

**COMPANY CHARACTERISTICS INFLUENCING WEB- BASED ENVIRONMENT DISCLOSURE- AN EMPIRICAL ANALYSIS OF SELECTED INDIAN MANUFACTURING COMPANIES**

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**ABSTRACT**

The basic purpose of this paper is to determine the effect of company characteristics on environmental disclosure on the websites of the selected manufacturing companies listed on BSE for the financial years 2011-12 to 2015-16. The sample consists of 61 companies of different manufacturing industries. The relationship between company characteristics and the environmental disclosure on the websites has been investigated by multiple regression technique. The results of the study specify that characteristics like age of the company, size of the company and leverage are statistically significant and are positively associated with the environmental disclosure on the websites by the manufacturing companies. On the contrary, ISO 14001 certification, profitability and industry type are statistically insignificant and do not influence the web environmental disclosure by the companies.

**Keywords:** Environmental disclosure, BSE listed companies, Websites, Manufacturing Companies

**INTRODUCTION**

These days, reporting by the companies is not a relaxing task as there are never-ending new regulations and requirements. Moreover, stakeholders and the potential investors strongly demand to have transparency in both mandatory and voluntary disclosures which portray company's health and future prospects. Therefore, companies have big pressure to disclose non-financial aspects which help the investors to judge the performance of the companies in a better manner. The dynamic changes in reporting practices and the increased responsiveness of the investors are pressurising the companies to report through internet because hard copies are no longer good enough. These days, companies have to carefully manage their entire reporting

process, and this is particularly true when it comes to reporting online. Through online media, bad press or negative market reactions can go viral in a second. Internet is extensively used for reporting these days, thereby helping the companies to arrange the reports to its scattered stakeholders in this globalized economy. It is more efficient and cost effective way of transmitting information better than traditional method of print media. A company these days is much more concerned to bring transparency in information disclosure, which is needed to attract investors and also helps in improvement of companies' reputation among various investors and concerned financial institutions. World Wide Web has been used as a medium of broadcasting web- based reporting. Web technologies are being used comprehensively by the companies all around the world. It has promoted the broadcast of financial information by these companies on their websites. Previous literature has shown a number of reasons that why both financial and non-financial information are disseminated by the companies on their respective websites. The reports on annual or quarterly basis cannot converse the important advancements in time to encounter the market needs. The dynamic and ever changing business environment is forcing the companies to frame such plans that assist these companies to get modest benefits for themselves. In the vibrant business world, paper- less corporate reporting is eminent source of communication as compared to paper- based corporate reporting. The manufacturing companies all over the globe are the consumers of the natural resources and therefore they should have more responsibilities towards the environment and its management. This cannot be called the development of the economy as it causes damage to the environment. Companies are somehow responsible for the environmental degradation therefore they have to play an important role in determining the challenges regarding environment. Environmental disclosure by the corporates is the need of the hour as its requisite complies with the public opinion and the mandatory requirements. The web based reports are available through internet connections anytime and at any place. The prominence of these reports can be enhanced through hyperlinks from other companies. Websites provide current data and it becomes easy to get new and relevant information through websites as it takes much lesser time to upload the information on the website than to publish its hard-core reports. Websites provide the users the ability to arrange the reports according to their needs. Websites can receive high response rates as feedback in much more easily through websites. E-publishing reduces the ink, energy and paper and more over avoids the wastage as it restricts to get print of hard-copies. It is also over comes the restrictions of large sized paper reports. Large quantity of information is more available through websites.

### **MAIN OBJECTIVES OF THE STUDY**

Following are the main objectives of the study:

- To investigate the significant relationship between company size and web-based environmental practices of selected Indian manufacturing companies listed on BSE
- To investigate the significant relationship between profitability and web-based environmental practices of selected Indian manufacturing companies listed on BSE
- To investigate the significant relationship between the age of the company and web-based environmental practices of selected Indian manufacturing companies listed on BSE
- To investigate the significant relationship between the of the leverage company and the web-based environmental disclosure practices of selected Indian manufacturing companies listed on BSE
- To investigate the significant relationship between the Industry type of the company and the web- based environmental disclosure practices of selected Indian manufacturing companies listed on BSE
- To investigate the significant relationship between the ISO 140001 certification of the company and the web-based environmental disclosure practices of selected Indian manufacturing companies listed on BSE

## **REVIEW OF LITERATURE**

There are studies in the literature having empirical evidences regarding the impact of company's characteristics on environmental disclosure by the companies in their websites.

