

**ENVIRONMENTAL ACCOUNTING AND ETHICAL  
PRACTICES: AN EMPIRICAL STUDY OF SELECTED  
BUSINESS ENTERPRISES IN GOA**

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**In  
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**BY**

**Mr. SHETKAR SUDESH SATYAVAN, M.COM.**

**RESEARCH SCHOLAR**

**FR. AGNEL COLLEGE PILAR, RESEARCH CENTRE IN COMMERCE,  
PILAR GOA, INDIA**

**UNDER THE GUIDANCE**

**OF**

**Dr. ANTHONY RODRIGUES, Ph.D.,**

**DIRECTOR, RESEARCH CENTRE – COMMERCE,**

**ASSOCIATE PROFESSOR**

**FR. AGNEL COLLEGE OF ARTS AND COMMERCE,  
PILAR GOA, INDIA**

**SEPTEMBER, 2018**

## DECLARATION

I, Mr. Sudesh Satyavan Shetkar, hereby declare that the thesis titled “**Environmental Accounting and Ethical Practices: An Empirical Study of Selected Business Enterprises in Goa**” submitted to the Department of Commerce Goa University, Goa - India. For the award of the degree of Doctor of Philosophy is a bonafide record of original and independent full-time research work done by me during the period 2014 – 2018. The study is carried out under the supervision and guidance of Dr. Anthony Rodrigues, Director, Research Centre and Associate Professor, Fr. Agnel College of Arts and Commerce, Pilar - Goa, India.

I also declare that this thesis has not been previously formed or presented, either wholly or partly as the basis for an award for any degree, diploma, associateship, fellowship or any other similar title in any other universities. I have duly acknowledged all the sources of scholarly information used by me in the preparation of the thesis.

Date: 10<sup>th</sup> / September / 2018

SHETKAR SUDESH SATYAVAN

Place: Pilar, Goa, India.

(Research Scholar, Goa University)

## **CERTIFICATE**

I, hereby certify that this thesis for a Ph.D. degree in commerce titled “**Environmental Accounting and Ethical Practices: An Empirical Study of Selected Business Enterprises in Goa**” is a bonafide record of original and independent research work done. By Mr. Sudesh Satyavan Shetkar full-time research scholar, Department of Commerce, Goa University. During the period of the study under my supervision and guidance. I also certify that this thesis has not been previously formed or presented, either wholly or partly as the basis for an award for any degree, diploma, associateship, fellowship or any other similar title in any other universities.

Date: 10<sup>th</sup> / September / 2018

Place: Pilar, Goa, India.

Dr. ANTHONY RODRIGUES  
Research Guide, Director –  
Research Centre - Commerce  
Associate Professor  
Fr. Agnel College of  
Arts and Commerce  
Pilar, Goa, India – 403203.

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(Research Scholar, Goa University)

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## LIST OF ABBREVIATIONS

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EA	= Environmental Accounting
EM	= Environmental Management
EE	= Environmental Ethics
CSR	= Corporate Social Responsibility
EPS	= Earnings Per Share
ROE	= Return on Equity
IAS	= Indian Accounting Standards
GAAP	= Generally Accepted Accounting Principles
IFRS	= International Financial Reporting Standards
UN	= United Nations
SEEA	= System of integrated Environmental and Economic Accounting
UNSD	= United Nations Statistics Division
UNCEEAA	= United Nations Committee of experts on Environmental-Economic Accounting
OECD	= Organisation for Economic Co-operation and Development
SEEA-MFA	= System of Environmental-Economic Accounting for Material Flow Accounts
MSMEs	= Micro, Small and Medium Entrepreneurs
MOEF	= Ministry of Environment and Forests
LOI	= Letter Of Intent
NOC	= No Objection Certificate
SPCB	= State Pollution Control Board
CRZ	= Coastal Regulation Zone
CPCB	= Central Pollution Control Board
CEPI	= Comprehensive Environmental Pollution Index

PLIA	= Public Liability Insurance Act
Sq.Km	= Square Kilometres
GDP	= Gross Domestic Product
DITC	= Directorate of Industries, Trade, and Commerce
CR	= Social Responsibility
EMS	= Environmental Management System
SMEs	= Small and Medium Enterprises
CEP	= Corporate Environmental Practices
BSE	= Bombay Stock Exchange
ROCE	= Return on Capital Employed
IAEM	= Indian Association for Environment Management
NEERI	= National Environmental Engineering Research Institute
AIDS	= Acquired Immune Deficiency Syndrome
EMA	= Environmental Management Accounting
EAR	= Environmental Accounting and Reporting
DSE	= Dhaka Stock Exchange
AF	= Accounting Firm
FO	= Foreign Operations
PROFI	= Profitability
LEV	= Leverage
GEMS-HU	= Global Environmental Management Survey in Hungary
EPE	= Environmental performance evaluation
ISO	= International Organisation for Standardization
EPIs	= Environmental Performance Indicators
FMM	= Federation of Malaysian Manufacturing
NSE	= National Stock Exchange
CSRC	= China Securities Regulatory Commission
CCER	= China Centre for Economic Research

ECSR	= Environmental Corporate Social Responsibility
SCG	= Siam Cement Group
ED	= Environmental Disclosure
ER	= Environmental Reporting
EDI	= Environmental Disclosure Index
GC	= Global Compact
NGOs	= Non-Government Organizations
DSS	= Decision Support Systems
GIS	= Geographical Information Systems
IT	= Information Technology
LCA	= Life Cycle Assessment
TV	= Television
US	= United States
OHSAS	= Occupation Health and Safety Assessment Series
GRI	= Global Reporting initiative
CAs	= Chartered Accountants
X <sup>2</sup>	= Chi-Square
MSMED	= Micro Small & Medium Enterprises Development
GDDKVIB	= Goa Daman and Diu Khadi Village and Industries Board
IPB	= Investment Promotion Board
IDC	= Industrial Development Corporation
RTI	= Right To Information
SPSS	= Statistical Package for the Social Sciences
S-W Test	= Shapiro Wilk Test
K-S Test	= Kolmogorov – Smirnov Test
U - Test	= Mann-Whitney Test
P- Value	= Probability Value
ATO	= Australia Taxation Office

CER	= Corporate Environmental Responsibility
R&D	= Research and Development
E- waste	= Electronic Waste
GSPCB	= Goa State Pollution Control Board
HPCC	= High Powered Co-ordination Committee
NAMP	= National Air Monitoring Programme
NWMP	= National Water Monitoring Programme
MT	= Metric Tons
Nos	= Numbers
HLTF	= High-Level Task Force
FIR	= First Information Report
WED	= World Environment Day
IFB	= Inspectorate of Factories and Boiler
RTO	= Regional Transport Office
AFIH	= Associate Fellow of Industrial Health
MBBS	= Bachelor of Medicine and Bachelor of Surgery
DGFASLI	= Directorate General Factory Advice Service & Labour Institutes
MOEFCC	= Ministry of Environment, Forest and Climate Change
UNEP	= United Nations Environment Programme
SACEP	= South Asia Co-operative Environment Programme
ICIMOD	= International Centre for Integrated Mountain Development
UNCED	= United Nations Conference on Environment and Development
CSD	= Commission on Sustainable Development
GEF	= Global Environment Facility
SAARC	= South Asian Association for Regional Co-operation
ESCAP	= Economic and Social Council for Asia and Pacific

## **ABSTRACT**

During the prior few decades, one of the key policy issues that have gained vital importance is that the environmental protection and pollution. Business enterprises take their raw materials from the natural environment to manufacture merchandise and provide services to satisfy the demands of the society. In fact, the business entities largely depend upon the community and natural environment for their overall success and growth. As such they are responsible for the society and the environment. This responsibility of business entities evolved into the need for adoption of environmental accounting and ethical practices in business enterprises. Where, Environmental Accounting (EA) is a method of identifying and measuring the cost incurred towards environmental protection, and income if any derived through natural resources and disclosing/reporting such monetary information to the stakeholder of the company with a vision to fulfilling its social responsibility.

The thesis comprises of five chapters. The first one is the introductory and theoretical framework of the study. It covers environmental accounting and ethical practices historical background in India, as well as the regulatory background. Similarly, it highlights the profile of Goa and present scenario of environmental accounting in Goa. The second chapter deals with reviews of literature and shed lights on previous research work done towards environmental accounting and ethical practices both nationally and internationally. This chapter is bifurcated into two sections firstly journal articles reviewed. Secondly, thesis reviewed by the researcher.

The third chapter discusses the research methodology utilized for the study. That covers the background of the study, research problems, research gap. There are six objectives of this study, first to investigate the factors influencing the level of corporate environmental disclosure of business enterprises in Goa. Second, to study and evaluate the extent of legal compliance of business firm on environmental accounting and disclosure practices. Third, to study and evaluate the measures taken by industries to prevent harmful causes to the environment of Goa. Fourth to examine and assess the role of environmental accounting and ethics in building a corporate image. Fifth to study the role of government towards sustainable environmental development in business enterprises in Goa. Sixth to analysis

pre and post effects of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting, and ethical practices carried out by business enterprises in Goa. A sample size of the study is 118 companies registered under The Directorate of Industries Trade and Commerce Panaji Goa based on universal sampling techniques. Data collected through personal interview and Right To Information (RTI) Act 2005 is of 103 Companies which has utilized for data analysis. This chapter also comprises of an overview of tools and techniques used and limitation of the study.

The fourth chapter discusses in-depth analysis hypothesis testing, inferences, interpretation of all six objectives. First objective key results highlight, excluding Age all-other factor like nationality, ownership, size, and sector or category highly influencing level of corporate environmental disclosure of business enterprises in Goa. Second objective key results highlights, attitude or preference does vary in the extent of legal compliance of business firm towards environmental accounting and disclosure practices between different groups of companies in Goa. Third objective key results highlights, except few parameters like awards, vision & mission, stand towards climate change, research, and development, donation, and sponsorship which have taken care but by least number of companies. Almost 61.34% of companies have taken positive measures towards conservation & protection of environmental of Goa and to prevent from the harmful cause from their routine business activities. Fourth objective key results highlights, not all factor of ethics & environmental responsibility affect in building corporate image, but overall some element of factors combinable influence in building corporate image & reputations. Fifth objective key results highlights, a role performed by different government institution of our country is equivalent to expectation, and there are ample opportunities for sustainable development. Sixth objective key results highlights, corporate environmental accounting, and ethical practices carried out by business enterprises in Goa has been affected positively through the introduction of Company Act 2013 and enforcement of (Corporate Social Responsibility) Policy Rules 2014.

The fifth chapter covers major findings of the study, the brief conclusion that says environmental accounting and reporting should be made mandatory for all the section even for small and cottage industries. Special attention should give towards Indian, private, medium, small and cottage industries. CSI's index score found very low in parameters like awards, vision & mission, stand towards climate change, research and development,

donation, and sponsorship. In these areas, corporates have to take sufficient level of initiatives as these parameters are equivalently crucial in environmental protection and sustainable development. Company escape from legal compliances regarding environmental or becoming less proactive regarding taking positive corporate sustainable initiatives, this irresponsible action will defiantly lead to hampering their corporate image and reputation. Companies found to be framed CSR committees, as well as the percentage of profit being, spend towards CSR activities has been observed in increasing trend after enforcement of the Company Act 2013 (Corporate Social Responsibility) Policy Rule 2014 in the study. This increasing trend will definitely, and should benefit the overall societal development as well as for environmental sustainability. This chapter also covers recommendations together with the summary of the study, contribution to knowledge and suggestions for further research.

**Key Words:** Environmental Accounting, Environmental Management, Environmental Ethical Practices, Corporate Social Responsibility, Corporate Environmental Responsibility.



# CHAPTER - I

## INTRODUCTION

During the earlier few decades, one of the crucial policy issues that have gained vital importance is that the environmental protection and pollution. Business functions within the overall societal environment. Business enterprises take their raw materials from the natural environment to manufacture merchandise or provide services to satisfy the demands of the society. Business enterprises operate within the social ambience from where they collect resources including the workforce. In fact, the business entities largely depend upon the community and natural environment for their overall success and evolution. Hence, they are equivalently responsible towards the society and the environment. The model of Environmental Management (EM) emerged as a substitute for the traditional sectoral approach to resolving the environmental problems that prevailed throughout the 1970s. EM targets at conciliating socioeconomic development objectives with the conservation of environmental quality and ecological functions over the adoption of policy instruments and measures soon build the developmental activities within the boundaries of environmental tolerance. Environmental management, a term covering environmental planning, assessment, monitoring, protection, education, research & development, conservation and sustainable utilization of resources, is currently universally accepted as a significant guiding factor for national growth and more so far industrial development. (Kumar, 2012)

The universal economic consequence and growing concern about sustainable growth and global climate change have produced a brand new variety of ethical investors. They are influencing companies to report on the environmental and social costs of their procedures and improve corporate governance. A business or organization is considered into account to be ethical only if it attempts to achieve a balance between its economic objectives and its social obligations, like obligations to the society anywhere it exists and operates; to its people for whom it pursues financial goals; to the environment, from where it takes its resources. Throughout the initial phases, when business organized as a sole proprietorship or partnership corporation, profit was the dominant barometer of the success of a business.

