

Extent of Environmental disclosure practices of selected Indian Manufacturing Companies on the websites

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Abstract

Globally there has been hue and cry regarding degradation of the environment and it has been traced to industrial revolution. Manufacturing companies are projected to address the influence of their operations on the environment. Annual reports do not communicate material development in sufficient time to meet the informational extensive use of the World Wide Web technologies by the companies. There is an increase in the percentage of companies which promoted their websites to disseminate the business information. Dynamic business world has transformed traditional paper based environmental reporting to web based environmental reporting. A website reaches a wider audience and provides detailed information than traditional printed annual reports. Audio and video clips allow interactive information than print form. Extent of the environmental disclosure was checked through content analysis. Environment disclosure score index has been constructed to measure the extent of companies' reporting practices through content analysis. Companies are not mandate to disclose environmental reporting practices as financial reporting. Internet has become a fastest way to communicate around the world. Manufacturing companies should use internet as communication source to make the relevant information available for their stakeholders.

Key words: *Environment information disclosure, Environmental reporting, Environment disclosure score index, voluntary disclosure*

1. Introduction

Environment information disclosure now-a-days, have become a vital component of environment policy of the manufacturing companies. Globally

there has been hue and cry regarding degradation of the environment and it has been traced to industrial revolution. Manufacturing companies are projected to address the influence of their operations on the environment. Companies nowadays are getting cognizant about their social responsibility regarding environmental disclosure. There is a rise in the status of corporate environmental reporting. The published form of the annual reports is mandatory for the company form of organisation. Companies publish both mandatory and voluntary information in the annual reports. Environmental disclosure reports are usually released on annual basis and many a times become out-dated, therefore it is important for the companies to provide these reports in time to the stakeholders. There is an increase in responsiveness of issues regarding the environment. Both the stakeholders and the potential investors demand social and environmental disclosure. Therefore, companies have to disclose in both the ways, qualitative and quantitative, to influence the target audience and the stakeholders. Published reports are released on annual basis and many a times are not available at the time they are needed. Therefore, it is essential to provide the reports timely and one of the options is to provide this information in the websites of the companies which are available to the stakeholders through internet. Internet being the fastest mode of communication has been used by the companies to disclose their mandatory and voluntary information in their respective websites. Although environmental disclosure is a voluntary disclosure but now-a-days, companies especially manufacturing companies are becoming conscious to disclose this information. Corporate environmental reporting is basically an extension of traditional reporting but it broadens the prospects by adding more concerns such as matters related to

employees, environment and other persons which are related to it such as employees, customers and the public as a whole. The web based reports are available any time through internet connection at any place. The importance of these reports can be enriched through hyperlinks. Websites provide current data and it becomes easy to get new and relevant information on the websites than to publish its hard-core reports. Moreover, it avoids the wastage as it restricts printing the hard copies.

2. Review of Literature

Internet being a breakthrough research has been used as a communication tool to communicate the company's information. The geographical restrictions are disappearing. There are a lot of studies which talk about internet as a medium of communication for companies' environmental disclosure practices.

Manif, et.al (2006) analysed the environmental information disclosed in the annual reports of the Malaysian listed companies. Sample of 25 companies from different industrial sectors such as Plantation, Consumer products, Construction & Industrial products was constructed. Content analysis was used to analyse the level of environmental disclosure level in their respective annual reports. Plantation and Industrial products were declared environmental- oriented companies as they pay more attention to environmental management system. As environmental disclosure is not mandatory, there is a lack of non-compliance of these disclosures. Companies should be more transparent towards the sustainable development of the society.

Jose & Lee (2006) investigated the environmental management policies of 200 companies of fortune Global 200 through content analysis with respect to seven areas: environmental concerns, environmental structures, environmental leadership activities, environmental control external validations or certifications and forms of corporate disclosures.

Dutta & Bose (2008) studied the deployment of internet through companies' websites for disclosing corporate environmental information by 104 listed companies of Bangladesh. The time period for the study was three months. The extent and content of the websites was studied through content analysis. The results revealed that level of environmental disclosure in companies' websites was in infancy because of low level of disclosure.

Sutipun & Stanton (2012) studied the environmental disclosure practices in the websites of Thai companies listed in Stock Exchange of Thailand. The results of the study discovered that 88 % of the sampled companies disclose their environmental information in the websites of the

companies. The companies' characteristics like ownership status, audit firm and type of industry do have relationship with the environmental disclosure index.