**Phahuja (2005)** analyzed the influence of companies' characteristics on the environmental disclosure practices of the Indian manufacturing companies. Index was prepared for the disclosure about environment taking information of 23 themes. The outlook of the accounting professionals was taken into consideration about the importance of environmental disclosure information. Index was framed regarding the disclosure of environmental information taking three-year annual reports of 91 companies of manufacturing sector. Environmental disclosure score percentages were calculated and ten (10) selected variables were studied through multiple regression technique. Results revealed that size, profitability, industry had a significant association environmental performance. The research has proposed another area to be studied as if environmental reporting practices on websites of the companies should have been studied.

**Zhang et. Al (2007)** explored the usage of internet environmental reporting by the companies in China. The activities have been growing increasingly and Chinese companies have been adopting web specific reporting for environmental disclosure. There are no generally accepted principles for voluntary disclosures in the country.

**Broberg, et. al (2009)** investigated web-based social disclosure regarding its content and extent. The findings of the study revealed significant positive relationship between profitability, size and web-based environmental disclosure of the sampled companies.

**Joshi, et. al (2011)** investigated the factors influencing environmental disclosure of 45 sampled manufacturing companies on their respective websites and annual reports. Positive relationship was there between industry type and total assets with that of environmental disclosure index. It was concluded that highly polluted companies with large size have high level of disclosure. Profitability and leverage of the sampled companies did not have positive relationship with environmental disclosure index.

**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.

**Uwalomwa Uwuiigle (2012)** explored the utilization of the internet to communicate the information of corporates regarding environmental disclosure of 30 listed financial and non-financial companies. Content analysis was applied on the data collected from the websites of the sampled companies. The relationship between the financial performance of the companies and level of corporate environmental disclosure was examined through regression analysis. Results revealed that there was no such significant difference between the level of corporate environmental disclosure through websites between financial and non-financial companies listed in Nigerian Stock Exchange.

**Othman & Akrouf (2013)** investigated the elements and factors of the environmental disclosure in Arab Middle eastern and North African (MENA) companies. 153 websites of the listed companies were studied to check the factors influencing environmental disclosure on companies' websites. The results of the study revealed that there was a negative but significant relationship between the family ownership and the environmental disclosure. One new variable named 'country's Internet Penetration' was explored which was expected to influence the environmental disclosure.

**Akbas (2014)** studied the association between company characteristics and extent of environmental disclosure information of Turkian BIST-100 listed companies. Annual reports for the year ending 2011 were analysed through content analysis. Based upon the previous literature, (5) five company characteristics (size, leverage, profitability, age, industry type) were taken into consideration as independent variables that influenced environmental disclosure of the

companies. Analysis revealed that there was a positive relationship between environmental disclosure and membership of industry whereas; there was a negative association with profitability. No noteworthy association was there between environmental disclosure and two company characteristics i.e. age and leverage.

**Le Ngoe (2014)** assessed the level of corporate environmental disclosure by the companies in their annual reports and companies listed in Ho Chi Minh Stock exchange in their annual reports and web sites from (2012-14) listed in Vietnam. The sample was a mix of both sensitive and non-sensitive companies. Descriptive analysis was performed to investigate the extent of the disclosure and more over context analysis was also employed. T-test was applied to check the similarity of corporate environmental disclosures scores among three years and differences caused by industry type & company size with that of (EDI) scores. The results of the study specified that Vietnam companies disclosed very less on corporate web sites and annual reports regarding environmental disclosure. Sensitive companies provided more of the information about environmental disclosure as compared to non-sensitive companies. Sizes of the company do have positive & significant impact on corporate environmental disclosure.