After, with the formation of joint stock companies and also the development of stock markets, companies performance was judged by market capitalization, share price value and specific financial ratios like Earnings Per Share (EPS), Return On Equity (ROE). Currently, within the 21st century, companies' performance is going to be judged based-on (CSR) whose disclosure will fall underneath non-financial reporting. One of the vital parameters to be evaluated in this situation would be the value created by the company for the society and whether such value formation is going to be justifiable. (Dhingra & Singh, October 2014)

In 1984 the union inorganic compound disaster at its plant in Bhopal, India, Which killed thousands of individuals and wounded some hundred thousand this attracted world attention on the chemical industry. This incident led to the chemical industries adopting a voluntary code of ethical conduct acknowledged as "Responsible Care" that became a perfect model for other sections of industries. Business ethics are the moral principles that must govern business activities. These provide a code of conduct that guides business managers in carrying out their work. A 'Code of Ethics' goes further than separate values to become a collection of principles that construct a clear statement of what the business corporation is willing to do, or not to do. Moving towards environmental sustainability may gain an advantage to corporations in many ways. They additionally came from the business method that considers moral, social, and ethical factors. The advantages have interpreted into the quality of life such as quality of work life, customer satisfaction, and environmental impact. It has usually and progressively believed that humanity's survival depends on the implementation of sustainable development practices, which based on acceptable satisfaction of the quantitatively outlined and interrelated sustainability "Pillars" of economics, environment, and society, within suitable space and time boundaries. Construction of universally ethical character and investment into ethical value added is the long-term justifiable way to adopt if minimal regulation and maximal long-term effectiveness most sustainable development are essential, in the building of a strong basis of universally ethical behavior. (Rebelly & Ragidi, 2007)

Organizations of the twenty-first century can now no longer limit themselves to manufacturing and selling products or services with none considerations for the impact they have on society. If they need to be trusted by their consumers, staffs and the community at large, they required a lot of socially accountable. One vital issue of

Corporate Social Responsibility (CSR) that needs to address is the amalgamation of ethics minorities within the workplace and the community. Everyone judges firms, whether or not you invest in them, purchase from them, work for them, or merely live close to them, it is difficult not to form a judgment towards firms. Companies are recognizing that each & every customer is part of the community and their social responsibility is not an optional activity. Organizations have thousands of legal responsibilities governing almost every aspect of their operations, including consumer and merchandise laws, environmental laws, and employment laws. The ethical responsibilities concern community anticipations that go beyond the law, such as the anticipation that firms will conduct their affairs in a frank and straightforward way.

Globalization states to the increasing interdependence of countries affecting the growing business on the integration of trade, finance, people, and ideas in one worldwide marketplace. Worldwide trade and a cross-border investment movement are the essential elements of this alliance. The global economy needs organizations to define their role and reconsider their economic, social and environmental aims, converting corporate models quicker, more frequent and more extensive than in the past, to prove their ability to develop legitimate business through undoubtedly stated and crystal clear strategies. Picking the perfect social responsibility policy impacts business by dropping costs and risk, increasing profits and competitive advantage, increasing status and legitimacy and building synergistic value. Organizations differ much depending on their attitude towards implementation of CSR tactics and speed in changing ethical behavior.

According to Swami Vivekananda, ethics cannot be resulting as of the plain sanction to any personage. Some eternal principle of truth has the approval of ethics. According to Swami Vivekananda, the essential themes of ethics and morality suggest, “don’t injure others, love everybody as your own-self as a result of the complete universe is one.” The individuals make one entirely different from all alternative things and beings. This dissimilarity creates all kind of hatred, jealousy, misery, struggle and every one different evil through a spell of sacrifice, individuals transcend to a height of divinity that makes one as lovely on creating him needing to sacrifice life even for a tiny insect. Law cannot shield society; ethics can: ethics is vital since the government, law, and lawyers cannot do everything to guard society. Technology develops quicker than the government can regulate. Individuals in an industry often know the hazards of a particular technology

better than the monitoring agencies. Additionally, the government cannot continuously monitor all activities that are harmful to society. Wherever law fails, ethics will succeed. Ethically-Oriented management takes measures to avoid pollution, environmental protection and protection of employees' health even before being made mandated by law.

In today's business atmosphere, competition is not any longer entirely limited to producing higher and better quality goods. Several other essential aspects will decide a company's success and make it stand out. One such element is corporate image and reputation. A corporation reputation closely linked to the passionate belief of its numerous stakeholders. Company image and reputation can measure as intangible assets and valuable resources; a firm can use to differentiate itself as to its competitors. The name can build over time as the result of multifaceted interrelationships and exchanges among a company and its stakeholders. A company's socially responsible behavior can change stakeholder's perceptions of how the corporation's do; specified products created by socially accountable firms are performing better at globalized markets.

## **1.1 CONCEPT OF ENVIRONMENT**

The environment is something that makes up our surroundings and affects our ability to live on the earth. It forms the source of our existence. It encompasses the air we breathe, the water that covers most of the earth's surface, plants and animals around us, and much more. It denotes to both abiotic (non-living) and biotic (living) species on the environment. The word environment means natural surroundings, in which organisms live. The term 'environment' originates from the French word 'environ' or 'environner' means 'around,' 'roundabout,' 'to surround' or 'to encompass.' As mentioned in the dictionary meaning of the word 'environment' is surroundings, external conditions influencing the development or growth of human being, animals, and plants; living or working conditions. 'Environment' refers to the sum-total of circumstances which surround man at a given point in space and time. The environment is a set of external conditions including land, air, water, animals, and plants particularly those which affect and influence the lives and activities of living things. In other words, the environment is the representative of physical components of the earth wherein man is the important factor influencing the environment. The term environment refers commonly to all living and non-living things that occur naturally on earth. The concept of 'environment' is not of recent origin in India. The first

written document on 'environment' is 'Rig-Veda' which is the proud possession of India and the oldest book of humankind. The Rig-Veda contains hymns or verses. Most of the early hymns of the Rig-Veda are about nature and its personifications in the form of devas, like Agni, Surya, Indra, Varun, Vayu. This creation shows the mother nature worshiping society of that period.

## **1.2 ENVIRONMENTAL ACCOUNTING**

Environmental accounting is a discipline that determines resources use, measures and communicates the cost of companies or national economic impact on the environment; it aims to integrate both environmental and economic information. Which is used by a company not only for internal decision making, but it is also made public through disclosure in environmental reporting.

### **1.2.1 HISTORICAL BACKGROUND OF ENVIRONMENTAL ACCOUNTING**

Norway constructed the first environmental accounts some were in 1970. For the first time, in the year 1972, the connection between economic development and environmental degradation had discussed by the international community at the United Nations (UN) conference on the human environment. Country France was a 3rd early implemental of environmental accounting. In the 1980's, it started developing an approach called the Comptes du Patrimoine, or Patrimony accounts. These involved an integrated system structured around three distinct, but linked units of analysis. The UN set up the World Commission on Environment and Development, also known as the Brundtland Commission, in 1983. The commission inspected whether nations were misusing their natural and environmental resources and issued a report entitled our collective future in 1987. This report further popularized the concept of sustainable development as an alternative to uncontrolled economic growth and defined "Sustainable Development" as "the development that meets the needs of the present-day without compromising the ability of forthcoming generations to meet their own needs." The early 1990s World Bank conducted a review of environmental accounting, the resulting report listed countries that had developed accounts, the methods used, and the extent of coverage. The first handbook for developing a System of integrated Environmental and Economic Accounting (SEEA) where issued in the year 1993 that was designed by the United Nation (UN). In the year

1994, a group of countries active in environmental accounting formed the London Group on environmental accounting to share their experiences in developing and implementing the accounts. In the year 2000, The United Nations Statistics Division (UNSD) and the UN environment programme published combined environmental and economic accounting - An operational manual that was written by the Nairobi Group (a group of government, international, and non-governmental organization experts). The handbook contains guidance on implementing parts of the SEEA and offers additional illustrations on how the accounts have been used in policymaking. In the year 2003 UN, Eurostat, International Monetary Fund, OECD, World Bank, and the London Group released a reconstructed version of SEEA-1993, which was drafted with technical assistance from the London Group on environmental accounting. The reconstructed SEEA made development towards the standardization of concepts, definitions, and methodologies. In the year 2006 UNCEEA (United Nations Committee of Experts on Environmental-Economic Accounting) began a Global Assessment project. (a) To assess the present status of national implementation of environment statistics, environmental-economic accounting and interrelated statistics; (b) To identify priorities and future-plans in these areas; and (c) To judge impeding factors in the collection, compiling and dissemination of environment statistics, environmental-economic accounting, and interrelated statistics. In the year 2008 The UN, jointly with Eurostat and Organisation for Economic Co-operation and Development (OECD), in drafting the System of Environmental-Economic Accounting for Material Flow Accounts (SEEA-MFA), this is scheduled to be implemented by the United Nations Statistical Commission upon recommendations by the UNCEEA in 2010. In the year 2016 workshop held at Tokyo Japan on training for the universal application of the Structure of Environmental-Economic Accounting 2012 - Central Framework for Asia and Pacific.

### **1.2.2 DEFINITION**

According to **Harish S. Oza and Gurudutta P. Japee** defined “Environmental accounting is the identification, measurement, and allocation of environmental costs, the incorporation of these environmental costs into business decisions, and the successive communication of the information to a company’s stakeholders.”

**G. Francis Xavier** defines “Environmental accounting as the activities of an enterprise has its impact, either favorable or adverse on the environment. Environmental accounting deals with the quantum of effects created by the actions of corporate anxiety on the environment and natural resources and interpret them into financial terms to publish the same in its financial statements.”

**Gray, Walter and Bebbington** observed, “Environmental accounting can take as covering all areas of accounting that may be affected by the business response to environmental issues, including new areas of eco-accounting.”

**Koushik Kumar Dutta** Says “Environmental accounting is to denote the identification, measurement, and reporting of environment specific costs that arise from the actual or potential impact of company’s economic activities on the environment.”

In Simple terms “**Environmental accounting** can be defined as a method of identifying and measuring the cost incurred towards environmental protection, and income, if any derived through natural resources and disclosing/reporting such monetary information to the stakeholder of the company with a vision to fulfilling its social responsibility.”

### **1.2.3 WHAT IS ENVIRONMENTAL ACCOUNTING?**

Environmental accounting is a word with numerous meanings and uses. It is a broad field of accounting that provides reports for both internal use, creating environmental information to help in making management decisions on pricing, controlling overhead and capital budgeting, and external use; disclosing environmental information of the company to the interested public and to the financial community. However, from various definitions provided above, environmental accounting can be understood as a management tool that utilized for a range of purposes. Such as improving environmental performance, controlling costs, investing in cleaner technologies, developing greener processes and products, and taking up-to-date decisions relating to product mix, product retention, and product pricing. Also, environmental accounting has seen by way of the generation analysis, and use of monitored environmentally related information to decrease corporate ecological adverse impact on natural environment and to improve economic performance.

## **1.2.4 FORMS OF ENVIRONMENTAL ACCOUNTING**

The environmental accounting has three essential forms those are Environmental National Accounting, Environmental Financial Accounting, and Environmental Management Accounting, which are discussed below in details.

### **1.2.4.1 Environmental National Accounting:**

The word environmental accounting can refer to this national economic context. For example, environmental accounting can be used physical or monetary units to refer to the consumption of the country's natural resources, both renewable and non-renewable. In this situation, environmental accounting has labeled as "natural resources accounting." National level accounting emphasizes on natural resources, stocks, and flows, environmental cost and externality cost.

### **1.2.4.2 Environmental Financial Accounting:**

Enables corporations to prepare financial reports which are used by investors, lenders, customers and others, publicly held companies, report information on their financial condition and performance through quarterly and annual reports. However they are governed by Indian Accounting Standards (IAS), Generally Accepted Accounting Principles (GAAP), International Financial Reporting Standards (IFRS) are have been taken basis for this reporting, and also the recently introduced Company Act 2013. Financial accounting focuses on reporting environmental liability costs and other significant environmental costs.

### **1.2.4.3 Environmental Management Accounting:**

Management accounting emphasizes on material and energy flow information and environmental cost information. Management accounting is the method of identifying, collecting, and analyzing information mainly for internal purposes. Because a fundamental goal of management accounting is to back a business's forward-looking management decisions, which is the focus of the residue of this essential coverage. Management accounting can include data on costs, production levels, inventory and backlog, and other



vital aspects of a business. The information collected underneath a business's management accounting system is utilized to plan, evaluate, and control in various ways: planning and directing management attention, raw material purchase decision making, capital investments, product costing and pricing, risk management, process/product design, and compliance strategies. This type of accounting can be further segregated into three sub-systems as mentioned below.

- a) **Segment Environmental Accounting:** This is an internal environment accounting instrument to select an investment activity or project connected to environmental effects for a specified period.
- b) **Eco-Balance Environmental Accounting:** This is too an internal environmental accounting tool to support sustainable environmental management activities.
- c) **Corporate Environmental Accounting:** This is an instrument to inform the public of relevant information accumulated by the environmental accounting. It should be called corporate environmental reporting. For this purpose, cost and effect in quantity and monetary value of its environmental conservation activities used.

