CHAPTER 3

OBJECTIVES AND RESEARCH METHODOLOGY

The need for corporate environment disclosures arises to comply with the statutory requirements, public opinion and the logic of public accountability. The reform process in India has certainly improved the performance of the different sectors in the Indian economy. The Indian Corporate sector has started realizing the need for adequate corporate environment and social disclosures in order to repose the confidence of the stakeholders in the working of their enterprises and performance.

The environmental issues have assumed utmost priority at the international level. There is a growing pressure for the corporate enterprises to consider environmental effects of their operation. As a result, accounting and disclosure of environmental matters have rapidly been emerging as an important dimension of environment management (Mohana Rao, et al 2001).

This chapter scheme comprises of following sections:-

1. Objectives of the Study
2. Research Methodology

OBJECTIVES

The main objective of the research work is:

1. to examine the association between the disclosures and corporate characteristics such as size, profitability, age, risk etc.
2. to find out the content and quality of environmental disclosures and the environment management practices of corporate enterprises.
3. to study the regulatory framework of environment management in the corporate sector.
4. to analyse the perceptions of investors regarding environmental management and disclosure practices.

RESEARCH METHODOLOGY

Data Collection

The data for the present study has been collected from primary and secondary sources. The primary data has been collected from 100 respondents as to their perceptions as to environment management and disclosures. These respondents are from among the investor’s class and represent the different professionals.

The secondary sources:

1. Data with regard to corporate characteristics has been taken from PROWESS Database managed by CMIE (Centre for Monitoring Indian Economy). The data has been extracted to establish the relationship of environmental with various corporate characteristics. Prowess database has been preferred as it provides normalized financial data relating to companies.

2. In addition, for identification of top 100 companies to be selected in the sample, BSE 500 index has been used from BSE website.

Research Design:

1. Corporate Environmental disclosure index consisting of 30 items on the basis of the content analysis.
2. To find out the association between environmental and various corporate characteristics analytical tools like Simple linear regression, and multiple regression models along with the curvilinear models have been used.

**Determinants of environmental**

In the present study sales, total assets, number of employees, compensation paid to employees, average capital employed have been used as the measures of size. These variables are coded as SALE, TA, NEMPL, COMEMPL and ACAPE. In addition, log of sales, total assets, number of employees, compensation of employees have also been used as measures of size. These variables are coded as LOGSALE, LOGTA, LOGNEMPL and LOGCEMPL in the same sequence.

**Environmental disclosures and profitability of companies**

Accounting based measures of profitability:

In this study, profit after tax (PAT) as absolute measures and return on net worth, return on capital employed have been used as the relative measures of profitability. These variables are labelled as PAT, RONW and ROCE in order. The following specific hypotheses have been tested regarding profitability:

**Environmental disclosures and risk profile of companies**

Environmental information has been tested against the financial leverage of Indian companies. In addition environmental information has been tested against the Beta of Indian companies.

**Universe of the Study:**

The Indian companies of BSE 500 index constitute the universe of the study.
Sample Size and Sampling Method: Final selection of sample: Out of these 100 companies the final sample was formed in the following manner

Sample selection process

<table>
<thead>
<tr>
<th>Companies selected from BSE -500 index</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Companies in financial sector</td>
<td>18</td>
</tr>
<tr>
<td>Final Sample</td>
<td>82</td>
</tr>
</tbody>
</table>

Period of the study: The study covers a period from the year 2007-08 to 2009-10.

Measurement/Scoring in the ERI

Un-weighted ERI scores: Disclosures scores are calculated firstly on the basis of number of items disclosed. Here, the only consideration is whether or not a company discloses an item of environmental information in its corporate annual report. If a company discloses an item of environmental information in its annual report it will be awarded 1 and if not it will be awarded 0. The disclosure model for the un-weighted environmental disclosure thus measures the ERI disclosure score for a company as an addition of the 30 items selected. The items in the index are based upon a CSR index earlier used by Kansal (Kansal, 2012).

Weighted disclosure score: Evidence of the disclosures measured on a rating scale ranging from 0-5 depending upon degree of disclosure.

Longitudinal analysis: Longitudinal analysis has been done by using the data of environmental reporting for three years from 2007-08 to 2009-10.

Statistical analysis techniques used: In addition to descriptive tools like percentages, average, ranks, standard deviation, range, coefficient of variation, scenes
and kurtosis, Kolmogorov-Smirnov (K-S test) and Shapiro-Wilk test, Levene’s test. The following analytical and statistical tools have been used for purposes of hypothesis testing and interpretations.

**Student’s t-test and ANOVA:** T-test analyses the variation in two variables and ANOVA table decomposes the variance of the data into two components: a between-group component and a within-group component. The F-ratio is a ratio of the between-group estimate to the within-group estimate. In case, the P-value of the F-test is less than 0.05, there is a statistically significant difference between the means of the variables at the 95.0% confidence level.

**Relationship between ERI score and corporate characteristics:**

In a regression model, a response variable Y is expressed as a function of one or more predictor variables X, plus noise. If the P-value in the ANOVA table is found to be greater or equal to 0.05, there is not a statistically significant relationship between ERI score and corporate characteristics at the 95.0% or higher confidence level. The R-Squared statistic indicates that the model fitted explains a percentage of the variability in ERI score. The correlation coefficient indicates a relatively weak or strong relationship between the variables. The standard error of the estimate shows the standard deviation of the residuals. The mean absolute error (MAE) is the average value of the residuals.

The simple linear regression model as fitted has been shown with each of the corporate characteristics. The fitted model is plotted with confidence limits and/or prediction limits.