		
Sharda Motor Industries Limited			
13. Petrochemicals, Gas Crackers, Naphtha Crackers	GP Petroleums Limited	6	8.6%
	Chennai Petroleum Corporation Limited		
	Petronet LNG Limited		
	Adani Gas Limited		
	Oil & Natural Gas Corporation Limited		

and Petroleum Refineries	Gujarat Gas Limited		
14. Thermal Power Stations, hydel power stations, electricity transmission companies and distribution companies	Universal Cables Limited	5	7.1%
	GE Power India Limited		
	Torrent Power Limited		
	Jaiprakash Power Ventures		
	KEI Industries Limited		
15. Commercial buildings or Establishments	Ashiana Housing Limited	8	11.4%
	Capacit'e Infraprojects Limited		
	Arvind SmartSpaces Limited		
	J.Kumar Infraprojects Limited		
	Oberoi Realty Limited		
	DLF Limited		
	PSP Projects Limited		
	Anant Raj Limited		
	Total Companies	70	100%