### **1.3 THE NEED FOR ENVIRONMENTAL ACCOUNTING AND REPORTING PRACTICES AT CORPORATE LEVEL**

Accounting for environmental costs and benefits confirms the achievement of environmental sustainability objective, and at the same time it can also support the more efficient use of resources and boost productivity as well as bottom line profitability. It assists to know whether: Corporation has satisfied its responsibilities towards the environment or not. Environmental accounting is a management tool that mixes the financial implications of environmental issues in the financial management systems of organizations to enhance more efficient decision-making to help promote ecological and economic sustainability. Environmental accounting is one of the core tools & techniques of environmental management. It is a useful tool for improvement of economic and environmental performance of an enterprise. It helps in improving effective communication and relationship with several stakeholders. The need for environmental accounting and reporting practices has discussed as follows:

1. Satisfying regulatory requirements or going beyond that expectation.
2. For supplying useful environment-related information for different internal and external stakeholders for their decision making purpose.
3. A better management of environmental cost is possible.
4. Cleaning up pollution that already exists and properly disposing of the hazardous material.
5. A better project appraisal and investment analysis is possible by inclusion of potential environmental costs in conventional accounts.
6. Reduction or Elimination of environmental costs is possible through energy and resource conservation by adopting proper accounting method.
7. Reporting to the investors both potential and current, the amount and nature of the preventive measures taken by the management.
8. Enterprises may be able to exploit a competitive advantage as customers may prefer environmentally friendly products and services.
9. Helps in operating in such a way that those environmental damages do not occur.
10. Competitive advantage may also enjoy by minimizing environmental impacts through improved design of products, packages, and processes.
11. For promoting a company having broader environmental awareness.
12. Control over operational and material efficiency gains driven by the global rivalry market.
13. Appropriate identification and allocation of environmental costs guarantee more accurate costing and pricing of products and investment as decisions are taken based on actual costs and benefits.
14. It is possible to generate revenue that may offset environmental costs.
15. Environmental accounting is an efficient technique of enhancing corporate sustainability.

#### **1.4 SCOPE OF ENVIRONMENTAL ACCOUNTING**

The scope of environmental accounting is vast; it comprises International, National, and Corporate levels. Here, in this study, we are focusing on the corporate level accounting. The environmental accounting system is influenced by its intended use, whether for reporting, performance evaluation or on-going management. The following phases included in the environmental accounting.

#### **1.4.1 INTERNAL**

In this section, Investments are made by the corporate sector for minimization of losses to the environment. It includes investment done into the environmental protection equipment machinery and devices. This sort of environmental accounting is stress-free as money measurement is possible. Environmental cost internal to the organization, are those that a business incurs directly or for which a company can be held legally accountable. They are also cost that can directly affect an organization's financial bottom-line. For example, air monitoring machinery installed into factory than the cost incurred for purchasing and installation can quickly identify, and it can treat as an environmental cost.

#### **1.4.2 EXTERNAL**

All kinds of losses to the environment either occur directly or indirectly because of companies operation/activities. It includes degradation and destruction, depletion of non-renewable natural resources, deforestation, and land used. These costs represent the cost of an organization's impact on the environment and society for which business is not legally accountable. This sort of environmental accounting is not stress-free as losses to the environment cannot be measured precisely in monetary value. Further, it is hard to analyze that how much loss has occurred to the environment due to a specific company, whereas companies are responsible for such types of external cost and damage to natural environment currently being borne by society at large. This problem may solve through getting approximate data or another measurement of loss like quantity of non-renewable natural resources used, how much solid waste produced by the factory, what is the level of wasteful air pass through the chimney in the air and what kinds of elements have comprised in a standard quantity of wasteful air.

### **1.5 ENVIRONMENTAL ACCOUNTING FRAMEWORK IN INDIA:**

The developing countries like India are facing twin issues of promoting economic development and protecting the environment at the same time. A trade-off between environmental protection and growth of a nation is needed. A careful assessment of the advantages and costs of environmental damages is necessary to seek out the safe limits of ecological degradation and the required level of development. It is well known that there

are restricted resources available for the use of all species on the earth and the massive damage has done to the environment due to the activities of the business enterprises. In fact, the industrial and business activities are indirectly and directly responsible for the birth of incidences like the Bhopal Chemical Leak (1984), Tsunami in India.

Indian civilization has a long tradition of taking care of the environment. In the constitution under the directive principle of state policy, “it is expressly mentioned that it is the duty of each state” to safeguard and improve the environment and to protect the wildlife and forest of the nation.” It is the fundamental duty of every single citizen of India” to safeguard and improve the natural environment including forest, lakes, rivers, and wildlife. The Government of India passed numbers of laws which can, directly and indirectly, help in the protection of the environment and natural resources. In addition to that Union Ministry of Environment & Forest and Corresponding State, Governments have made a provision for environmental clearance before any industrial unit set up.

Recently in the Companies Act, 2013 has laid down more emphasis on corporate social responsibility. In the implementation of the powers discussed under section 135 and sub-sections (1) and (2) of section 469 of the Companies Act, 2013. The Central Government at this moment makes the following rules.

Short title and commencement:

1. These rules may be called the Companies (Corporate Social Responsibility) Policy Rules. 2014.
2. These rules shall come into reality on the 1<sup>st</sup> day of April 2014.

Each company is having a net worth of rupees five hundred crores or more or turnover of rupees one thousand crores or more or a net profit of rupees five crores or more throughout any financial year. Need to establish a Corporate Social Responsibility (CSR) Committee of the board containing three or more directors, out of which at-least one director will be an independent director. Company shall ensure that they spend, at least two percent in every financial year of the average net profits of the company making during the three immediately preceding fiscal years, in pursuance of its Corporate Social Responsibility (CSR) policy. Failing to spend such amount should be clearly-justified, and all such details should mention in given specimen in the directors’ / annual report. Company including its subsidiary or holding, and a foreign firm defined under clause (42) of section 2 of the Act

having its branch office or project office in India. Which accomplishes the criteria specified in subsection (l) of section 135 of the Act, shall comply with the requirements of section 135 of the Act and these rules of Company Act 2013. (CA. K. Raghu (President), CA. S. Santhanakrishnan (Chairman) 2013)

Environmental accounting or environmental issues have been highlighted recently in India's 68<sup>th</sup> Independence Day on 15<sup>th</sup> August 2014. When, Prime Minister has urged on Red fort of India that micro, small and medium entrepreneurs (MSMEs) of India to produce goods in the country with "ZERO DEFECT" and to ensure that good have "ZERO EFFECT" on the environment. That means "We should manufacture good in such a way that they carry zero defect, So our exported goods never returned to us. We should manufacture good with zero effect that they should not have a negative impact on the environment".

This statement of prime minister shows that current government of India is interested in environmental accounting. This announcement has taken environmental accounting one more step ahead the statement has acted as tea powder and sugar which added to the boiling water, where milk is yet to be added by micro, small and medium entrepreneurs'(MSMEs).

## **1.6 ETHICS**

Ethics or morals philosophy is the subdivision of philosophy that comprises systematizing, defending and recommending notion of right and wrong behaviors. Ethics look for resolving questions of human ethics by defining concepts such as right and wrong, virtue & vice, good and evil, justice & crimes.

### **1.6.1 DEFINITION**

**Geevarghese Iype V. and A. V. Afonso** defines ethics as a discipline, which is concerned with what is morally good or bad and right or wrong. It deals with fundamental issues of practical decision-making and is concerned with the nature of ultimate value and standards of human action.

**Phillip V. Lewis** says “Business ethics is more than just virtue, integrity, or character. It involves the application of one's understanding of what is morally right and truthful at a time of ethical dilemma.”

### **1.6.2 BRIEFING ON ETHICS**

Ethics may define as the serious-organized examination of how we should behave – in specific, how we should limit the chase of self-interest when our action affects others. These standards have evolved over-time and come from a variety of sources including Firstly, the influence of religious writing and interpretations; Secondly, the influence of philosophical thought; Third, the influence of community (societal) values. Ethics thinks about with characteristics between wise and evil at intervals the globe, between right and wrong human action and between virtuous and non-virtuous attributes of people. Ethics is the philosophical discipline involved with however we should always live, as well as the way to treat each another. “Business Ethics” is outlined because of the critical, structured examination of how folks & establishments ought to behave within the world of commerce. In specifically, it involves examining applicable constraints on the pursuit of self-interest, or (for firms) profits, when the actions of people or corporation affect others.

Philosophers traditionally have cared-for limit their moral concern to human beings, however recently some have created a replacement discipline, environmental ethics, to specify applicable human relationships to the dehumanized world. Within the course of their work, they have to develop sound ethical arguments for conserving biodiversity and challenged typical views of happiness and also the materialistic values at the bottom of abundant modern life, whereas environmental ethics treat the total variation of environmental problems.

Corporate ethics is much required to worry the importance of sustainability, social development, stakeholders, client satisfaction and service orientation in situ of profit orientation. Ethics suggests what's smart and dangerous, thus additionally what's right or wrong. It gets to the notice of the business profession the importance of honesty, sincerity, and fairness that makes them alert and socially acutely aware. These additionally expedite a much better relationship between business and also the society. It will reconcile conflicting interest of various sections of the community like employees, shareholders, consumers, distributors, suppliers, competitors, and government. Today in the era of cut-

throat competition a never-ending and relentless contest has currently begun to cross the ethical boundaries. The contention between the competitors has crept into the lives of consumer too. The motive for higher profits had derived them associate in nursing to do wrong and an unethical practice that is making hurt social group values and morals.

Today, business firms have broader responsibilities to society besides providing profits to their shareholders. The more extensive accountabilities of business corporations might embrace producing not solely products however safe products, providing high-quality, reliable services, environmental protection and applying ethical business practices. Rapid industrialization and their manufacturing activities have contributed to the decline of the natural environment and, in consecutively, can lead to the destruction of the natural resources.

## **1.7 REGULATORY BACKGROUND TOWARDS ENVIRONMENTAL ACCOUNTING IN INDIA**

Providing licenses to any particular industries has now been entirely abolished, as before licensing every company has to take environmental clearance certification from various government authorities as this step has become very vital as further formalities cannot proceed without completing this stage of licensing. Growing concern with the protection of the environment and taking anti-pollution measures have become significant worry all-over the world in the past few decades. India also set up the Central Ministry of Environment with the objective of coordinating between the states and the various ministries, the environmental protection and anti-pollution processes. Required legislation has also passed.

### **1.7.1 MINISTRY OF ENVIRONMENT AND FORESTS (MOEF)**

Even before India's Independence in 1947, numerous environmental regulations existed, but the real motivation for bringing about a well-developed framework came only after the UN conference on the human environment (Stockholm, 1972). Under the guidance of this announcement, in the year 1972, the National Council for Environmental Policy and Planning within the Branch of Science and Technology was set-up. This Body later emerged into a full-fledged Ministry of Environment and Forests (MoEF) in the year 1985,

which today is the apex administrative body in the country for regulating and ensuring environmental protection.

### **1.7.2 THE VARIOUS LAWS AND ACTS GOVERNING ENVIRONMENTAL PROTECTION**

- a. The Indian Fisheries Act 1897
- b. The Indian Port Act 1908
- c. The Poison Act 1919
- d. The Indian Boiler Act 1923
- e. The Indian Forest Act 1927
- f. The Mines & Minerals (Regulation and Development) Act 1947
- g. The Factories ( Pollution & Pesticides ) Act 1948
- h. Industries ( Development & Regulation ) Act 1951
- i. The River Board Act 1956
- j. Wildlife (Protection) Act 1972.
- k. Water ( prevention & Control of Pollution) Act 1974
- l. Forest ( Conservation ) Act 1980
- m. Air ( Privation & Control of Pollution ) Act 1981
- n. Narcotic Drugs & Psychotropic Substances Act 1985
- o. Environmental ( Protection ) Act 1986
- p. Hazardous Wastes ( Management & Handling) Rule 1989
- q. National Environmental Appellate Authority Act 1997
- r. Ozone Depleting Substance (Regulation and Control) Rules 2000
- s. Biological Diversity Act 2002
- t. Electricity Act 2003
- u. Company Act 2013

### **1.7.3 THE ENVIRONMENTAL IMPACT ASSESSMENT OF DEVELOPMENT PROJECTS NOTIFICATION, (1994 AND AS AMENDED IN 1997)**

Every project listed below, Schedule (I) needed environmental clearance from the MoEF. Projects under the de-licensed category of the new industrial policy also require approval from the MoEF. Every developmental project whether or not within the Schedule (I), is



located in fragile regions must take MoEF clearance. Corporate projects with investments above Rs 500 million must acquire MoEF clearance and are further required to bring a Letter Of Intent (LOI) from the Ministry of Industry and No Objection Certificate (NOC) from the State Pollution Control Board (SPCB) and the State Forest Department if the location involves forestland. Once the NOC has obtained, the LOI has transformed into an industrial license by the state authority.

#### **1.7.4 COASTAL REGULATION ZONE**

The MoEF has written comprehensive amendments to the Coastal Regulation Zone Notification of 1991. These revisions try and improve the current provisions for protection and regulation for the utilization of the land at intervals within 500m of the coast and 100m along the tidally influenced water bodies. The Minister MoEF chaired national level discussions across several coastal states to hear the concerns of the all affected stakeholders. A committee was also established under the chairmanship of Dr. MS Swaminathan to handle the shortcomings in the 1991 notification. The MoEF has afterward prepared a comprehensive set of amendments to strengthen the CRZ notification, 1991. Superior protection status has given to Greater Mumbai and Navi Mumbai, Sunderbans, Kerala, and Goa.

