CHAPTER 3
DATA BASE AND RESEARCH METHODOLOGY

This chapter discusses the universe of the study, sample selection, techniques of data collection, statistical tools used in the analysis of data, hypotheses and the definitions of various variables used.

3.1 UNIVERSE AND SAMPLE OF THE STUDY

The universe of study comprises of the largest companies from developing (BRIC nations) and developed1 (US & UK) countries taken from their respective indices i.e. BOVESPA index, 50 companies (Brazil); RTS index, 50 companies (Russia); SENSEX, 30 companies (India); SSE 50, 50 companies (China); FTSE 100, 100 companies (UK) and NASDAQ 100, 100 companies & Amex major market index, 20 companies (US). These indices are from the top 20 Major stock exchanges ranked on the basis of market capitalization as of 31 January 2015 (Monthly reports, World Federation of Exchanges). They are also representative of the various sectors forming the whole economy. It is also believed that the expectations of societies tend to be much more and they are supposed to fulfill such expectations. The following filters are applied to select the sample:

- The companies whose sustainability reports are not available for the years 2006-2007 to 2010-2011 are not considered.
- The companies whose sustainability reports are only in their native language (not in English) are eliminated because English is considered as the language of international business. Using a common language for analysis eliminates the translation bias (Alon et al., 2010).

As a result of these filters, the actual sample size turned out to be, Brazil-BOVESPA index, 39 companies; Russia- RTS index, 21 companies; India- SENSEX, 17 companies; China- SSE 50, 19 companies; US- NASDAQ 100 and Amex major market index, 58 companies and UK- FTSE100, 78 companies. (see Appendix II)

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1 A country is classified to be a developed or developing country on the basis of its gross domestic product (GDP), per capita income, stage of industrialization, general standard of living and the amount of extensive infrastructure. Developed countries are countries in the top quartile in the HDI distribution, while those in the bottom three quartiles are developing countries (IMF, 2011)
For the purpose of studying the impact of various corporate attributes on the extent of sustainability reporting by selected Indian companies, the population size is BSE 200 companies i.e. top two hundred companies listed on the Bombay Stock Exchange. To arrive at the sample, following filters are applied -

- The companies belonging to the finance and insurance sector are eliminated. The reason being that their business activities or institutional settings are not comparable with other companies (Ruhnke and Gabriel, 2013). Moreover, they indulge in materially different types of business operations and different statutory disclosure requirements (Al-Shammari, 2008; Reverte, 2009). Also because these companies are governed by their respective statutory acts.

- The companies for which data regarding all the explanatory variables is not available are left out.

Thus, as a result of these filters, a resultant sample of 158 non-banking and non-financial companies is obtained.

Table 3.1 gives the synoptic view of the selected sample.

**Table 3.1**

**Synoptic View of the Sample of the Study**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Economy</th>
<th>Country Name</th>
<th>Index</th>
<th>Sample</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of developing and developed countries</td>
<td>Developing</td>
<td>Brazil</td>
<td>Bovespa index</td>
<td>39</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Russia</td>
<td>RTS index</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>India</td>
<td>SENSEX</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>China</td>
<td>SSE 50</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Developed</td>
<td>US</td>
<td>NASDAQ 100,</td>
<td>Amex major market index</td>
<td>58</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UK</td>
<td>FTSE 100</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>232</td>
</tr>
<tr>
<td>Impact of corporate attributes on sustainability reporting in India</td>
<td>India</td>
<td>BSE 200</td>
<td></td>
<td>158</td>
<td>158</td>
</tr>
</tbody>
</table>
3.2 TIME PERIOD

Sustainability reports are not published by the companies on annual basis and some companies prefer to integrate these with financial reports only (Quick, 2008). Ruhnke and Gabriel (2013) also demonstrated that there is no uniformity in publication frequency of sustainability reports. So the time frame for this study is 5 years i.e. from 2006-2007 to 2010-2011. The latest sustainability report published by the selected companies during this period would be considered for the analysis (see Ruhnke and Gabriel, 2013). The reason for selecting period between 2006 to 2011 is because 2006 was the year when G3 guidelines on Sustainability Reporting (by GRI) were provided and 2011 was the year when the study was taken up. For the purpose of studying the impact of corporate attributes on sustainability reporting the reports for the year 2010-2011 are studied.