**Omar Juhmani (2014)** studied the level of environmental and social disclosure practices in websites of companies on Bahrain Bourse. He also investigated the impact of company's characteristics like size of the firm, profitability, leverage, age of the company, size of the audit firm and the level environmental information disclosures under the theory of legitimacy. Content analysis was applied to study the influence of company characteristics on the level of environmental disclosure practices. Descriptive analysis and multiple regressions analysis were applied and findings specified that 57.57% of the sampled listed companies provide the information about environmental and social disclosure in their websites and annual reports. Maximum disclosure was made by banks and insurance companies and least was made by hotel and tourism sector & industrial sector. Multiple regression specified that audit firm's size and leverage had significant relationship with the level of disclosure on the websites.

**Chaklader & Gulati (2015)** studied the environmental disclosure practices of the Indian companies and their impact of the variables like size of the companies, profitability, type of industry, leverage, multinational status and environmental certification. These are independent variables and its impact was studied with the dependent variable is environmental disclosure index (EDI). Year-wise pooled regression model was constructed for the period of four years at a significance level of 1 percent. Size of the company and environmental certification were having positive association. Further study revealed that large-sized companies and the companies having environmental certification from external agencies disclose more information regarding environmental disclosure. The certifications for the environment by the external agencies do

reduce the agency cost of the companies because it reduces the monitoring costs of the companies for their voluntary disclosure objectives set by the external authorities. No other variable was found to be significant.

**Onwchekwa, Dibia (2015)** empirically explored the factors of environmental disclosure used by 15 oil and gas companies of Nigeria in their annual reports for the financial years 2008 to 2011. The company characteristics were: size of the firm, profitability, leverage and audit firm type. Multiple regression technique was applied to analyse the data. No significant relationship was found between environmental disclosure and company characteristics named profitability, leverage and audit type.

**Bello et. al. (2016)** observed the importance of internet as medium of information for the stakeholders had increasingly gained the grounds. Top most corporate web-sites of the Nigerian firms were used as data source and regression analysis indicated that size of the firm and industry type are the significant determinants of web disclosures. There were other traits such as ownership dispersions and financial performance which did not have significant impact on the extent of internet disclosures.

**Bhuiyan et. Al (2017)** analyzed the extent of environmental reporting practices of manufacturing companies listed in Dhaka Stock Exchange (DSE). The sample size was 30 companies. The study went through two step process. The environmental disclosure index was framed and scoring of the disclosure items was done. Descriptive analysis, OLS regression model and correlation analysis was used for analysis. The study revealed that there are many factors which affect the extent of environmental reporting practices. The results have discovered that total assets, gross revenue & EPS have a positive relationship with the extent of environmental reporting practices whereas age has a negative relationship with the extent of environmental disclosure in the annual report.

## **ENVIRONMENTAL PERFORMANCE DETERMINANTS**

**Corporate size:** The size of the company is an independent variable which is used to explain the disclosure variations of the company. One of the benchmarks to indicate that company is big or small is the volume of its total assets. Company having good volume of total assets indicate that the company has reached at a mature stage with positive cash flows and having good projection for a relative longer period of time. It also assures the stability of the company and it assures that company is able to generate more profits than the companies, having small amount of total assets. The legitimacy theory provides that large sized companies with high societal existence have high reputation and more involvement of social responsibility than the smaller firms. Previous studies have mixed results regarding the association between environmental disclosure

and the size of the firm. Some of the studies like Bhuiyan (2017), Onwehekwa (2015), Omar Juhmanni (2014), Akbas (2014), Bello (2014), Le Ngoe (2014), Omar Jumani (2014), Broberg (2009) have found a noteworthy association between them, whereas Saptono (2016) did not finding such relationship.

**Industry Type:** An organization in which raw material is processed into semi-finished goods is called an industry. Type of industry is categorized into two aspects i.e. high-profile companies and low-profile companies. Companies having high sensitivity towards environment are called high profile companies and the companies with low sensitivity towards environment are called low profile companies. Ministry of Environmental & Forests, Government of India has classified the manufacturing industries under three categories i.e. Green, Orange and Red. In the present study, industry type has been categorized as red and green categories. The manufacturing companies that discharge industrial effluents of polluting nature are categorized as red category and the manufacturing companies that do not discharge industrial effluents of polluting nature are categorized as green category.