#### **1.7.5 THE CENTRAL POLLUTION CONTROL BOARD (CPCB)**

Central Pollution Control Board has also set up. Anywhere cases of violating off standards of water or air pollution have detected, show cause notices have issued to industrial units, and all such units have kept under constant surveillance. The MoEF established a (CEPI) Comprehensive Environmental Pollution Index, for environmental assessment of industrial groups in the country, as a part of a study by the (CPCB) Central Pollution Control Board. CEPI, which combines effect of water, air, and soil pollution, is meant to be used an early warning tool for categorizing industrial sectors/areas regarding the harshness of overall pollution levels.

#### **1.7.6 THE PUBLIC LIABILITY INSURANCE ACT. (PLIA) 1991**

The Act safeguards accidents involving hazardous substances and insurance coverage for these. Wherever death or injury outcomes from an accident, this Act makes the owner

responsible for providing relief as specified in the Schedule of the Act. The PLIA amended in 1992, and the Central Government was authorized to establish the Environmental Relief Fund, for making relief payments.

### **1.7.7 ENVIRONMENTAL AUDIT**

A Gazetted notice on Environmental Audit brought by the Ministry of Environment and Forests in the year 1992. (amended vide notification no. G.S.R 386 (E), date, 22-04-1993), below the Environmental (Protection) Act, 1986 has made it compulsory for all the industrial units to submit an environmental statement to the relevant State Pollution Control Boards, whereas seeking consent to operate under the applicable environmental norms.

### **1.7.8 COMPANY ACT 2013**

Indian Companies Act, 2013 requires to include in director's report environment-related policies/problems, conservation of energy. (i) The step has taken or impact on the preservation of energy; (ii) The actions taken by the corporate for utilizing alternate sources of energy; (iii) The capital investment on energy conservation instruments and annexure details of energy consumption, energy conservation. Technology absorption- (i) The positive steps made towards technology absorption; (ii) The advantages derived from like cost reduction, product improvement, and product development or import substitution. Disclosure of (CSR) Policy of company as per annexure attached to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

## **1.8 PROFILE OF GOA**

Goa is one amongst the tiniest state within the country, However, the most beautiful state in India because it has the correct combination of Topographic beauty as It falls into three separate areas namely – the Western Ghats, the Midland regions and also the Konkan coastal region. This natural beauty attracts not an only domestic tourist, but it has been given first preferences by International tourist as well. Several foreign and domestic tourists visit Goa each year. One of the highlighting features of the state is harmonious relationship sustained among the folks of the different religions who are living together for

many generations. The National Population Commission has ranked Goa as the first state between all states/union territories regarding twelve indicators composite index on quality of life. The name Goa appears to have derived from 'Gomantak' a word with many meanings, signifying mostly a fertile land referred to in the epic Mahabharata. However, they were the Portuguese who gave Goa its name. Before they arrived on this land, Goa, or Gove or Gowapura, was the name only of the port or town near the mouth of the Mandovi River. That was also the same site of River Mandovi on which the Portuguese later built their capital; today it is known as Old Goa.

After Independence of India in the year 1947, Goa continued to remain under the rule of the Portuguese. Jawaharlal Nehru persisted that Goa should hand over back to India. However, Portugal refused. On 16th December 1961, Operation Vijay had launched where Indian troops crossed the borders to enter Goa. The attack lasted for more than 36 hours; however, it finally resulted in an unconditional surrender from the Portuguese on 19th December 1961. Goa eventually became a 25<sup>th</sup> federally administered territory of India. Goa celebrates its Liberation Day on 19th December every year. Goa is administratively divided into two districts North-Goa and South-Goa with twelve talukas. Goa has a Legislative Assembly comprises of forty elected members, with three elected representatives, and two in Lok-Sabha representing North Goa and South Goa respectively and one in Rajyasabha. The governor is the head and appointed by the president of India. The Chief Minister heads the Council of Ministers and is democratically elected and forms the government and is responsible for policies of the government during his reign. Panaji is the capital of Goa. The official languages of people of Goa are Konkani and Marathi. Portuguese, the previous language of the leading, has been hit by shrinking numbers. English, viewed as a language of opportunity and the many of the state residents widely understand social mobility. Hindi, India's national language has similarly spoken as a second language in Goa.

### **1.8.1 GEOGRAPHICAL LOCATION**

The State of Goa is located on the mid-west coast of India and is between the coordinates Latitudes 15 degrees, 48'00" N and between 14 degrees, 53'54" N and Longitudes 74 degrees, 20'13" E and 73 degrees, 40'33" E. It is 1022 meters above Sea level. The state is bordering on the North by Sindhudurg district of Maharashtra state, on the East by

Belgaum district of Karnataka state and on the South by Karwar district of Karnataka state and on the West side by the Arabian Sea. The cost line stretches to the length of about 105 km in the state. Goa covers an area 3,702 sq.km, the density of the state is 394 per sq.km that is higher than national average 382 per sq.km, as per 2011 census, where density in the census, 2001 was 364 per sq.km, while the national average was 324 per sq.km.

### **1.8.2 POPULATION OF GOA**

The Goa is one of the tiny states in the whole country. The state has a total population of 14.59 Lakhs as per population census 2011. It could be seen an increase in state population as compared to the previous population census of 2001 showed a figure of 13.48 Lakhs. This highlight state has experienced a population growth of 8.23 percent within this decade. However, the population growth rate of the previous decade was some around 14.59 percent. The population of the male is slightly higher than the female population as there are 739,140 male and 719,405 female populations. The percentage of the Goan population is as small as 0.12 percent as compared to all of India's population.

### **1.8.3 SEX RATIO**

Goa's sex ratio is much better as compared to whole India's as there are 973 females for every 1000 males, whereas countries average is 940 females for every 1000 males as per population census 2011. In population census 2001 the sex ratio was for every 1000 males there were 961 females in Goa.

### **1.8.4 LITERACY RATE**

Goa is one of the highest literate states of the country, as literacy rate touching the level of 88.70 percent as per population census 2011. Were male literacy is slightly higher than the female literacy with 92.65 percent male literacy and female literacy with 82.16 percent. The corresponding figure for the year 2001 population census male literacy was 88.62 percent and female literacy at 76.47 percent.

### **1.8.5 INDUSTRIAL BACKGROUND**

Before the Portuguese conquered Goa, the territory enjoyed all-around success under the Kadamba rule. Though the economy under the Kadambas depended on agriculture, there was a wealthy trading class. Commodities like gold, silver, cotton cloth, paddy, black pepper, perfumes and betel leaves traded on a large scale. That attracted many traders to Goa. Smithy, the weaving of yarn, brassware, bamboo ware and jewelry were a few other activities prevailing in Goa, and some Arab traders settled in Goa dealt in trade of horses. As an outcome of the discovery of the sea route to India by Vasco da Gama, communications between Goa and Europe and other cities of India began to grow. The merchandise which Vasco da Gama took on his return journey fetched him sixty times the purchase price, after deducting the cost of the trip. This profitable trade was captured from the Arabs by the Portuguese. When the Portuguese arrived, Goa had already attained fame as an important commercial market. Goa had already expanded to comprise black pepper, cinnamon, cardamom, Gujarati and Bengali cloth, Chinese furniture, wax, ginger, and cloves. These were imported into Goa from other sources in the country and re-exported. Imports from Portugal included woolen and linen cloth, edible items, liquor, and arms and ammunition.

Goa experienced a real and significant revolution in its economy only when mining began. The first consignment of 50,000 tons of iron ore had exported in 1946, and since after that, there was no looking back for the mining industry. It helped the economic development of regions away from the coast. Besides creating jobs for labor actually-working at the mines, the industry is responsible for generating employment for truck drivers, mechanics, supervisors, spare parts shops, repair shops, grocery shops, small restaurants and eating places.

Goa received a boost in industrial activity during the period from 1993 to 2002 as an outcome of superior income tax status from the Government of India and a sales tax holiday from the Government of Goa. The help of these incentives, the state sustained to grow. Goa' GDP at current prices raised by 18% in the 2004-05 to 2009-10 period with the manufacturing sector growing at a healthy rate of 14%. However, growth has muted over the last few years due to the economic slowdown, and lack of a robust framework for industrial growth. The ban and closure of mining activities in the state have further adversely impacted the state economy in years 2012-13 to 2014-15. However, ban on

mining has been revoked from 21<sup>st</sup> April 2014 by Supreme Court and mining activities now getting in place but this ban forced people of Goa and Goa Government to search alternative job in various other industrial and agricultural allied sector.

**Chart No: 1**  
**Industrial Estates of Goa**



Source: Goa Industrial Development Corporation website.

The Directorate of Industries, Trade, and Commerce (DITC) is in charge for the promotion, development, and regulation of Micro, Small, Medium and Large Enterprises/Industries within the State of Goa. Besides this, DITC conjointly plays a

crucial role in assisting and coordinating activities associated with industrial development. Goa was traditionally a rural economy with a strong mining base. Due to ban and limitation on mining sector government is looking forward developing state with help and exploration of other various sectors like tourism, agriculture, and manufacturing industry sectors. Presently Goa with several developments has slowly transformed into a fast-growing industrial center with the help of Investment Promotion Board 2014. The first industrial estate in the state had established in the year 1966 at Corlim. Out of the twenty-two industrial estates, thirteen has located in the north district, and seven has situated in south district and one each in Daman and Diu.

### **1.8.6 STATE LAWS**

Numerous state level acts are also powerful instruments for environmental management and protection. Some of them are Town and Country Planning Act 1973 regulates urban and regional development and controls land use. Municipal Act 1968 has many clauses relevant to environmental concerns. Irrigation Act 1973 under section 84 makes it an offense to corrupt or foul the water for any canal to render it less fit for the purposed for which it has ordinarily used. The Goa Panchayat Raj Act, 1993 under section 88, empowers the village panchayat to penalize anyone found defiling water that is set apart for drinking purpose. The Goa Non-Biodegradable Garbage (Control) Act, 1996. Any person is committing an offense punishable under this Act. Either a company, every person who, at the stage of the commission of the crime, was in-charge of, and responsible to the firm for the conduct of the business of the corporation, as well as the enterprise shall be deemed to be guilty of the law-breaking. Will be responsible for being proceeded against and penalized accordingly.

## **1.9 ENVIRONMENTAL ACCOUNTING IN GOA**

Goa too nowadays is at the stage of great concern for the environmental conservation and protection. As past 70 years has firmly impacted Goa's economy as well as ecology, due to some of the significant ecological drivers that affected are Mining (Post 1946), Urbanization (Post 1961), Industrialization (Post 1971), and Tourism (Post 1972). This driver certainly helps Goa to change drastically in this 21<sup>st</sup> century as well. Several issues which need to look upon include waste management, pollution of wells in villages, air

pollution, noise pollution, afforestation, un-controlled construction, with little attention given to protecting the delicate ecosystem. Similarly, cutting of lush green hills, destruction of low lying khazan ecosystem, leveling of coastal sand-dunes, alluvial sand excavation, the impact of mining quarrying and several others. Nevertheless, Goa aspires to be a modern state in many ways, unlike some especially safeguarded land it has been a kind of open house to welcoming for new industries and other development activities.

So the environmental accounting also becomes an essential aspect that Goan business enterprises need to come up with, as Goa known for its natural beauty and hence it is a central point for an international tourist destination. This aspect of Goa brings an obligation to all industries to perform there all duties with ethical manner, making their contribution towards protecting and conserving the natural environment of Goa which is known internationally. These are some of the critical reasons why industries in Goa need to move towards the concept of “GREEN PROFIT GREEN GOA.”

## **1.10 SUMMARY OF CHAPTER**

As the introductory chapter provided a brief overview of environmental accounting and ethics, as well as its present status internationally within India and Goa. For further understanding the deeper meaning, knowledge, evolution, practicality, applicability, views and thoughts of researchers and other members of society on environmental accounting and ethical practices. Let's move towards the review of literature chapter that discusses in details about the various research articles, books, and empirical thesis and their finding, suggestion, recommendation, the scope for further research, and conclusion, that has lay-down a solid foundation for this empirical research study.



## CHAPTER – II

### REVIEW OF LITERATURE

A review of literature is an evaluative report of information found in the literature related to the selected area of the research study. It gives a theoretical base for the research and helps researchers to determine the nature of his research. The purpose of writing literature review is to convey to the reader what knowledge and different ideas have established on topic, and what their strengths and weaknesses are. For this research study review of the literature has been bifurcated into two distinct sections that firstly journal reviews and then thesis reviews.

#### 2.1 JOURNALS REVIEWS

- ❖ **(Vasile & Man, 2012)** Environmental accounting has designed both for external and internal users. The environmental management activity of an economic entity gives rise to certain costs and might bring benefits or savings. Environmental management accounting deals with the recording and analysis of these components. Environmental costs can analyze from both the point of view either environment protection or according to their association with the flux of materials and energy. Environmental management accounting has as critical objective obtaining useful information for the decision making. This accounting delivers the sustainable development of an economic entity's activities, the analysis of costs and benefits determined through the impact of the environment upon the activity, the progress of practices and policies on pollution control, choosing the materials that ensure costs minimization, and looking for possible recycling alternatives.
  