3.3 DATA SOURCE

The primary source of data is sustainability reports. Sustainability reports are a modern concept of corporate reporting and indicate the simultaneous integration of economic, environmental & social elements (Zwersloot and Marrewizk, 2004; Quick, 2008; KPMG, 2008b). Sustainability reports capture and analyze the sustainability information in a better way (Faisal et al., 2012). However, the usefulness and credibility of a sustainability report depends on the quality and objectivity of the data and information presented in it. A sustainability report indicates that a company is committed to the process of transparency and stakeholder engagement and is not just a guarantee that a company is sustainably managing the areas most relevant to its sector (SIRAN et al., 2008).

With specific reference to India, while studying determinants of sustainability disclosure, where the analysis is restricted to 2010-11 only, annual reports have also been studied for companies which do not have separate sustainability reports for the said year. Separate sustainability reports are not provided by all companies and numerous companies prefer to provide extensive information on environmental or social issues within their annual reports. Moreover, annual reports are also extensively used by companies to communicate their sustainability information and are prepared on a regular basis. Hence, these are included in the sample.

The sustainability and annual reports of companies are obtained from their respective web sites. Corporate register database and sustainability disclosure database
are also used for gathering sustainability reports. Sustainability reporting guidelines (G3) provided by GRI have been used in the present study as these have a rich background of experimentation and have gained the status of world’s leading guidelines. G4 guidelines have also been launched in May 2013, but these are to be used by companies in reports to be published after 2015 only (Ernst and Young, 2013).

The data related to corporate specific attributes for the financial years 2010-2011 has been retrieved from PROWESS database of CMIE (Center for monitoring Indian economy). CMIE encompasses the financial information of almost seven thousand companies in the Indian corporate sector. The same has also been cross checked from the annual reports.

3.4 COLLECTION OF DATA

3.4.1 GRI Sustainability Disclosure Index

This study involves the usage of sustainability disclosure index based on the GRI framework as given by GRI’s G3 guidelines. GRI has also been acknowledged as the most preferred index (Yuan, 2007). There are three types of standardized disclosures under the GRI framework, namely, strategy and profile, the management approach and performance indicators. For this study performance indicators have been the only measure for their inclusion. Performance indicators are an integral part of the standard disclosures and form the basis of quantitative and qualitative information on economic, environmental, and social performance categories. These indicators comprise of 79 items in the disclosure index given under GRI framework and all these items have been taken for observation. A checklist of the same is given under Appendix I. These items of information have been categorized into three main categories for the purpose of analysis namely economic, environmental and social as shown in table 3.2

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Categories</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Economic</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Environmental</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Social</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td><strong>Total Items</strong></td>
<td><strong>79</strong></td>
</tr>
</tbody>
</table>
3.4.2 Content Analysis

To measure the level of sustainability disclosure for sample companies, content analysis is performed on their respective reports. Content analysis is a research technique for gathering data and it involves codifying qualitative and quantitative information into pre-defined categories in order to obtain patterns in the presentation and reporting of information (Guthrie and Abeysekera, 2006). Krippendorff (2003) defines it as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use”. It is a summarizing, quantitative analysis of messages that relies on the scientific method including attention to objectivity-intersubjectivity, a priori design, reliability, validity, generalizability, replicability and hypothesis testing and is not limited as to the types of variables that may be measured or the context in which the messages are created or presented” (Neuendorf, 2002). Content analysis as a research method has been used in studies from both developing and developed nations. Developing nations, using content analysis include Bangladesh (Belal, 2001; Shil and Pramanik, 2009; Azim et al., 2011), Malaysia (Ahmad et al., 2003; Saleh, 2009), Thailand (Ratananjongkol et al., 2006), India (Agrawal, 2003; Chatterjee & Mir, 2008; Murthy, 2008), Libya (Elmogla, 2009), Kenya (Ponnu and Okoth, 2009), China (Huang and Wang, 2010; Chang, 2013). Among developed nations, using content analysis figure Australia (Raar, 2002; Guthrie & Farneti, 2008; Elijido-Ten, 2011), Finland (Vuontisjarvi, 2006), Belgium (Thom, 2009), Portugal (Roberts and Koeplin, 2007), Switzerland (Daub, 2007), Germany (Quick, 2008), Sweden (Erlandsson and Olnder, 2009), Central Eastern and Western Eastern Europe (Steurer & Konrad, 2009) and so on. To sum up, this study resorts to the content analysis of the report of each of the sample company.