Uwuigbe (2012) explored the utilization of internet in communicating the environmental disclosure practices of 30 Nigerian financial and non-financial companies. Content analysis was used as a basic technique to quantify the contents of the websites regarding environmental practices. Multiple regression technique was used to analyse the relationship between financial performance and the extent of environmental disclosure. There was a significant relationship between financial performance and the corporate disclosure practices. **Akbas & Canikli (2014)** studied the status of environmental disclosure practices of 62 Turkish companies listed on BIST-100 index in 2011. The annual reports of the sampled companies were analysed through content analysis. The results of the study revealed that companies disclosed the narrative information and the level of disclosure varied among different sectors.

Hang (2014) studied the extent of environmental disclosure practices by Vietnam listed companies in their websites and annual reports for the period of 2012 to 2014. Content analysis was used to quantify the extent and content of the disclosure. Further the study had revealed that size of the companies was having a significant impact on the disclosure.

Ullah et. al (2014) examined the environmental disclosure practices and the extent of the disclosure of the textile companies listed in Bangladesh. The results of the study revealed that 69 % of the sampled companies do not disclose environmental issues in their annual reports. The study further suggested that government and the regulatory authorities should take necessary steps to motivate the textile industry to disclose the issues regarding environment in their annual reports.

Jariya (2015) examined the extent and content of environmental disclosure information of Sri Lankan companies listed on Colombo Stock Exchange in their respective annual reports. Data was collected from 68 companies of 17 sectors for the year 2011-12. The results of the study had discovered that 41 companies out of 68 companies had disclosed environmental information in their annual reports. Maximum disclosure had been reported in sustainability reports, CEO reports, mission and vision and value statements. Extent of information regarding environment disclosure varies in different sectors. Further the results revealed that theme named Green Product disclosed at its maximum and theme named Spills disclosed at its lowest. There is a significantly negative

relationship between size and the environmental disclosure.

Eljayash (2015) studied that there were huge changes in the governance systems of Egypt, Libya and Tunisia and these changes witnessed revolutions in political, legal and economic developments. The environmental disclosure practices of these countries were studied for three years. Content analysis was used as statistical technique for measuring disclosure index of companies of oil sector. Annual reports were studied for preparing environmental disclosure index for the years 2008, 2009 and 2010. The results had revealed that there was no or low disclosure information in the annual reports.

Rakiv, Islam & Rahman (2016) observed the extent of environmental reporting disclosures in the annual reports of Bangladesh listed companies through content analysis and revealed that only 41 companies out of 166 companies provide some sort of environmental disclosures in the annual reports.

3. Database and Research Methodology

Data has been collected regarding the environmental disclosure practices made by the Indian manufacturing companies listed on BSE on their respective websites. Sample consisted of 180 BSE listed Indian manufacturing companies covered under different industries (Paint, Petrochemicals, Automobiles, Auto ancillaries, Refineries, Starch, Fertilizers, Rubber, Pesticides, and Sugar). Corporate websites of the various companies were accounted for to gather the information regarding environmental disclosure. Content analysis has been used for analysing the extent of environmental information on the corporate websites. The sample size includes 180 manufacturing companies of various industries listed on BSE. Content analysis is a conceptual analysis which is widely used in corporate social and environmental responsibility research.

Table No. 1-Sample Distribution

S. No	Name of the Manufacturing Industry	Number of companies
1.	Paint	8
2.	Petrochemicals	13
3.	Automobiles	8
4.	Refineries	8
5.	Starch	6
6.	Fertilizers	18
7.	Rubber	19
8.	Pesticides	18
9.	Auto Ancillaries	56
10.	Sugar	26
	Total	180

3.1 Objective of the study

The main objective of the study is to measure the extent of environmental disclosure practices of the selected Indian manufacturing companies on their respective corporate websites. Content analysis is used as a research technique. To measure the extent of the environment disclosure of the concerned manufacturing companies on their corporate websites a disclosure index has been constructed on the basis of 19 environmental themes.