- ❖ **(Gray, 2013)** This research paper seeks to explore whether conventional financial accounting when it appears to genuflect to the 'environment' actually has anything substantive do with – or to say about – the natural world. It appears important to remember that conventional financial accounting is a predominantly economic – and

not very internally logical – practice that has no substantive conceptual space for environmental or social matters fundamentally. It has no space whatsoever for what Thielemann calls ‘market alien values’ – values like environmental concern. The paper re-examines why we might account at all and revisits why accounts which recognize environmental and social problems can be potentially very much important indeed. What appears clear is that while any account that wanted to reflect environmental and social difficulties may choose to use the technologies of accounting – notably debits and credits – there’s no essential reason why they may do so. If we desire to account for an environment, we almost certainly will not start with the somewhat unconventional and challenging foundations of conventional financial accounting.

❖ **(Jenkins & Yakovleva, 2006)** In recent decades, concerns about the sustainability and Social Responsibility (SR) of businesses have become an increasingly high-profile issue in several countries and industries, none so more than the mining industry. For mining, one outcome of the Corporate Social Responsibility agenda is the growing need for individual companies to validate their existence and document their performance over the disclosure of social and environmental information. This research paper explores recent developments in the reporting of such impacts and issues in the worldwide mining industry. It offers a detailed review of the progress of the media on environmental and social disclosure in the mining industry and the factors that drive the growth of such disclosure. A sequential analysis of the recent trends in disclosure using a case study of the world’s ten largest mining companies has presented. While there is ample evidence of increasing sophistication in the growth of social and environmental disclosure, there is sizeable variation in the maturity of reporting content and styles of these companies. The paper offers a simple classification of reporting companies, from ‘leaders’ to ‘laggards.’ Stronger leadership and co-operation from the top reporting companies is necessary to support the laggards of the industry.

❖ **(Singh, Jain, & Sharma, 2015)** The motivations to implement Environmental Management System (EMS) practices in Indian industries have explored empirically. The research study presents a survey of 104 industries from entirely different sectors to spot the main motivational factors and firms characteristics that confirm the adoption of EMS practices by firms. The empirical evidence suggested that the

comprehensiveness of the adopted EMS practices is positively influenced by relational motivations as firms consider their image, compliance, and prevention of environmental incidents as significant drivers to implement EMS practices. Firms are also anticipated to adopt EMS practices to stay competitive if other firms are implementing similar EMS practices. However, the results show that Indian firms do not contemplate innovation and cost saving as a significant motivation to use EMS practices. The findings additionally confirm that larger firms are more probable to adopt comprehensive EMS practices compared to Small and Medium Enterprises (SMEs). The outcomes show that compared to the service sector, firms in manufacturing, chemical and agricultural sectors are more probable to adopt comprehensive EMS practices. This study analytical framework is done based on multiple regression analysis. The testing of hypothesis carried out determines the overall Corporate Environmental Practices (CEP) of a firm. In seven different motivational factors and three characteristic variables have been investigated for Indian industries.

- ❖ **(Mirela, 2012)** This paper discusses environmental accounting information and its uses which act as a tool for making decisions that will impact both sections, financial performance, and environment. It also highlights the function of environmental accounting within an economic entity. Empiric Romanian study realized within ten enterprises in the city of Brasov concerning the level of knowledge and applicability of the environmental accounting and its correspondent legislation resulted in a series of conclusions that could interpret as the strengths, weaknesses, opportunities, and threats of the environmental accounting.
  
- ❖ **(Minimol & Makesh, 2014)** This research study was intended to find out the significant environmental parameters reported by Indian corporates as part of their environmental reporting practice. The initial survey was conducted by going through the official websites of top 25 Indian companies as per Economic Times ranking, January 2012 survey. The research study also focused on the extent to which Indian corporates practice, voluntary environmental reporting specific towards the environmental parameters identified. This study has established a model that classifies six aspects need to covered in environmental accounting to measure the ultimate environmental performance of the organization. This model aimed to present an

original view of the different activities to be undertaken by organizations for the smooth running of environmental accounting and reporting practices.

- ❖ **(Makori & Ambrose, 2013)** The objective of the research article is to establish whether there is any dominant relationship between environmental accounting and profitability of selected companies listed in Indian. The data for the study had collected from annual reports and accounts of 14 randomly selected quoted firms on Bombay Stock Exchange of India. The data of chosen companies were analyzed using multiple regression models, and F-Statistic tools have used. The critical findings of the study show that there is a significant negative relationship among environmental accounting and Earnings per Share (EPS) and Return on Capital Employed (ROCE) and a dominant positive significant relationship between environmental accounting and net profit margin and dividend per share has observed. Based on this it was advised that government should give a tax credit to organizations those comply with its environmental laws and environmental reporting should be made compulsory in India to improve the performance of organizations and nation as a whole.
  
- ❖ **(Murthy, 2007)** This research paper goes on to argue that business ethics and social responsibility are not unrelated. It demonstrates how it is necessary to distinguish between business philosophy and philosophy of business. Whereas “Business Philosophy” is driving forces of a particular business; relates to the vision of a company; may or may not include the ethical dimensions but in the case of “Philosophy of Business” which explains the moral principles that underlie business as a domain. It goes into the purpose of business and the ethical basis and consequences of business. Necessarily and undoubtedly it is concerned with the ethical foundations of business as a discipline. Through this dissimilarity, it develops a framework that relates the two – business ethics and CSR. It goes on to debate that there is a paradigm shift in the philosophy of business. This shift ends up in a framework whereby a new perspective on business ethics and social responsibility emerges. It has coined as corporate responsibility. It comprises of good governance, corporate social responsibility (“CSR”), environmental accountability. This paper conjointly says that these three different dimensions need to bring under one umbrella of business ethics.

- ❖ **( Ingole, 2012)** “Environmental Audit” objectives, need, and advantages has focused in this paper. The researcher also highlights the implementation and popularization of environmental audit in India. For evaluating the dependability of internal controls in achieving desired environmental results. An environmental audit is a practical management tool, which addresses itself to help a business or operation, to authenticate compliance with environmental requirements, to evaluate the effectiveness of the environmental management system, to evaluate risks and to identify and correct environmental hazards. Environmental audit scheme and its components help in assessing compliance with the regulatory prerequisite. It also helps in prevention control of impact of pollutant. It promotes the relationship between qualified technician professionals, individual industries, State Pollution Control Board, other public authorities and industrial association. Principle areas of environmental auditing are a material audit, energy audit, water audit, health and safety audit, environmental quality audit, waste audit, engineering audit, compliance audit. It also says that environment audit report must be published annually by the companies, mandatory for all Indian companies. In major polluting industries, environment audit at least once in 3 years. If not yearly should be made compulsory. Indian Association for Environment Management (IAEM) and National Environmental Engineering Research Institute (NEERI) can play a significant role in this regard.
  
- ❖ **(Batta & Bhatti, 2004)** The article explains how environmental protection is far more complicated in the developing countries than those in the developed countries. While striving to provide the basic necessities of life, the real struggle in the developing countries context is to archive a rate of growth, which is compatible with the environment. It classifies the environmental damage into two sub-heading that is “Resource Depletion Problem” and “Pollution Problems” where further by the friction of resource depletion problem is done based on ‘renewable’ and ‘non-renewable’ resource. Where pollution problems have done on the foundation of ‘production’ (source) and ‘consumption’ (sink), the important instruments used in environmental policy formulation for sustainable development are governmental involvement and techniques prompting polluter’s behaviors. Economics instruments taxes/charges; subsidies; tradable permits are some incentives based regulation applied for the sole purpose to modify the behavior of the polluting firms.

- ❖ **(S.Radha, 2004)** A major challenge for the 21<sup>st</sup> century is not the creation of wealth, but the management of health. Concern over the rapid depletion and degradation of world's biological resources and the implications of this loss on the global biosphere and human welfare have been mounting in recent years. Loss and modification of ecosystems and habitats are occurring at an alarming rate, although it is much difficult to quantify or on a global scale. Human life and health are now in great jeopardy, and the burden of disease and ill health raise questions on the developmental effort in the pursuit of global prosperity and wealth. Environmental challenges that the world face today are paradoxical. Poverty and affluence are the two extreme opposite causing a common problem of ecological damage. An examination of trends in human health at the end of the 20<sup>th</sup> century reveals incredible changes in cultural lifestyles with global cultural confluence but with the stable environment based health risks from small mosquito-borne diseases to chemical contamination. Around 17 million deaths per year have attributed to the infections and parasite agents in developing countries with high risks of diseases. Contaminated water and soil waste from households and industries remain one of the worst killers in the today's world. Many terminal disorders threatening the survival of human race such as cancer, AIDS or arteriosclerotic heart diseases are the resultant effects of extinction of species and forests. These are the grave situation, and it has reiterated that development efforts should be environmentally friendly to perpetuate development itself, after all, human survival depends on development without destruction of the environment.
  
- ❖ **(Namakonzi & Inanga, 2014)** This research study aims to find out what actions if any, manufacturing industries in Uganda are taking to enhance effective environmental management. The magnitude to which Environmental Management Accounting (EMA) has applied, as well as costs and challenges that these industries face in the procedure of implementing EMA to achieve functioning environmental management. There are few manufacturing corporations listed on the Uganda Securities Exchange (USE) out of total 60 companies were chosen, and 60 questionnaires had distributed respectively. The authors managed to get only 30 responses from 30 companies out of the 60 survey questionnaires distributed. The data analysis had based on statistical techniques like mean, median, mode, and percentage focuses on the presentation of detailed analysis, a summary of findings and provides a clear demonstration of the

information in graphs, charts, and tables. The research findings reveal that manufacturing industries in Uganda are, indeed, taking environmental issues seriously. Some firms are implementing internally developed environmental policies, setting environmental goals and objectives. Companies also hired environmental specialists or external auditors to facilitate the identification of environmental impact of the organization's activities, products, and services. Over 70% of companies always and often measure the resources quantity like water, energy, and material used by the organizations. However, few companies do this for emission, effluents, and waste

- ❖ **(Ahmad, 2012.)** The broad objective of the research article is to evaluate the EAR practices in the selected companies critically. However, the specific objectives of this study were first to identify the need for environmental accounting and reporting practices. Secondly to evaluate the awareness of the selected accountants as to the environmental accounting and reporting in the chosen firms. The third was to scrutinize the location of environmental information in the annual reports of the sample organizations during the year-2010. Fourth to identify the problems comprised in environmental accounting and reporting practices in the sample organization. Fifth to suggest some measure as to overcome the difficulties thereby improving environment accounting and reporting practices in the samples. The study is mostly based on Bangladesh only. Altogether 40 corporate annual reports of 40 companies have obtained by contacting the company sources. The data year is 2010. All the selected companies are the listed companies of (DSE) Dhaka Stock Exchange. The present study also has considered primary data to assess the awareness of the respondents as to the environmental accounting and reporting practices. A total number of 40 Chief Accountants, taking one (01) from each selected companies were interviewed by direct method with the help of a structured questionnaire. This study has examined the EAR practices in Bangladesh. It is encouraging to note that a developing country such as Bangladesh is making efforts to experiment with this new area of corporate reporting. The Bangladeshi companies those doing environmental disclosures are noteworthy and deserve appreciation, but it has observed that in most cases the quantity and quality of disclosures were less satisfactory and inadequate. Companies should show fines and penalties paid by the company, environmental liabilities of the company, environmental provisions, and environmental costs capitalized in the notes to the

accounts in their annual reports. The research and studies have to be encouraged in the field of environmental accounting and reporting.

- ❖ **(Singh & Dhingra, 2014)** This research aims to seek out the multi-dimensional ethical approach to environmental accounting and reporting practices taking place in India and abroad. What has been the change in reporting practices by Indian corporates? What drives the Indian companies to report on the non-financial matters? This paper principally focuses on the inclusion of non-financial issues within the corporate annual reports. An empirical survey was carried out, and also the questionnaires had administered to 122 respondents comprising of 75 academicians and 47 chartered accountants. The results of the study were tested using the t-test analysis. The research analysis suggests that several other firms should report on their social, environmental, and corporate governance performance and discover a method to express them in their annual reports. The reporting of data regarding the carbon emissions, energy use, pollution, impact on the local economy, should be made mandatory for companies.
  
- ❖ **(Kamarul, 2013)** The purpose of this research article is to review the interactions between business, the natural environment, and environmental ethics. Today, business corporations have broader responsibilities to society besides providing profits to their shareholders. According to the author, the more great duties of business corporations may include producing not only products but safe products, providing high-quality, reliable services and applying ethical business practices. Industrialization and manufacturing activities have contributed to the deterioration of the natural environment and, in turn, can lead to the destruction of the mother earth. Compared to people, the planet is considered to be relatively unimportant. Therefore, integrating of environmental, ethical considerations and commitment towards the natural environment into everyday business operations, as well as giving them equal weight as other business considerations, is a critical move. It has predicted that the most vital issues in the next century would be the issues related to the environment. The author saw that there is a linkage between environmental protection and economic growth. Any corporation pertaining towards sustainable development aims to achieve zero emission, zero pollution, and zero waste, however, to accomplish zero discharge or no pollution at all is impossible. Competitive advantage, to become environmental



leaders, maintains and enhance corporate image, reduce the long-term risk, benefits ecosystems and communities and achieve a firmer legal footing.