**Profitability:** Profitability is one of the main objectives of the organization as it is desirable to increase the overall wealth of the organisation as well as the shareholders. It is one of the financial indicators of the healthy performance of the organization. It is measured through various indicators. The present study measures the profitability through Return on Equity. Profitability is associated with the agency theory as managers of the company (agents) are to earn profits for the principles (shareholders). The companies with high profitability are to disclose more about social and environmental disclosure as compared to the companies having low profitability. It enhances the goodwill of the company amongst the shareholders and the potential investors. The previous literature has mixed results for the relationship between profitability and the environmental disclosure practices on the websites of the companies. The studies such as Phahuja (2005), Broberg (2009) have noteworthy relationship between profitability and the environmental disclosure information on the websites and there are few studies such as Joshi (2011), Akbas (2014), Bello (2016) do not find any such relationship.

**Age:** Age is also considered as one of the essential factor of the company which can have impact on social and environmental disclosure of the company concerned. Age portrays stability. As company matures, it starts taking interest in such activities which are voluntary in nature such as protection of environment and surroundings which may improve the credibility of the company in the long run. Older companies have to communicate more with the outer world than the new companies. As the companies grow older, its societal existence increase and those companies may have more legitimacy than the younger companies. In the previous studies such as Phahuja (2005), Broberg (2009), Joshi (2011), Akbas (20014) this factor has insignificant relationship in

relation to company's environmental disclosure. This illustrates that it is not necessary for the companies which are older in age to be aggressive in environmental disclosure practices in their websites as compared to the younger ones.

**Leverage:** Leverage is somehow a vital characteristic that could influence the social and environmental disclosure. There is no such previous study in the literature which can concisely describe the significant relationship of this factor with the environmental disclosure practices. But it has been argued that the stakeholders of the companies with high leverage can demand high disclosure both financial and environmental as it reduces companies' agency costs. On the contrary, the companies with low leverage may have sufficient funds for financing their social and environmental disclosures. There are few previous studies such as Omar Juhmani (2014) which do reveal significant relationship between leverage of the company and the environmental disclosure in the websites of the companies.

**ISO 14001 certification:** ISO 14001 is a standard which focuses on environmental management of the companies to achieve this standard. It is one of the standards from the family of ISO 14000. It is a practical tool for the companies to make them aware about their environmental responsibilities. It was introduced in 2004. If any company has been certified by this standard, it is an assurance by its management, employees as well as its stakeholders that impact of environment has been measured and improved. Only 138 companies in India have got this certification.

## **THEORETICAL FRAMEWORK & HYPOTHESES DEVELOPMENT**

**Theoretical framework:** There are number of theories that explain the vital reasons why companies disclose voluntarily the environmental information to the outside parties. The most popular theories which explain the content and level of environmental disclosure information are agency theory and legitimacy theory. Although these theories are employed to investigate the conventional paper-based voluntary disclosure but these can be used to explain the web based voluntary disclosure. Legitimacy theory is one of the prominent theories to explain the environmental information by the companies. In comparison to agency theory, legitimacy theory offers an inclusive perception on company's social disclosure as it manifestly makes out that companies are bound by their social agreement in which they agree to accomplish their disclosure practices. It is based on two essential ideas: companies need to be legitimizing their accomplishments and the process of the theory conveys the benefits of this theory to the companies. The need of legitimacy theory is not the same for all the companies because degree of social pressure to which a particular company is exposed to be different from company to company even within the same sector. Companies have to comply with the rules and regulations of the society by legitimating their activities. Agency theory explains the relationship between



the management (agents) and the shareholders (principle) of the company. The agency costs most of the times incur because of the information asymmetry. Managers should increase the level of voluntary disclosure to assure the stakeholders against such information asymmetry.

**Hypotheses Development:** Company characteristics like size, leverage, profitability, industry type, ISO 14001 Certification and age influence the corporate environmental disclosure practices on their respective websites. Each of these characteristics are to be discussed in terms of hypothesis in terms of their relation with the extent of environmental disclosure in the websites of companies are proposed below:

**Impact of size:** Relationship between company size and the extent of environmental disclosure have been measured by number of previous studies such as (Bhuiyan (2017), Saptono (2016), Onwehekwa (2015), Akbas (2014), Bello (2014), Le Ngoe (2014), Omar Jumani (2014), Broberg (2009) and the results of these various studies are mixed. It has been considered as an important company's characteristic which has an impact on the environmental disclosure on the websites of the companies.