3.2 Themes of Environment Disclosure

1. Environment Management
2. Water Conservation
3. Environment, Health & Safety
4. Research & Development Evdeavors
5. Environmental Policy
6. Biodiversity
7. Environmental Pollution
8. Energy
9. Emissions & Effluents
10. Disaster Relief
11. Environmental Product Stewardship
12. Green Chemistry
13. Waste Management
14. GRI Disclosure
15. GHG Emissions
16. Environment Audit
17. Environmental Financial
18. Awards
19. ISO 14001

The extent of the environmental disclosure is measured by word/sentence count within these environmental disclosure themes by the companies on their corporate websites (Akbas&Canikli 2014, Jariya 2015.). On the basis of the environmental disclosure index score, companies have been placed within the range of 0%- 100% to measure the extent of the information regarding environmental disclosure (Rakiv, Islam &Rahman 2016). The location of the environmental disclosure within their websites has also been checked (Akbas&Canikli 2014, Jariya 2015, Rakiv, Islam &Rahman 2016).

4. Results

Content analysis is a research technique to collect the qualitative data. It is a method of coding the text/content of writing into various categories depending upon the criteria. The selection of the recording units in an important step and recording unit is specified according to the written material and the category in which it has been placed. It is used in this study to measure the extent of environmental disclosure in the corporate websites of the selected manufacturing companies.

Table No. 2: Location of Environmental Disclosure in the websites of the Companies

Location in the Websites	Total	% of the total items of Information
1. CSR Reports	18	10%
2. Separate Web page in websites	8	4.40%
3. Standalone Annual Reports in the websites	101	56%
4. Sustainability Reports	16	9%
5. HSE	25	14%
6. Home Page of the Websites	10	6%
7. Others	2	1%

Source: Developed by Author

Companies disclose the information regarding environmental disclosure at different locations in their respective websites. Table No. 2 has shown the detailed information regarding the companies' disclosure about environmental information at different locations within the websites. It was found that 18 (10%) companies out of 180 companies disclose environmental information in their corporate social responsibility reports. Only 8 (4.4%) companies disclose through separate webpage in their respective websites. Maximum disclosure is done through standalone annual reports in the websites i.e. by 101 (56%) companies. 16 (9%) companies disclose through sustainability reports. 10 (6%) companies disclose environmental information on the homepage of the websites. Only 2 (1%) companies have disclosed under other heading such as Green Initiatives about its environmental practices on their respective websites.

Table No. 3: Range of Total Web- Environmental Disclosure

Disclosure in Percentage	No. of Companies	% of Companies
100%	0	0%
90%-99%	3	2%
80%-89%	6	3%
70%-79%	4	2%
60%-69%	7	4%
50%-59%	25	14%
40%-49%	29	16%
30%-39%	55	31%
20%-29%	46	26%
10%-19%	5	3%
0%-9%	0	0%

Source: Developed by Author

Environmental disclosure reporting Index has been developed with the help of 19 themes for conducting the research. The disclosure is prepared by assigning the values zero and one to the factors covered under the environmental disclosure themes. Then the value of each category was counted and the environmental score index was constructed. Table No.3 indicates the percentage of companies disclosing their environmental reporting under different ranges. 31% companies have disclosed within the range of 30%-39%, followed by 20%-29% with 26% companies. Only 7% companies have disclosed above 70%.

Table No. 4: Range of Sentences used for Web- Environmental Disclosure

Range of Sentences	Number of Companies	Percentage in the sample
0-10	8	4.4% %
10-20	25	14%
20-30	25	14%
30-40	20	11%
40-50	17	9%
50-60	18	10%
60-70	23	12.77%
70-80	24	13%
80 & above	26	14.4%

Source: Developed by Author

Table No.4 states that content of the environmental disclosure information of the selected manufacturing companies has been analysed through number of sentences used. Around 50 (28%) companies have disclosed with the range of 10 to 30 sentences. 23 (13%) companies have disclosed within 50-60 sentences. Only 8(4.4%) companies have disclosed within 10 sentences. 26 (14.4%) companies have disclosed with more than 80 sentences.

Table No. 5 indicates the list of disclosure themes used for web based environmental reporting by Indian manufacturing industries. It states that the category of environment management has highest average disclosure of 89.2% during the time period 2011-12 to 2015-16. It indicates that around 89% companies disclose under the category named environment management which includes conservation of natural resources, recycling of natural plants, air emissions & tree plantation. It is followed by the theme energy with average disclosure score of 57.88%. It indicates that around 58% of the companies disclose under the theme energy. It includes the energy conservation, reduction in consumption of the equipment which increases the carbon emissions, replacement of old lights with LED lights, capital investment on the

equipment, installation of energy meters, energy audits, usage of solar energy, etc.