- ❖ **(Joshi, Suwaidan, & Kumar, 2011)** As the industrialization is also creating more environmental problems such as pollution, companies have started providing information about their environmental performance and policies owing to increased accountability. On the identical time, there has been an increasing awareness nationally and internationally on the disclosure of environmental performance, notably from those corporations that have a sudden and substantial influence on the environment like, power generation, mining, manufacturing. To provide information concerning the environmental implications of their operations. The primary objective of this paper is to examine the relationship between environmental disclosure practices of Indian industrial and factors influencing the level of environmental disclosure information in listed companies at the selected influencing variables. A sample of 45 Indian listed industries data had collected through their websites and annual reports. The multiple regression techniques are used to analyze the data. The evidence shows that there's a tendency to disclose the environmental protection information. However, the level of disclosures remains still low. The result of multiple regression support level of corporate environmental disclosure has significantly positively associated with firm size hypotheses in this study. However, hypotheses related to Age of the company (AGE), Accounting Firm (AF), Foreign Operations (FO), Profitability (PROFI), and Leverage (LEV) have not supported by the empirical findings in the Indian context.
  
- ❖ **(Sanjeeb, 2013)** Financial accounting is rightly said to be the language of business. It is through accounting; business communicates its economic results to others. In the current global scenario, financial reporting includes presentation and disclosure of accounting aspect, corporate governance, corporate social responsibility and narrative reporting. Among various business functions, the function of accounts and finance department is expected to be most responsible and act in public interest instead of satisfying the needs of a particular individual or community. The ethics in accounting and corporate reporting has become a vital problem of the financial sector. Satyam in India acknowledged the further need of practice of ethics in the concerned field. In these research, article attempt has been made by authors to discuss the concept of corporate reporting and ethics, its environment and importance, causes of unethical

practice in accounting. The principle of ethics and its threats, steps to avoid unethical practice, the role of a statutory body for ensuring ethics in reporting and benefits of ethical accounting and reporting. It is essential to understand that business and accounting ethics are a part of social responsibility. Being so, prospective accountants and business persons should be aware of the laws and practices governing their professions. Morality is often an incredible asset in money matters; internal control procedures must be strictly imposed to ensure that the business upholds its social and moral responsibility and the fairness and authenticity of the accounting system have maintained.

- ❖ **(Agarwal & Bhardwaj, 2014)** This research paper moves around developing an understanding of the Corporate Social Responsibility (CSR). Investigating into its concept and looking for its scope taking the case study of the TATA Group under (Mr. Ratan Tata) is one who has established the logic of responsibility towards the upliftment of common crowds and protection of the environment and development of the nation. Right from the ancient trade time to today's modern era of technology, the human has covered remarkably a long path. Undoubtedly profit is the driving force behind all this technological and economic development; however, each coin has two sides, growing stiff competition and business rivalries started taking significant charge of the quality, environment and also the society in general threatening to the peaceful environment of business and community. The Tata code of conduct conjointly implies that the company holds certain principles, based on value judgments that influence its policies and procedures. Tata Motors' emphasis on environmental management helps preserve the long-term health of folks and ecosystems and build strong relationships with local communities. A 200 liter of engine oil barrel can nowadays be used to test 170 engines instead of 85 engines. The wet garbage from their canteens is transformed to use-able organic manure to sustain greenery in the plants. In last three years, they have managed to reduce Green House Gas emissions by 22,581.62 tons of CO<sub>2</sub>. Some achievements of TATA are 'Golden Peacock Award for Corporate Social Responsibility' in 2011, 'Greentech Environment Silver Award' 2011, and Environmental Best Practices Award 2012. For bringing back and maintaining the overall balance within the economic and social arena, it is apparent to think deeply and act wisely about CSR. Each & every business organization owes some responsibility

towards the society, nation, and towards the world, as the universe provides with all human, material and natural resources required for any business organization.

- ❖ **(Gergely, 2003)** The research paper portrays environmental performance evaluation as a novel, innovative, relevant method or group of approaches, which is not free of difficulties, but ultimately leads to the right direction. Author simplifies method, via classifying into five clusters, based on their complexity. Statistical analysis of data-GEMS-HU {Global Environmental Management Survey in Hungary} surveying 370 manufacturing enterprise as population, author consider 40 (26+14) firms as the sample size of the study were 26 companies represent the ISO 14001 certified firm, and 14 represent the population of certified EMS firms. The principal objective of the present research article is to spread environmental performance evaluation; it tries to enhance the application of EPE over a guidebook for practitioners, exercises, training sessions, and demonstration project. The questionnaire asked questions in the following categories. a) environmental organization; b) environmental policy and strategy; c) integration (environmental measures applied in other fields of operation); d) environmental communication.; e) environmental information system; f) environmental activities (end-of-pipe); g) integrated environmental development (pollution prevention); h) environmentally friendly products and services; i) motivation; j) general data; respondent data; more information. To test this question descriptive statistics and multivariate statistical analysis have used, where demonstration project has carried out only one of the three demonstration projects brought real success. Environmental Performance Evaluation (EPE) is an applied tool, but only a few pioneering companies implement it in day-to-day practice in Hungary. Currently, the easily digestible EPE methods are the most popular ones, especially EPE through ISO 14031 using indicators, material and energy balances, and environmental cost accounting.
  
- ❖ **(Henri & Journeault, 2008)** This exploratory study aims to examine the importance of measurement and use of Environmental Performance Indicators (EPIs) within manufacturing firms. The study also investigates two research questions are: (i) To what extent are firm characteristics connected with the importance of measurement of various classification of EPIs? (ii) To what extent are firm features linked with global and specific usages of EPIs? More specifically, this article examines four uses of EPIs.

(i.e., to monitor compliance, to motivate continuous improvement, to support decision making, and to provide data for external reporting) As well as four characteristics of firms, namely environmental strategy, International Organization for Standardization (ISO) 14001 compliance, size, and ownership. Data were collected using a survey design. A random sample comprised of 303 Canadian manufacturing organizations based on the Scott's Manufacturing 2004 database, where the population of Canadian manufacturing organizations was 1500. The sample contains organizations that have 100 employees or more, and report sales of over \$20 million annually. These criteria are intended to ensure that organizations are large enough for strategic variables to apply and that management control systems have sufficiently developed. Two types of analysis are used to examine the associations among the four contextual factors and the importance of measurement and use of EPIs. First, a correlation matrix is used to provide preliminary evidence of the relationship between constructs. Then, analyses of variance (ANOVA's) are performed to compare the mean score of EPIs. The results of this study suggest three main conclusions. First, the importance of measurement of EPIs has associated with (i) firms having a more active environmental strategy, (ii) ISO 14001 compliant firms, (iii) larger firms, and (iv) public firms.

- ❖ **(Ismail, Aliza, & Faizah, 2014)** The purpose of this research article is to explore the environmental management accounting practices, specifically the environmental management accounting activities within Malaysian organizations. An online questionnaire for data collection has deployed to all ISO 14001 certified Malaysian organizations registered with the Federation of Malaysian Manufacturing (FMM). As at the completion of the year 2012, there have been 430 ISO 14001 certified firms registered. The targeted respondents were the finance managers, chief executive officers, managing directors, and other key personnel related to environmental management of the respective company. The usable response rate obtained for this study was 8.37% (36/430). Out of 52 responses were collected of which only 36 were usable. Tools used were like simple percentage. The survey discovered that these organizations to a great extent, have implemented environmental management accounting practices. The utilization of environmental management accounting practices may be helpful to overcome the difficulties of traditional management accounting that fails to include hidden environmental costs.

- ❖ **(Goswami, 2014)** This research paper attempts to address the development of corporate level environmental accounting and the problems associated with that. The study had undertaken after considering the environmental accounting and reporting adopted by sample corporations in India. Some of the objectives of the study are, first to identify the recent development of the corporate environmental accounting and reporting. Second to spotlight the corporate accounting and reporting practices in this regards. The third is to find out the major obstacles to the sound development of that practice. Sample selected were 12 companies from the list of top 50 companies of National Stock Exchange. Data has collected for annual report consulted for the financial year 2012-13. The author concluded that however, environment reporting had developed in the form of corporate reporting practices in India, it is found to be a lack of comparability and verifiability, the fundamental characteristics of accounting information. Hence it is expected that in the upcoming future the government and other accounting regulatory bodies may play a more active role in the development of environmental accounting and reporting by making it reliable and relevant to users.
  
- ❖ **(Samir & Hugh, 2008)** This research paper examines the benefits and restrictions of ISO 14001 in enlightening the environmental performance of corporate in developing nations. By blanketing an analysis of the standard with the experiences of knowledgeable stakeholders in India, the author also examines. (a) Possible motivations are driving Indian firms to pursue ISO 14001 certification, (b) The value of ISO 14001 certification in encouraging companies to improve their environmental performance, and (c) The potential role of ISO 14001 as a regulatory tool. This research based on interviews with an informed group of Indian. Industry 6, Regulators 2, Certification bodies 3, Consultants 4, Accreditation body 1, Non-Governmental Organizations 3 and a total number of interviewees 19. The article concludes that the value of ISO 14001 certification has intimately connected to the quality of the certification process and also with the effectiveness of the local regulatory system. Its primary benefit appears to lie in the positive effects associated with a well-implemented environmental management system, which improves a firm's ability to comply with environmental regulations consistently and efficiently over the long term.
  
- ❖ **(Zhonogfu, Jianhui, & Pinglin, 2011)** This research paper study on the correlation between environmental information disclosure and economic performance with the

gradual transformation of the future economy from the non-existence of environmental management to a new form of economy that focuses on sustainable development, the enterprise must shoulder with additional environmental management responsibilities. As environmental information disclosure and economic performance have an intrinsic correlation, the institutional arrangement of environmental information disclosure system will necessarily promote the economic performance. Variables of the study are economic performance, environment information release, control variable. This paper selected 445 listed companies in the manufacturing industries at Shanghai Stock Exchange in China as the research sample. The data are collected independently from among the environment information disclosure material of 2008 - 2009 year annual reports. Additional annual reports and the provisional announcements of CSRC listed companies and the financial data of sample enterprises from the CCER database, as empirical results show, the environment information disclosure has a positive effect on the economic performance. This paper suggests that the relevant government departments, the academic, and enterprises should actively cooperate in pushing forward the making of environmental management policies, which include the environment information disclosure system, the economic performance evaluation system or environmental accounting system.

- ❖ **(Bhatia, 2015)** The author says the search for smarter ways to control pollution has generated heated debate. The problem related to selecting the means or policy mechanisms to achieve environmental goals – can be a surprisingly complex task for policymakers. The traditional forms of environmental regulation took the form of a so-called command- and control regulatory approach. However, economists have consistently endorsed the use of market-based instruments. At least, in theory, market-based instruments minimize the aggregate cost of achieving a given level of environmental protection. The author says even after these advantages, market-based tools have been used far less frequently than command- and- control standards. The research paper seeks to identify, and evaluate economic instruments in attaining the goal of the cleaner environment; to address the concerns of a developing country concerning environmental protection and to look into few country's examples which have successfully achieved solutions to their environmental problems through the use of these instruments.

- ❖ **(Vyacheslav & Larisa, 2015)** This article considers philosophical underpinnings of environmental ethics as the ethics of human responsibility for being of life, the life of man and life of nature. This explanation of environmental ethics is communicated in the theory of responsibility by Hans Jonas. Drawing on the total axiologization of being, Jonas proves a new way of a man's being as "nature's trusted person." This article features a reflexive analysis of the theory of responsibility by Hans Jonas. This theory presupposes that the humanity can perish, but death may avoid. Fear is what exactly can help prevent the destruction of the humanity. In dissimilarity to Hans Jonas, the authors of this article assume that the "heuristics of fear" is not sufficient to turn the pre-apocalypse tide. As the authors argue, it is crucial to install modern industrial civilization with a new (environmental-ethical) development vector. The practical implication of Hans Jonas' theory of responsibility has demonstrated by the examples of environmental ethics and sustainable development concept.
  
- ❖ **(Rashida, Khalid, & Nor Irwani, 2015)** This paper explores significant ECSR dimensions and its possible impact on customers' positive and long-lasting relationship with the organization. Studies are exploring this idea limited inside the area of corporate governance with a structural level unit of analysis since the impact of ECSR initiatives on customer behavior or different marketing constructs is lacking. For this study convenience sampling technique has chosen. The 362 questionnaires have used for further analysis. The multiple regression analysis statistical technique has used. Analysis has also shown that consumers are further willing to buy from a company that displays a higher commitment to environmental safeguards, such as their willingness to purchasing quality green products, even at slightly higher prices.
  