**H0:** There is significant relationship between company size and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between company size and the extent of the environmental disclosure on websites.

**Impact of Profitability:** It has been considered as an important factor which influences the social and environmental disclosure practices of the company. The previous literature has mixed results for the relationship between profitability and the environmental disclosure practices on the websites of the companies. The studies such as Phahuja (2005), Broberg (2009) have noteworthy relationship between profitability and the environmental disclosure information on the websites and there are few studies such as Joshi (2011), Akbas (2014), Bello (2016) do not find any such relationship.

**H0:** There is significant relationship between company's profitability and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between company's profitability and the extent of the environmental disclosure on websites.

**Impact of Age:** Association between the age of the company and the extent of environmental disclosure has been studied in the literature (Bhuiyan (2017), Saptono (2016), Onwehekwa (2015), Akbas (2014), Bello (2014), Le Ngoe (2014), Omar Jumani (2014), Broberg (2009) and

the results revealed mixed responses. It is a noteworthy characteristic and has an impact on the environmental disclosure on the websites of the companies.

**H0:** There is significant relationship between age of the company and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between age of the company and the extent of the environmental disclosure on websites

**Impact of leverage:** Leverage being a significant characteristic, has an influence on the company's environmental disclosure on the websites of the companies. Relationship between leverage and the extent of company's environmental disclosure has been studied by number of previous studies (Bhuiyan (2017), Saptono (2016), Onwehekwa (2015), Akbas (2014), Bello (2014), Le Ngoe (2014), Omar Jumani (2014), Broberg (2009) and there are mixed results of studies.

**H0:** There is significant relationship between company's leverage and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between company's leverage and the extent of the environmental disclosure on websites.

**Impact of Industry Type:** Industry type is a dummy variable and this independent variable has been used by different countries in different studies. Association between the industry type and the extent of environmental disclosure has been studied in previous literature Saptono (2016) and has mixed results.

**H0:** There is significant relationship between Industry type and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between Industry type and the extent of the environmental disclosure on websites.

**Impact of ISO 14001 certification:** ISO 14001 is a standard which focus on environmental management. Company with this certification implies that it assures its environmental management.

**H0:** There is significant relationship between company's ISO 14001 Certification and the extent of the environmental disclosure on websites.

**H1:** There is insignificant relationship between company's ISO 14001 Certification and the extent of the environmental disclosure on websites.

### **DATA COLLECTION AND RESEARCH METHODOLOGY**

The sample consists of 80 manufacturing companies from selected manufacturing industries (Paint, Starch, Fertilizers, Petrochemicals, Automobiles, Refineries and Rubber) listed on BSE. Environmental disclosure index has been prepared through analysing the themes named ( Environment, Water, Employee Health & Safety, Research & Development, Environmental Policy, Energy, Emissions, Effluents & Wastes, Biodiversity, Environmental Pollution, Waste Management, Green Chemistry, GRI Disclosure, Disaster Relief, Environmental Product Stewardship, Environmental Audit, Environmental Financial, Awards, GHG Emissions) from the websites of the sampled companies. The time period of the study is from financial year 2011-12 to 2015-16. Data for the variables such as total assets, Return on Equity, Debt equity ratio of the sampled companies for the relevant financial years has been take from the database named Capital line.

**Table No. 1: Sample Distribution**

<b>S. No</b>	<b>Name of the Manufacturing Industry</b>	<b>Number of companies</b>
1.	Paint	8
2.	Petrochemicals	13
3.	Automobiles	8
4.	Refineries	8
5.	Starch	6
6.	Fertilizers	18
7.	Rubber	19
	Total	80

### **Research Methodology:**

The web-based disclosure index is developed on the basis of selective themes. The significant relationship between the company characteristics and the Environmental Disclosure Index score will be examined through multiple regression technique. IBM SPSS Statistics 22 has been used to apply multiple regression technique.