Table No. 5: Showing total Web-Environmental Disclosure under different categories

Disclosure Themes	Mean	Standard Deviation	Rank
Environment Management	0.892	0.09223	1
Water Conservation	0.5372	0.2714	3
Environment, Health & Safety	0.4573	0.26305	4
Research & Development Evdeavors	0.2247	0.06681	11
Environmental Policy	0.1549	0.14518	14
Biodiversity	0.1639	0.18167	12
Environmental Pollution	0.4392	0.11849	5
Energy	0.5788	0.15203	2
Emissions & Effluents	0.3872	0.18821	7
Disaster Relief	0.3024	0.21695	8
Environmental Product Stewardship	0.1554	0.09833	13
Green Chemistry	0.024	0.04812	16
Waste Management	0.3021	0.14324	9
GRI Disclosure	0.068	0.21503	15
GHG Emissions	0.262	0.33336	10
Environment Audit	0.001	0.00316	18
Environmental Financial	0	0	19
Awards	0.0311	0.07097	17
ISO 14001	0.426	0.23028	6

Source: Developed by Author

It is followed by the theme named water conservation with an average disclosure score of 53% which includes water recycling, waste water management, etc. Environment, Health & Safety scored fourth rank with an average disclosure score of 45%. It specifies that 45% companies out of 180 manufacturing companies disclose under the category of EHS. ISO 14001 certification has average score of 42%. It is international certification which depicts that companies carrying this certification disclose maximum about their environment management. Only 42% companies out of 180 Indian manufacturing companies have got this certification and have placed it on their

respective websites. Only 38% manufacturing companies have disclosed about their effluent treatment plants. Themes named Environmental audit, Environmental Financial are least disclosed themes.

Table No. 6: Industry wise Environmental Disclosure through Descriptive Analysis

Industries	Mean	Standard Deviation	Rank
Fertilizers	0.2584	0.26596	6
Paint	0.2863	0.30651	4
Automobiles	0.1895	0.21981	9
Auto ancillaries	0.1968	0.20648	8
Petrochemicals	0.17	0.33770	10
Starch	0.3579	0.33770	2
Rubber	0.2563	0.26317	7
Refineries	0.5168	0.34635	1
Sugar	0.2774	0.26639	5
Pesticides	0.3158	0.28188	3

Source: Developed by Author using SPSS

Table No. 6 states that maximum disclosure regarding environmental reporting has been made by Refineries industry followed by Starch & Pesticides. Auto ancillaries, Automobiles and Petrochemicals have made least disclosure on their respective websites regarding environmental disclosure. Companies of refineries industry have disclosed at its maximum within the 19 environmental disclosure themes on their corporate websites. Maximum disclosure has been done through sustainability report which includes each and every aspect of the environment disclosure. More over companies of refinery industry have got certification of ISO 14001. The certification from external agency regarding environment management decreases the agency cost of the companies. Companies getting this certification disclose about environmental reporting at its maximum. Companies of the starch industry have disclosed up to 35% followed by companies of Pesticides industry with disclosure of 31.58%. Companies of Auto ancillaries, Auto mobiles and petro chemicals have disclosed at its least with 17%, 18% and 20% disclosure on their respective websites.

5. Conclusion

The extent of the environmental disclosure practices on their corporate websites of 180 manufacturing companies of 10 different industries listed on BSE was conducted through content analysis. Companies covered under the refineries industries have disclosed at its maximum, followed by paint industries, fertilizers, starch, pesticides automobile and rubber. Minimum disclosure has

been made by petrochemical companies and auto ancillaries. Content and extent of environmental disclosure has been analysed through range of sentences used in the disclosure in the websites of the companies. 30 companies have disclosed in below 20 sentences. Only 22 companies have disclosed above 80 sentences. 102 companies have disclosed in the range of 20-60 sentences. Maximum disclosure has been done through standalone annual reports in the websites. Separate web pages are also being used to disclose environmental information. Corporate social responsibility reports have also been used to disclose environmental information. Few of the companies have disclosed through sustainability reports and very few have shown this information on the home page only. Environmental reporting practices are still not mandatory in India. Reporting of environmental disclosure on the websites of the manufacturing companies is not still very encouraging as many companies do not disclose in more than 10 sentences on their respective websites. Environmental disclosure is a voluntary disclosure and needs a follow up from the legal authorities to make this disclosure mandatory. Financial incentives should be given to the companies which are disclosing the environmental reports especially on the websites of the companies. Websites are the easiest way to approach any company. Therefore with the efforts of the authoritative bodies it is eventually expected that more and more companies should report their social and environmental disclosure on their websites to make them easily available to their stakeholders.

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