- ❖ **(Lenguyen, 2011)** This article presents some empirical proof that aims to answer the latter question: will CSR practice influence a corporation's image and reputation? Questionnaires have utilized, and personal interviews were conducted to survey 400 stakeholders of the sample firm – Siam Cement Group (SCG) Thailand, considered a CSR pioneer in the CSR movement. The theoretical framework of this research article adapted from a research paper of Carroll's (1979/1991) Bhattacharya and Sen's (2004), and Oskamp's (1997) models as a base. Author discoveries that CSR programs that relate to legal, ethical, philanthropic, and economic concerns have been found to have a low to medium effect on SCG's image and reputation. It can decide that because of

its prominent practice, SCG has built an excellent corporate image and status in the community.

- ❖ **(Iqbal, Sutrisno, Prihat, & Rosidi, October. 2013)** This study aims to investigate stakeholder theory and legitimacy similarly eco-efficient connected to the effect of environmental accounting execution and environmental performance and environmental disclosure as an intervention on company image. The samples selected for study is 59 companies with purposive sampling technique. Investigation outcomes show that environmental accounting implementation is in place to affect company reputation, environmental information disclosure affects company value. Still, environmental accounting implementation has not been able to have an impact on company value over environmental information disclosure; also environmental performance has not been able to have an effect company image through environmental information disclosure.
  
- ❖ **(Carreira, Damiao, Abreu, & David, 2014)** This paper focuses on the Environmental Disclosure (ED) endorsed by firms, because of the strong demand for information and identification of the related data that pursuit the new legal requirements. The empirical analysis, at the longitudinal and exploratory level, measures the degree of disclosure of the environmental information based on the reporting perspective. The authors present an Environmental Disclosure Index (EDI) and discuss the increase of the Environmental Reporting (ER) over the time and disclosure level of items published in the firms' annual reports listed on the Lisbon Euronext Stock Market, from 2007 to 2009. The sample selected for this paper was 24 firms listed on Lisbon Euronext Stock Market. The EDI values, over the three years, tend to increase which allows authors to conclude that the disclosure level of ER has increased over time and there have been more and more items of environmental matters published in the firms' annual report.
  
- ❖ **(Joshi, Krishnan, & Lave, 2001)** This research article examines the extent to which accounting systems separately identify all the costs of environmental regulation. Author estimate the relation between the "Visible" costs of regulatory compliance (costs that firms' accounting systems correctly classify as "environmental") and "Hidden" environmental costs embedded in other accounts. This study has utilized plant-level data from 55 steel mills to estimate hidden costs, and track up with



structured interviews of corporate-level managers and plant-level accountants. Empirical evidence display there is growth in the visible cost of environmental regulation is connected with an increase in total cost, which has hidden in other accounts. The discoveries recommend that inappropriate identification and accumulation of the costs of environmental compliance be likely to distort costs in companies subject to environmental regulation.

- ❖ **(Cetindamar & Husoy, 2007)** This research article shed some light on understanding why corporations implement environmentally responsible behavior and what impact this adoption has on their performance. An empirical research study that focuses on the United Nations (UN) Global Compact (GC) initiative as a Corporate Social Responsibility (CSR) mechanism. A survey had conducted among GC participants, with 29 responded. The outcomes, although not conclusive, as it indicates that companies have more than one reason for implementing environmentally responsible behavior and that ethical and economic reasons co-exist.
  
- ❖ **(Malarvizhi & Yadav, 2008)** This research article sets out to examine the overall trends in corporate environmental internet reporting practices. This research paper aims to gain an insight into the corporate environmental internet reporting practices of selected firms. The survey was conducted by going through the official websites (Annexure-1) of 24 top Indian companies (Listed on the stock exchange of countries). These top companies had selected as per Economic Times ranking, January 2007 survey. Authors have grouped these companies included in the sample, into two different groups that are manufacturing (Pharmaceuticals, Automobiles & Chemicals, Oil & Energy and Construction) and non-manufacturing (Banking, IT & Communication) sectors. The objective of the research article is to understand the sector-wise practices of corporate environmental reporting. So this study can provide an important input to the various environmentally sensitive interest groups in understanding the relevance of corporate environmental accounting and reporting practices. The data collection and analysis sheet were framed to collect data on, significant environmental indicator areas, as acknowledged by the World Business Council for Sustainable Development and by the Global Reporting Initiative. The most appropriate types of environmental information, as identified by them are environmental policy; environmental impacts; environmental management systems;

environmental targets; environmental performance disclosure. The author concludes through analysis that a major challenge to reporting community at large in India is to improve comparability among environmental reports. Many of the reports analyzed by the author does not explain how Indian corporations choose, which are issues to be addressed or left out in its environmental report. It is left to the will of readers to draw their conclusions. The author further observes that the incorporation of environmental costs, benefits, and concerns into mainstream financial reporting, in India is on developing stage at present - but it is sure to grow in the near-future. Contribution and commitment by companies towards environmental management practices appear to restricted due to lack of regional reporting guidelines.

- ❖ **(Grade, April-June, 2011)** Authors say most businesses in India act most of the times ethically' could be an incontrovertible fact that the general public doesn't realize most of the times! It is a standard perception that a business cannot be run ethically under current conditions so most people in business would be primarily unethical. The principal cause for such misperception is the meaning of the word ethics itself. "Your ethics are completely different from mine." Ethics depends on the one's viewpoint he/she take. The article also explains the difference between morals, ethics, and laws. Author additionally showcase present business environment in India have characterized by four crucial socio-economic and political parameters. First a functioning democracy, with an independent judiciary and a public press. Second a free market, a globalized economy with an active private sector. Third an Easy of entry and exit for businesses. Fourth an outsized variety of NGOs -voluntary non-government organizations for social causes are engaged.
  
- ❖ **(Rebelly & Ragidi, May - 2008)** These papers investigate the connection between corporate governance and business ethics in Indian business contest. Though return on equity is essential, equally important is conducting business without compromising of principal. The author says a company's leader is to blame for setting customary for what is and isn't acceptable worker behavior. It is vital for managers to play a vigorous role in creating an operating surrounding where employees are inspired and rewarded for acting with ethical manner. Failure in corporate governance could be a real threat to the long run of each corporation. Whichever company got reputed for ethical behavior in this competitive marketplace it engenders not solely customer loyalty however

additionally employee, society loyalty. Businesses must adopt strategies and policies that embrace environmental protection, whistle processing, ethical training programs and so on.

- ❖ **(Purdy, 2013)** The article says forty years past, at the birth of environmental law, each legal and philosophical luminary assumed that the new field would have intimately connected with environmental ethics. Instead, the two grew dramatically apart. Environmental regulation has perpetually grown up through changes in public values; for this and other reasons, it cannot do therefore without ethics. Law and ethics are most applicable to one another when there are substantial open questions in environmental politics: lawmakers act only when some moral clarity arises; the however law can itself assist therein moral development. This method is correct currently in an exceedingly set of rising issues: the law of food systems, animal rights, and temperature change. The author explains the new relationship between law and ethics. Ways in which of understanding modification in Environmental Ethics 1. Hippocrates's restraint 2. Who are we together ? 3. Being who one is: Personal ethics. 4. Aesthetic response and ethics. 5. Acting, being and seeing: Virtue ethics. Environmental law is one of the settings through which moral development takes place.
  
- ❖ **(Iona & Gheorghe, 2014 )** The paper "The trendsetter role of technologies in waste management towards the sustainable development" presents the leading important IT technologies that have contributed to the identification and implementation of latest sorts of economic and social development that has taken into account, the assessment of the environmental impact of merchandises throughout their life cycle process. Technologies similar as Decision Support Systems (DSS), remote sensing and Geographical Information Systems (GIS), online web services, virtualization and cloud computing are examined regarding the trendsetter role and of the impact on the sustainable development of society. This paper focuses on the problem of the waste management and the role of IT to support management activities. In the context of the sustainable waste, the prediction is of great interest to the businesses involved within the entire chain of waste management, to the local government in a direction to assess the expenses and establishing the budgets.

- ❖ **(Notarnicola, Sala, Anton, McLaren, Saouter, & Sonesson, 2016)** This paper debates the challenges for life cycle assessment arising from the difficulty of food systems and endorses research urgencies for both scientific development and improvements in every-day implementation. The most problems highlighted in the analysis have associated with entirely different methodological features. Firstly, there's a necessity to move beyond the modest rationale that more productivity per hectare is sufficient to ensure growing eco-efficiency. These advise a desire to search out a balance between quantities and qualities in addition to exploring prospect for implementation of semi-quantitative models in LCA. The goal must be to have comprehensive and scientifically sound measures.
  
- ❖ **(Elliot, March 2011)** The research conveyed here undertook a three-phase approach of choosing, analyzing, and synthesizing relevant literature to develop a holistic, Tran's disciplinary, integrative framework for IT-enabled corporate transformation. The attention on business transformation is since business has recognized as being a crucial contributor in understanding the challenges of environmental sustainability due to its potential capacity for revolution and change-locally, nationally, and globally. This research paper also serves as a resource base for researchers to start to undertake vital information structures and multidisciplinary work toward the objective of environmental sustainability. Through selection and analysis of illustrative examples of current work from twelve academic disciplines across six core classes, the framework addresses the critical problems of uncertainty: Firstly what's meant by environmental sustainability. Second, what are its key challenges, third what does have done concerning these obstacles, fourth what must need to do?
  
- ❖ **(Jamil, Faidzulaini, & Amin, 2015)** This study investigates factors and barriers that influence the practice of environmental management accounting (hereafter referred to as EMA). This research focuses on small, medium enterprises (hereafter referred to as SMEs) specifically, Malaysian small medium manufacturing firms. This study employs a postal survey to collect data. Sample companies have derived from the directory of the (FMM) Federation of Malaysian Manufacturers. From selected SMEs companies, 350 samples of questionnaires sent to respective managers, solely 32 (9%) were returned and found to be usable. This study has made use of descriptive analysis and regression analysis to analyze the data. Study reviles that with increasing bullying

pressures, manufacturing SMEs are more willing to practice EMA. The finding conjointly shows that financial constraint is the primary barrier to the development of EMA in the manufacturing SMEs. The insufficient environmental information (with respects to actual costs and benefits), and skills conjointly restrict the incorporation of environmental issues into the accounting systems and practices. This study finds that the absence of a guide to EMA is additionally a barrier to the inclusion of environmental concerns into the present accounting systems and practices.

- ❖ **(Jose & Saraf, 2013)** This study investigates the top 100 companies of India's towards the sustainability initiatives across multiple variables connected to sustainability. This study discloses significant variance in reporting across sectors as well as on the variables stated. The best-reported variables were associated with corporate governance, followed by those associated with CSR initiatives and measures to enhance operational potency. Most initiatives within the space of CSR targeted on four areas those are healthcare, community livelihood, education, and infrastructure development. Operations-related actions comprised resource conservation like energy, water, paper and waste management like emissions, solid waste, and water. Authors also identified that less than 20% of the firms those were surveyed found presently disclose information on sustainability issues connected to the supply chain. The sectorial variations in reporting were also crucial highlighters. Like electric utilities, metals and mining, cement, and information technology sectors beat all other industries on most of the indicators. The real estate, TV, and telecom, pharmaceuticals, and banking and finance sectors found not disclosed as much as the others did. The study additionally highlights areas for improvement, as voluntary sustainability reporting found to be still limited. Disclosures on CSR finances and donations were found to be near-absent.
  
- ❖ **(Madrakhimova, June 2013)** The concept of CSR formed in the whole world recently, about 60 years ago. Before this era, there were different standards and regulations within these areas of corporate governance, corporate ethics, and relationships with competitors, responsibilities towards the society and the country. Social policy guidelines and principles have not been advanced at all because there was the use of the "casual" approach. However, from the late 60s–70s leading U.S. and European corporates have begun to come to an understanding of the necessity to unite

entirely different parts of corporate policies related to the relationship of the firm with the environment, and to the formation of a single integrated approach to communication with society. The core reasons for the fast progress of CSR in the 1970s, in developed countries, was because of the failure of customers to purchase goods and services of irresponsible industries, as well as the development of the trade union movement. At the equivalent time in Western Europe and the United States ratcheted up the labor and environmental legislation, there have been public policy initiatives geared towards developing the CSR.

- ❖ **(Gautam & Singh, 2010)** This research paper scrutinizes in what way India's top 500 corporates view, and conducts their CSR, and identifies leading CSR practices and list these beside Global Reporting Initiative standards. It is a cross-sectional study which is exploratory. It includes secondary data collection and usage of content analysis technique to measure CSR practices of companies functioning in India. Find out the present scenario of CSR activities in India. For this purpose, firstly the social aspects by organizations like OHSAS, GRI, and ISO, were streamlined for gathering & better understanding. A list of 500 companies had taken from Karmayog from Dun & Bradstreet's 2006 edition. The key findings of the study are that CSR is currently presented as a comprehensive business strategy, arising chiefly from performance considerations and stakeholder pressure. Businesses consider their communication with stakeholders and impact of its business on society as essential matters. CSR strategies vary with turnover and profit. The study proposes that business and CSR strategy seem to be on a convergent path, towards business and CSR integration across the company. Numerous corporates spread their CSR funds very delicately across many activities. Each firm defines CSR in their ways as per their desires. CSR is on an increasing learning curve and has mainly driven by philanthropy.
- ❖ **(Verma & Kumar, 2014)** The purpose of this research study is to investigate the expenditure pattern of corporates towards CSR activities in the stage of voluntary spending and based on the results, assess whether attachment of such a provision in the Act was necessary or not. The sample consists of 30 companies included in BSE Sensex from 2001 to 2012. The analysis has done on the foundation of a number off companies spending on CSR, details of CSR expenditure, amount of CSR spending as a percentage of sales and profits for each year and on an overall basis. The analysis of

the study shows that the CSR spending has been very-low as a percentage of revenue and profits during the stage of voluntary spending. The results also suggest that spending on environment and pollution control is not on the priority list of companies. Even though the impact of CSR activities cannot always evaluate regarding fund allocations, still it is one of the utmost essential indicators of the engagement of companies with society. The author also concluded based on their finding, that insertion of this provision is an appropriate step by the regulators to make corporates socially more responsible.