While doing content analysis, these 79 items depicting performance indicators as outlined by disclosure index are rationed a maximum score of 2 each making the total possible score of 158 (79*2). Coding is undertaken manually and focused on the analysis of the GRI content index which is necessary to be included in the sustainability report as per GRI guidelines. The scoring is done as 2: indicator fully reported; 1: indicator partially reported and 0: indicator not reported. Cases where companies stated that a
specific indicator was ‘‘not material” is taken as 0 while ‘‘not applicable’’ is considered NA and is excluded for this reason.

3.5 MEASUREMENT OF LEVEL OF SUSTAINABILITY REPORTING

The company-wise disclosure score, category-wise disclosure score and industry-wise disclosure score are calculated.

- The company-wise disclosure score has been calculated by dividing the score obtained by a particular company by the maximum score applicable to that company. The disclosure score has been calculated in percentages to make the disclosure of the companies comparable and facilitate their ranking.

- The category-wise disclosure score has been calculated for each category (economic, environmental and social), by using formula, \( \sum \) Individual category score of companies/number of companies.

- The industry-wise disclosure score has been calculated by using formula, \( \sum \) Individual company score in particular industry/number of companies in that industry. Further the industry-wise category scores is also calculated by using formula, \( \sum \) Individual company score in particular industry’s specific category/number of companies in that industry. In order to calculate industry wise disclosure score companies have been grouped into various industry groups. Since the sample for individual countries is not very large and if there are two or more companies in one industry, it is considered as a separate industry group.

3.6 STATISTICAL TOOLS USED

A number of statistical techniques have been used for the analysis of data discussed as follows:

- Descriptive Statistics- Descriptive statistics like minimum, maximum, mean, and range are calculated to describe and sum up the given data and to bring out their important features.

- One way ANOVA- ANOVA stands for analysis of variance and determines the statistical difference between three or more means. It is used to test the significant differences among at least three groups and the null hypothesis is that all means are equal (Malhotra and Dash, 2011). It requires dependent variable to be metric
and independent variable to be categorical. Here, it has been used for country-wise comparison, inter-category and inter-industry comparisons. Assumptions of normality and homogeneity of variance are also checked.

- **Normality** - Normality is based on the skewness and kurtosis values. The Skewness index examines the degree of symmetry of a distribution. If $\sqrt{\beta_1} > 0$ then it is taken as skewed to the right, and $\sqrt{\beta_1} < 0$ communicates the skewness towards left. Kurtosis index observes the flatness or the peakedness of the distribution. Hence, a distribution with $\beta_2 > 3$ will have a thicker tail than the normal distribution where as the distribution with $\beta_2 < 3$ will depict a lighter tail and a broader peak than the normal distribution. Another way is to calculate the statistical $z$ value for skewness and is calculated as $z_{\text{skewness}} = \frac{\text{skewness}}{\sqrt{SE \text{ skewness}}}$ and $z_{\text{kurtosis}} = \frac{\text{kurtosis}}{\sqrt{SE \text{ kurtosis}}}$. If the calculated $z$ value exceeds ±1.96 then this results in rejection of the assumption of normality (Ho, 2014).