**Regression Model:**

$$\text{Env. Dis.} = \beta_0 + \beta_1 \text{Size} + \beta_2 \text{Profits} + \beta_3 \text{Age} + \beta_4 \text{FinLev} + \beta_5 \text{Ind} + \beta_6 \text{ISO}$$

Whereas, Env. Dis. = Environmental Disclosure

Size = Size of the Companies for the respective years according to log of total assets

Profits = Profits of the Company for the respective years according to Return on Equity

Age = Age of the Companies

Financial Leverage = Leverage of the companies according to Debt-Equity ratio

Ind = Industry Type

ISO = ISO 14001 certification

**Measurement of variables:**

Environmental disclosure index score is the dependent variable and six independent variables (Size of the company, Age of the company, profitability, leverage, Industry type and ISO 14001 certification) will be examined. The influence of these independent variables on Environmental disclosure Index score will be empirically investigated through relevant statistical techniques.

**Dependent variable:**

An index of environmental disclosure containing items based on the information disclosed in the websites of Indian manufacturing companies was framed. Every item of the disclosures index was given equal weight and for calculating company wise disclosure. A score-shift for all the given items in the disclosure index was prepared. Item wise score calculations of all the items in the score sheet for all the companies were added.

**Independent variables:**

- Size of the company was measured as log of total assets of the company concerned.
- Age of the company was calculated from the date of incorporation up to the financial years for which analysis was done. Then to minimize the variations in the age of different companies, log 10 of age was taken.
- Profitability was measured as return on Equity of the company for the concerned financial years.
- Leverage was measured as Debt- Equity ratio for the concerned financial years.
- Industry type is a dummy variable. It is 1 for the companies covered under Red category and 0 for the companies covered under Green categories.

- ISO 14001 is a standard for Environment Management System. It is 1 for the companies which are carrying this certificate and 0 for the companies which do not carry that certificate.

**RESULTS**

All the selected sampled companies provide the environmental disclosure information on their respective websites. Fourteen themes were selected to categorize the environmental disclosure information. To investigate the significant relationship between the company characteristics and the environmental disclosure on the websites of the sampled companies, multiple regression technique was applied. Overall model of multiple regression is significant as indicated by p-value for ANNOVA (0.000) as shown in table no 2.

**Table No. 2: ANNOVA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.535 <sup>a</sup>	.287	.276	.15698
a. Predictors: (Constant), ISO, Age, ROE, Industry, Assets, debt				
b. Dependent Variable: EDI				

**Table No. 3: Model Summary**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.890	6	.648	26.305	.000
Residual	9.685	393	.025		
Total	13.575	399			

a. Dependent Variable: EDI

b. Predictors: (Constant), IND, Assets, ROE, Age, ISO, Debt

Table 3 explained the model summary of the multiple regression analysis. R- square indicates the variations of dependent value explained by all independent variables that is 28.7 %.

**Table no. 4: Multiple Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.038	.060		-.628	.530
	ISO	.026	.021	.059	1.271	.205
	Age	.178	.032	.242	5.519	.000
	Assets	.067	.007	.446	9.346	.000
	Debt	-.013	.006	-.113	-2.336	.020
	ROE	-.047	.034	-.064	-1.369	.172
	IND	-.002	.031	-.003	-.075	.940

a. Dependent Variable: EDI

Table 4 revealed the results of multiple regression analysis. The size of the company statistically significant and has positive relation ( $p= 0.000$ ) with the extent of environmental disclosure index on the websites of the companies. Therefore alternate hypothesis is accepted. The result there by support the first hypothesis empirically that companies which are large in size disclose more in their websites regarding social and environmental practices followed by them than the smaller ones. Similarly, age of the company is statistically significant and has positive relation ( $p= 0.000$ ) with the extent of environmental disclosure index on the websites of the companies. It portrays that older companies disclose more in their websites than the younger ones. One of significant independent variable leverage is having p-value ( $p=0.020$ ) which reveals that leverage is statistically significant independent variable. The companies with high debt- equity ratio disclose more about their environmental information in their websites. The companies with low leverage do not disclose their social and environmental information in their websites. The p-value for these variables is less than alpha ( $\alpha=0.05$ ) there by accepting alternate hypotheses. ISO 14001 certification, one of the independent variables, has statistically insignificant relationship ( $p=0.205$ ) with the extent of environmental disclosure index on the websites of the companies. It indicates that companies irrespective of having certification of this standard or not disclose in their websites. The p-value for profitability is ( $p= 0.172$ ) which is more than alpha i.e. ( $\alpha=0.05$ ) indicating that the extent of environmental disclosure in the websites of the company do not have statistically significant relationship with the financial performance of the companies. Profitability does not affect the web environmental disclosure practices of the companies. Therefore ( $H_0$ ) is accepted. Industry type is another independent variable with p-value ( $p=0.940$ ). It is a dummy variable having statistically insignificant relationship with web environmental disclosure by the companies. Companies do disclose about social and environmental information irrespective of their category i.e., whether it is red category or green category.