- **Homogeneity of Variance** - The basic assumption of one way ANOVA is homogeneity of variance. It specifies that variances are equal across samples or groups. This is checked through Levene statistic. Levene test (Levene, 1960) is used to test whether the $k$ samples have equal variances or not. This assumption is violated if its value turns to be significant.

**Post Hoc Test:** The statistical technique of one way ANOVA just tells the researcher that there is presence of significant differences among the mean of groups. But it fails to specify which pair of groups is significantly different from each other. Here post-hoc test is essential because it helps to find which pair of groups is different.

- **Kruskal-Wallis H test** - This test aids in judging the null hypothesis that $k$ independent random samples came from similar populations (Gupta, 2006). In other words, Kruskal-Wallis H test is the non-parametric version of one way ANOVA. It examines the difference in medians and uses the rank value of each case (Malhotra and Dash, 2011). This test is used with an independent group design comprising more than two groups (Ho, 2014). It is used when the assumptions of one way ANOVA are not satisfied.
• **Independent sample t test**- This test compares the mean scores of two groups on a given variable and examines the hypotheses about means (Malhotra and Dash, 2011). Independent sample t test has been applied after satisfying the assumptions of normality and equality of variance in order to judge the significant difference between means of sustainability reporting disclosure scores of developing and developed countries.

• **Multiple Regression Analysis**- It is a statistical procedure that analyzes the associative relationships between a metric dependent variable and one or more independent variables (Malhotra and Dash, 2011). This is concerned with the nature and degree of association between variables. Regression Analysis is concerned with the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, in order to estimate the (population) mean or average value of the former in terms of the known or fixed (in repeated sampling) values of the latter (Gujarati et al., 2012). Symbolically it is written as:

\[ Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \varepsilon_i \]

where \( Y \) is the dependent variable, \( X_1, X_2 \) are the explanatory variables, \( \varepsilon \) is the stochastic disturbance term and \( i \) stands for \( i^{th} \) observation.

The following model has been applied to study the impact of corporate attributes namely size, profitability, growth, leverage, age, nationality, listing category, board size, board independence, advertising intensity and nature of industry:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11-23} X_{11-23} + \varepsilon \]

Where:

\[ Y = \text{Sustainability disclosure score} \]
\[ X_1 = \text{Size of a company (log of market capitalization)} \]
\[ X_2 = \text{Profitability of a company (ROA)} \]
\[ X_3 = \text{Growth of a company} \]
\[ X_4 = \text{Leverage of a company} \]
\[ X_5 = \text{Listing category of a firm} \]
\( X_6 = \) Age of a company
\( X_7 = \) Nationality
\( X_8 = \) Board size
\( X_9 = \) Board independence
\( X_{10} = \) Advertising intensity
\( X_{11-23} = \) Industry type

\( \beta = \) Slopes of the independent variables while \( \beta_0 \) is a constant or the value of \( Y \) when all values of \( X \) are zero
\( \varepsilon = \varepsilon_i \sim (0, N) \)

### 3.7 VARIABLES OF THE STUDY

The multiple regression analysis has been used to analyze the impact of corporate attributes on the extent of sustainability disclosure of selected companies in India for the year 2010-2011. For the purpose of above analysis, company-wise sustainability disclosure score is used as a dependent variable and various corporate attributes as independent variables. Various corporate attributes are defined as follows:

#### 3.7.1 Size of a company

Size of a company has been measured through three explanatory variables namely; net sales, total assets and market capitalization.

- Net Sales = Total sales - Sales return
- Total Assets = Net Fixed Assets + Total Current Assets
- Market Capitalization = Market Capitalization as on March 31, 2011

#### 3.7.2 Profitability of a company

Profitability of a company has been measured through three explanatory variables namely; return on assets (ROA), return on capital employed (ROCE) and return on net worth (RONW).

- ROA = \( \frac{\text{EBIT}}{\text{Total Assets}} \)
- ROCE = \( \frac{\text{PAT (net of P&E)}}{\text{Capital Employed}} \)
- RONW = \( \frac{\text{PAT (net of P&E)}}{\text{Net Worth}} \)
3.7.3 Growth of a company

Growth of a company is measured in terms of total assets.

\[
\text{Growth (Total Assets)} = \frac{\text{Total Assets 2011} - \text{Total Assets 2010}}{\text{Total Assets 2010}} \times 100
\]

3.7.4 Leverage of a company

The total Debt to total Equity ratio has been used as a proxy to measure the leverage of a company in the present study.

3.7.5 Listing category of a company

In India, the companies trading on stock exchanges are labeled as category A, B, S, T, TS and Z. In the present study the effect of listing category has been examined by inserting a dummy variable, with 1 if company falls under A category and 0 if it does not.

3.7.6 Age of company

Age of a company is measured by subtracting the incorporation year of the company from 2011.

3.7.7 Nationality of a company

Companies extending their operations multinationally i.e. own or control productions of goods or services in one or more countries other than the home country e.g. via subsidiary are labeled as multinational and those limiting their operations to only home country are labeled as domestic companies. Nationality of a company has been examined by introducing a dummy variable, with 1 if company has multinational operations and 0 otherwise.

3.7.8 Board size

Board size of a company has been obtained from the corporate governance reports by examining the total number of directors as on March 31, 2011.

3.7.9 Board independence

Board independence has been obtained from the corporate governance reports by examining the total number of independent directors present on the board as on March 31, 2011.

\[
\text{Board independence} = \frac{\text{Total number of independent directors}}{\text{Total number of directors}}
\]
3.7.10 Advertising intensity

Advertising intensity has been examined using the formula:

\[
\text{Advertising intensity} = \left( \frac{\text{Selling and advertising expenses}}{\text{net sales}} \right) \times 100.
\]

3.7.11 Nature of industry

Industry characteristics play a vital role in sustainability disclosure. It seems that sustainability disclosure is industry specific and it is noted that the nature of industry influences the extent of corporate sustainability disclosure. This shows that industry is an important attribute with respect to sustainability reporting. Under this the companies have been classified into 14 broad industries on the basis of BSE classification and the main product line of the company.

Table 3.3 exhibits various industries:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotives and Transport</td>
<td>17</td>
</tr>
<tr>
<td>Capital and Engineering Goods</td>
<td>11</td>
</tr>
<tr>
<td>Chemical and Fertilizers</td>
<td>7</td>
</tr>
<tr>
<td>Cement and Construction</td>
<td>12</td>
</tr>
<tr>
<td>Consumer Goods, Durables and FMCG</td>
<td>19</td>
</tr>
<tr>
<td>Diversified and Others</td>
<td>12</td>
</tr>
<tr>
<td>Entertainment And Media</td>
<td>3</td>
</tr>
<tr>
<td>Metal, Metal Products &amp; Mining</td>
<td>15</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>15</td>
</tr>
<tr>
<td>Drugs and Pharmaceuticals</td>
<td>15</td>
</tr>
<tr>
<td>Power</td>
<td>17</td>
</tr>
<tr>
<td>Software, IT and ITES</td>
<td>8</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>4</td>
</tr>
<tr>
<td>Textile</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>158</strong></td>
</tr>
</tbody>
</table>
3.8 HYPOTHESES OF THE STUDY

Keeping into consideration the objectives of the study, the following null and alternate hypotheses have been framed and tested:

3.8.1 Developing and Developed Countries

The null and alternate hypotheses for developed and developing countries are described as follows:

3.8.1.1 Developing Countries

Brazil

H₀₁: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Brazilian companies.

H₁: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Brazilian companies.

H₀₂: There is no significant difference in the sustainability disclosure scores of Brazilian industries.

H₂: There is significant difference in the sustainability disclosure scores of Brazilian industries.

Russia

H₀₃: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Russian companies.

H₃: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Russian companies.

H₀₄: There is no significant difference in the sustainability disclosure scores of Russian industries.