## **FINDINGS AND SUGGESTIONS**

Social and environmental disclosure is a voluntary disclosure. Relationship between the selected manufacturing companies' characteristics such as (age, size of the company, profitability, Industry type, leverage and ISO 14001 certification) and the extent of environmental disclosure of these companies was empirically tested through multiple regression model. Companies which constitute the sample are listed on BSE. The environmental disclosure index has been used to measure the extent of environmental disclosure. Environmental disclosure index has been prepared through analysing the themes named (Environment, Water, Employee Health & Safety, Research & Development, Environmental Policy, Energy, Emissions, Effluents & Wastes, Biodiversity, Environmental Pollution, Waste Management, Green Chemistry, GRI Disclosure, Disaster Relief, Environmental Product Stewardship, Environmental Audit, Environmental Financial, Awards, GHG Emissions) from the websites of the sampled companies.

The findings of the study reveal that factors like age, size of the company and leverage are highly significant and have a positive relationship with Environmental Disclosure Index (EDI) score.

The results of the regression model analysis reveal empirical proof that there is a positive and significant relationship between the age of the company and EDI score. This result has been supported by the previous studies that companies with more age disclose more than the companies with lesser age. Further, the results of the analysis had empirical evidence that size of the companies and their EDI score has a positive association and this result has a consistency with the previous studies that companies with larger size disclose more on their websites as compared to the companies with small size, thereby increasing their legitimacy. The companies with larger size are under pressure to reveal more to the public regarding their voluntary disclosures. Further, the results have noteworthy relationship of leverage of the companies with their respective EDI score. It is positive and significant statistically which reveals that when companies are highly dependent on debt they have to disclose more about their social and environmental information to satisfy the expectations of the creditors.

The regression results have revealed statistically insignificant relationship of the firm's characteristics named profitability, Industry type and ISO 14001 with EDI score of BSE listed Indian manufacturing companies. One of the explanations of negative relationship with profitability is that the companies with high profitability do have better amenability with the rules and regulations regarding the environment of that very country in which these companies prevail and they do have lesser difficulties regarding the environmental issues.

The results do have negative as well as insignificant relationship with industry type i.e., it does not make difference that company is more or less sensitive towards environment. The companies

need to disclose irrespective of their sensitivity towards environment as there are many other factors which do affect their environmental disclosure information in their respective websites.

## **CONCLUSION**

Environmental disclosure on the websites is a voluntary disclosure. It has not yet any specific regulations regarding the content and extent of the disclosure. Study supports the legitimacy theory as companies are to disclose about their social and environmental information because of their reputation. Now days, stakeholders as well as potential investors are interested to know about both financial and non-financial information about the companies. Environment is a burning issue so they are keen to get information regarding effluents, Energy, ISO certification. Manufacturing sector in India is an aggressive sector and moreover there are manufacturing industries which disclose about their social and environmental information through sustainability reports irrespective of their ISO 14001 certification. The study has some limitations also. The sample of the study consists of only (7) seven industries of manufacturing sector. Only BSE listed companies were taken as sample and these companies were large companies. The results may vary from small companies. Despite of these limitations, study has contributed to the related literature and has left a scope of further research to indulge internal factors such as corporate culture, organization's structure etc. which could influence the content and extent of the environmental disclosure in the websites of the companies.

## **REFERENCES**

1. Halil Emre Akbas (2014), "Company Characteristics and Environmental Disclosure: An Empirical Investigation on companies listed on Borsa Istanbul 100 index", The Journal of accounting and finance, April (2014)
2. Uwalomwa Uwuiigle (2012), "Web-based corporate Environmental Reporting in Nigeria: A study of listed companies", Information Economics Vol. 16, No. 3/2012
3. Mo. Hafij Ullah, Mo. Musharf Hossain & K.M. Yakub (2014), "Environmental Disclosure Practices in Annual Report of the Listed Textile Industries in Bangladesh", Global Journal of Management and Business Research: D Accounting and Auditing Volume 14 Issue 1 version 1.0 year 2014
4. Titanxi Zhang, Simon S. Gao, jane J. Zhang (2007), "Corporate Environmental Reporting on the web- An exploratory study of Chinese listed companies", Issue in social and Environmental Accounting (Vol., No. 1, June 2007 ) pp: 91-108
5. Le Ngoc My Hang (2014), "An Evolution of Corporate Environmental Disclosures by Vietnamese Listed firms"



6. Dr. Prem Lal Joshi, Dr. Mishiel Said Suwaidan & Dr Rajesh Kumar (2011), "Determinants of Environmental Disclosures by Indian Industrial Listed companies in their websites: An Empirical Study", *International journal of Accounting and Finance- Inderscience Publication*, Volume 3, No. 2, Page 109-130
7. Probal Dutta & Sudipta Bose (2007), "Web-based Corporate Reporting in Bangladesh- An Exploratory study", *The Cost & Managements* ISSN 1817-5090 Vol 35, NO,6 Nov-Dec 2007 pp: 29-45
8. Suchi Pahuja (2005), "Relationship between environmental disclosures and corporate Characteristics: A study of large manufacturing companies in India", *Emerald in sight, Social Responsibility Journal* ISSN: 1747-1117, Vol.5 Issue: 2, pp227-244
9. Muttanachai Suttipun, Patricia Stanton (2012), "A study of Environmental Disclosures by Thai listed companies on websites", *Science Direct, Journal Elsevier, Proceedia Economics and Finance* 2 (2012) 9-15
10. Torbjorn Tagesson, Veronica Balank, Pernilla Broberg (2009), "What explain the extent and context of social and environmental disclosure on corporate websites: a study of social and environmental reporting in Swedish listed Corporations", *Journal Corporate Social Responsibility and Environmental Management*
11. Omar Juhmani (2014), "Determinants of Corporate Social and Environmental Disclosure on Websites: the Case of Bahrain", *Universal Journal of Accounting and Finance* Vol. 2(4), pp. 77 - 87
12. Tianxi Zang, Sunon S. Gao & Jane J. Zang (2007), "Corporate Environemntal Reporting on web- An Exploratory study of Chinese listed Companies", *Issues in Social and Environmental Accounting* Volume 1, No. 1, June 2007, Pp 91-108
13. Omar Jumani (2014), "Determinants of Corporate Social and Environmental disclosure on Websites: the case of BAhrain", *Universal Journal of Accounting and Finance* 2 (4): 77-87
14. Heni Nurani Harti kayanti, M. Ryan Trisyardi, E R Budhi Saptono (2016), "Effect of Corporate characteristics on Environmental Disclosure", *IJABER*, Volume 14, No.10 Pp : 6111- 6134
15. Nudukwe O. Didia, John Chika Onwchekwa (2015), "Determinants of Environmental Disclosures in Nigeria : A case study of Oil & gas Companies", *International Journal of Finance and Accounting* ISSN : 2168-4812 e- ISSN : 2168-4820
16. Md. Nazim Uddian Bhuiyan, S.M. Khalid Hossian & Fatima Akther (2017), "Environmental Reporting Practices and its relationship with Corporate Characteristics: An Evidence from Manufacturing Companies listed in Dhaka Stock Exchange (DSE)", [www.researchgate.net/publication 315111472](http://www.researchgate.net/publication/315111472)
17. Bello Ayuba, Victor Chiedu Oba (2016), "Firms Traits and Web Based disclosure in Top Nigeria Firms", *Economica*

18. Mejda Mahmoudi Akrouf & Hakim Ben Othman (2013), "A study of the determinants of Corporate Environmental Disclosure in MENA Emerging Markets", *Journal of Reviews on Global Economics*, Pp: 46-59
19. Barnali Chaklader & Puja Aggarwal Gulati (2015), "A study of Corporate Environmental Disclosure practices of Companies doing business in India", *Global Business Review*
20. Capital line Database
21. Ministry of Environment and Forests (Department of Environment, Forests and Wildlife)