H₄: There is significant difference in the sustainability disclosure scores of Russian industries.

India

H₀₅: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Indian companies.
H5: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Indian companies.

H06: There is no significant difference in the sustainability disclosure scores of Indian industries.

H6: There is significant difference in the sustainability disclosure scores of Indian industries.

China

H07: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Chinese companies.

H7: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of Chinese companies.

H08: There is no significant difference in the sustainability disclosure scores of Chinese industries

H8: There is significant difference in the sustainability disclosure scores of Chinese industries

BRIC countries

H09: There is no significant difference in the sustainability disclosure scores of BRIC nations.

H9: There is significant difference in the sustainability disclosure scores of BRIC nations.

3.8.1.2 Developed countries

US

H010: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of US companies.

H10: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of US companies.

H011: There is no significant difference in the sustainability disclosure scores of US industries.
H_{11}: There is significant difference in the sustainability disclosure scores of US industries.

UK
H_{012}: There is no significant difference in the sustainability disclosure scores of economic, environmental and social indicators of UK companies.
H_{12}: There is significant difference in the sustainability disclosure scores of economic, environmental and social indicators of UK companies.
H_{013}: There is no significant difference in the sustainability disclosure scores of UK industries.
H_{13}: There is significant difference in the sustainability disclosure scores of UK industries.

US and UK
H_{014}: There is no significant difference in the sustainability disclosure scores of US and UK
H_{14}: There is significant difference in the sustainability disclosure scores of US and UK.

3.8.1.3 Developing v/s Developed
H_{015}: There is no significant difference in the sustainability disclosure scores of developing and developed economies.
H_{15}: There is significant difference in the sustainability disclosure scores of developing and developed economies.

3.8.2 Sustainability reporting and corporate attributes
The null and alternate hypotheses for studying the impact of corporate attributes are described as follows:
H_{01}: The size of a company as measured by its total assets or net sales or total market capitalization has no significant impact on its sustainability disclosure score.
H_{1}: The size of a company as measured by its total assets or net sales or total market capitalization has a significant impact on its sustainability disclosure score.
$H_02$: The profitability of a company as measured by its ROA or ROCE or RONW has no significant impact on its sustainability disclosure score.

$H_2$: The profitability of a company as measured by its ROA or ROCE or RONW has a significant impact on its sustainability disclosure score.

$H_03$: The growth of a company as measured in terms of its growth in total assets has no significant impact on its sustainability disclosure score.

$H_3$: The growth of a company as measured in terms of its growth in total assets has a significant impact on its sustainability disclosure score.

$H_04$: The leverage of a company as measured by its debt-equity ratio has no significant impact on its sustainability disclosure score.

$H_4$: The leverage of a company as measured by its debt-equity ratio has a significant impact on its sustainability disclosure score.

$H_05$: The listing category of a company has no significant impact on its sustainability disclosure score.

$H_5$: The listing category of a company has a significant impact on its sustainability disclosure score.

$H_06$: The age of a company has no significant impact on its sustainability disclosure score.

$H_6$: The age of a company has a significant impact on its sustainability disclosure score.

$H_07$: The nationality of a company has no significant impact on its sustainability disclosure score.

$H_7$: The nationality of a company has a significant impact on its sustainability disclosure score.
$H_{08}$: The board size of a company has no significant impact on its sustainability disclosure score.

$H_{08}$: The board size of a company has a significant impact on its sustainability disclosure score.

$H_{09}$: The board independence of a company has no significant impact on its sustainability disclosure score.

$H_{09}$: The board independence of a company has a significant impact on its sustainability disclosure score.

$H_{10}$: The advertising intensity of a company has no significant impact on its sustainability disclosure score.

$H_{10}$: The advertising intensity of a company has a significant impact on its sustainability disclosure score.

$H_{11}$: The nature of industry to which a company belongs has no significant impact on its sustainability disclosure score.

$H_{11}$: The nature of industry to which a company belongs has a significant impact on its sustainability disclosure score.