## 2.2 THESIS REVIEWS

- ❖ **(Iype, 2005)** To overcome the threats to our environment, we should examine those underlying concepts, attitudes, and ideas involved in the relationship between humans and their environment. Environmental ethics is that emphasizes careful management or stewardship approach to nature. The relation between man and his environment may have discussed regarding the following three perspectives: a) Man's dominion over nature, b) Man's stewardship in nature and c) Man's participation in nature. The study discusses "The Religious Foundations of Environmental Ethics" takes a critical research study of the religious doctrines and beliefs as embodied in the major religious traditions of Christianity, Islam, Hinduism, and Buddhism. Post Environmentalism tries to problematic the deep-seated innate spiritual concern for nature, which the secular society and the consumer culture have suppressed. According to Post Environmentalism, the maturing of a person consists in moving from self-realization to universal perception. Post Environmentalism is a new vision of the relationship between global society and nature. The Post Environmentalism movement attempts to bring a stable community with at least four conditions: (a) Minimal ecological disruption (b) Maximum conservation of materials and energy (c) Zero population growth (d) The social circumstances in which the first three conditions could have enjoyed.
  
- ❖ **(Japee, 2012)** This study was intended to find out the primary environmental reporting practices. The principal hypothesis has tested here is that companies in India do not give elaborate reporting on environmental issues. The 100 Indian listed companies

selected from various sectors to analyze which industry is more aware towards environmental issues and disclosing environmental matter in their annual report. This study analytical framework has done with the help of multivariate analysis. Certain norms and parameters are set for environmental disclosure by the author the analysis indicated that there were wide variations in the format and content of corporate environmental disclosures. Though all the companies gave in detail statutorily required information on energy conservation, voluntary reporting was not the order of the day. The majority of the sample companies gave only positive information in the annual reports, however; a few companies disclosed negative information. To conclude, environmental reporting in India is still at infancy stage. Formal corporate environmental reporting is not directly regulated in India and because of this reason; companies in India enjoy the significant freedom to choose which issues and aspects of the environment want to disclose to the public. Second part one of the objectives of the study was to examine the need for a specific regulatory framework (including accounting guidelines, principles, and standards) for the EAR in India. For this purpose, two questionnaires were designed keeping in mind guidelines issued by professional accounting bodies. The first questionnaire was utilized to obtain opinions of chartered accountants. Then 200 CAs were selected from a directory prepared by the Institute of Chartered Accountants of India. From them 150 responses were received, of which 100 useful ones had used in the final analysis. The qualified accountants and the senior executives in large manufacturing companies felt that environment is a big challenge for business these days. The CAs, in general, was of the opinion that companies should establish EMS to meet these challenges. Establishment of a functional EMS helps in maintaining clean and green environment around the factories, controlling pollution emission and thereby meeting legal standards in this area.

- ❖ **(Kumar, 2012)** The objective of this thesis is to (i) Examine the needs and importance of environmental accounting and reporting practices in India. (ii) Study and analyze the different existing concepts, theories, models and legal framework of environmental accounting and reporting practices followed in India and abroad; (iii) Assess the nature and status of corporate environmental accounting and reporting practices of the selected companies in India. (iv) Develop the Environmental Disclosure Index (EDI) of selected Indian companies on the foundation of the accounting and reporting



performance of sample companies. (v) Analyze whether there is any significant correlation between the size of the selected company and Environmental Disclosure Index (EDI); (vi) Suggest the appropriate measures for improving the existing environmental accounting and reporting practices in India. As per Government of India in its gazette notification has identified 29 categories of projects where environmental clearance required from Central Government as per EIA (Environment Impact Assessment) notification in 1993. Among those 29 categories ten major polluting industries a total of 100 sample companies taking ten companies from each of selected polluting Indian industries which have listed in Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) have been considered in this study. Tools used are mean, standard deviation, range, frequency distribution, correlation analysis. It has observed that the environmental accounting and reporting performance of Indian companies are advancing very slowly with poor environmental disclosure practices. This study has also revealed that almost all the sample companies under investigation have disclosed quantitative information in directors' report concerning to conservation of energy to comply with the provision of section 217 (1) (e) of the Companies Act, 1956, as amended in 1988. The non-ferrous metal industry under study has shown impressive performance regarding environmental management followed by Bulk drug and Pharmaceutical, Cement and Chemical fertilizer industries. The abysmal performance has observed in the case of most polluting industries like Tyre, Plastic and Steel regarding environmental management.

- ❖ **(Ramesh, 2005)** This thesis gives a comprehensive approach to judge the past environmental history and present scenario of the industrialization and environmental quality in-order to prepare an environmental management plan for the sustainable industrialization of Pondicherry region in line with the recent guidelines for environmentally sustainable industrialization from international and national organizations. This study is envisaged with the following primary objectives first to document the rate of growth of industries and the resultant growth in the population and the other related infrastructure in Pondicherry region. Second to evaluate the changes in the ambient air quality, water quality related to industrialization along with the generation of industrial solid waste and their impacts. Third to study the changes in the land use pattern induced by industrialization and their effects. Fourth to forecast the future environmental scenario related to industrialization. Fifth to prepare an integrated

environmental management plan for sustainable industrialization of Pondicherry region. Monitoring air quality of the research areas had done in an extensive manner that comprises an appropriate selection of sampling sites, methodological planning, and analytical procedure. A set-up of air quality monitoring stations in the research study area was established based on nearby sources of air pollution similar to domestic chimneys and houses where mostly biomass fuels such as wood, cow dung, have used as fuel. Sampling sites were selected at least 100 m away from such sources. Accordingly, eleven ambient air quality monitoring stations had identified. The stipulation of the Central Pollution Control Board (CPCB), guidelines on ambient air quality monitoring and in harmony with the practice of contemporary research work. This study revealed that the natural resources mismanaged in Pondicherry region in the process of industrialization. It is need of the hour for the Government to take a stringent policy decision by a future ban on high pollution potential industries. The government policy on industrialization in Pondicherry as in many other states is strongly dependent on political/administrative decision rather than on the prevailing environmental conditions. To ensure the on-going suitability and effectiveness of the environmental management system, a comprehensive and visionary industrial and environmental policy must be established and implemented at defined intervals for the government to review and evaluate the efficacy of the environmental management system.

- ❖ **(Chaudhary, 2011)** The objectives of the proposed study are (a) To examine the environmental problems both in urban and rural India. (b) To examine how India is the world's sixth largest and second fastest growing producer of greenhouse gases. (c) To find out major pollution-causing industries in India. (d) To highlight how Delhi, Mumbai and Chennai and three of the world's ten most polluted cities. (e) To provide how two-thirds of city dwellers lack sewerage; one-third lack potable water. (f) To show how India urban population grows the equivalent of another New York City every year. These equal to a projected urban population of over 500 million in 20 years. (g) To focus environmental audit, its emergence, scope, objectives, and applicability in a developing country like India. (h) To examine useful environmental tools like Environmental Impact Assessment (EIA) and Environmental Management System (EMS) for better results of management. An Environmental Management System (EMS) is a systematic method of dealing with the environmental aspects of any

organization. It is a 'tool' that enables an organization of any size or type to control the impact of its activities, products or services on the natural environment. Environment protection becomes more and more important for the Indian municipalities and industries either to meet high international business standards or to increase tourism or standards of living. Environmental management is an important aspect not because it can be used for conservation of the environment solely for the environment's sake, but rather the conservation of the environment for human kind's sake.

- ❖ **(Tiwari, 2013)** The work of thesis covers the several aspects of Environmental Accounting and Reporting in Indian public and private firms since liberalization the present work concerns itself with the comparative analysis of private and public sector Indian firms and goes to examine it from numerous angles. Also, the focus is on environmental auditing and environmental regulations. The objectives of the study are first the significant challenges faced by business for environmental protection and management. Second the significance of environmental accounting in public and private sector Indian firms. Third the significant cost of environmental accounting and reporting in Indian private and public sector firms. Fourth nature of disclosure of environmental accounting and reporting in Indian public & private sector firms. Fifth the periodicity of reporting. Sixth the essentiality of environmental auditing for superior environmental accounting and reporting in Indian private and public sector firms. The methodology that has adopted in this chapter is comparative analysis and chi-square ( $X^2$ ) test for hypothesis testing. A positive relation between the ownership and significance relationship between environmental accounting in private and public sector Indian firms has established. The analysis discovered that public firms as compared to the private firms are slightly more in favor of environmental accounting and reporting. A significant relation between the cost of environmental accounting and reporting and ownership has also found. There is a significant positive difference of opinion about the cost of environmental accounting and reporting in Indian public and private sector firms. Public sector companies indicated comparatively a higher cost of environmental accounting and reporting. There is no significant positive dissimilarity among attitude of private & public sector Indian firms concerning towards essences of disclosure toward environmental accounting and reporting. A uniformity regarding environmental auditing for better environmental accounting and reporting in Indian public and private companies have observed. Although both the public and private

firms have disagreed for mandatory environmental auditing each of them found it to be very essential.

- ❖ **(Angel & Philip, 2003)** The thesis aims to identify the factors that determine when the benefits of implementation EMA (Environmental Management Accounting) outweigh the costs. Where author consider as Environmental Management Accounting (EMA) is a management tool for the better consideration of environmental costs, even after such benefits, many organizations are uncertain about the outcomes of EMA. Therefore, reluctant to implement such a tool. These are the main reason the current paper aims to identify the factors that determine when the benefits of implementation outweigh the costs, To help organizations to evaluate the need for EMA. So that EMA will helpful for companies to reveal their real environmental costs and to identify cost reduction opportunities. The methodology of this research includes a literature review and analysis. The necessary information was collected mainly through personal interviews and questionnaires. A questionnaire had sent to 27 persons (from different plants). The author concludes general accounting does not provide adequate information about the environmental performance and costs and this makes them more difficult to manage. A solution to this problem is Environmental Management Accounting (EMA). Which act as a tool for accurate allocation of costs to products and processes, tool for improved investment appraisal, factors determine the need for precise cost allocation.
  
- ❖ **(Bram, 2013)** The primary research question of this thesis is that what could be the possibilities to narrow the gap between theory and practice in green environmental accounting? This question carries two sub-questions, in particular: Firstly, what are the leading causes for the existence of a gap between theory and practice in green environmental accounting. Second, would it be possible to strengthen environmental accounting practices by underpinning them with a theoretical foundation? The author puts his view as there is much confusion between theory and practice about basic concepts such as 'rent' and 'price.' Cooperation is ecosystem accounting. So far, the use of spatially explicit data such as remote sensing data within environmental accounting has limited. These may change, as land and ecosystem accounting is an emerging area with-in environmental accounting. The use and integration of such data set, however, require further cooperation between multiple scientific disciplines.

- ❖ **(Nair & Francis, 2003)** The ambitions of this thesis are first to identify crucial issues in environmental protection in the production of fertilizers. Second to evaluate the extent to which the national and international norms/guidelines regarding pollution control and environmental management in fertilizer plants have implemented in the fertilizer industry in India. Third to find the reasons for the non-compliance if any, to those norms and guidelines by the fertilizer firms in India. Fourth to realize the problems encountered in environmental management in Indian fertilizer plants, and fifth to suggest, on the foundation of the above objectives, framing guidelines for an environmental policy that will foster the development of fertilizer industry in the country without degrading the environment. This study confined to the large-scale sector of the Indian fertilizer industry. The fundamental of the research, based on detailed primary data collected from a representative sample of the fertilizer firms. From 29 major fertilizer manufacturing firms in India. A sample of 15 plants from 6 firms has taken for the detailed study based on vintage and technology. Primary data related to the research was gathered from the sample firms using a questionnaire and through personal discussions with the concerned executives. The author has identified some of the crucial issues in environmental protection in the production of fertilizers, the national and international norms and guidelines regarding pollution control in the fertilizer industry, the extent to which these issues have tackled in operating plants in the country and the problems encountered in environmental management in fertilizer plants. The study revealed that the fines have been successful in maintaining the characteristics of the effluents and emissions discharged from the plants within the limits of the stipulations of the regulatory authorities. Most of the environmental issues in the units are addressed precisely along the lines in the developed countries and follow guidelines that are compatible with similar international norms and practices. There is scope for further improvement. Hence, for further developments in this area, a policy guided approach is necessary.
  
- ❖ **(Damian, 2006)** The authors try to explore in this thesis whether environmental management accounting can be implemented to assist an Australian cogeneration firm in refining both its financial performance as well as its environmental performance. Cogeneration or ‘combined heat and power,’ in this individual case, comprises the simultaneous production of heat and electricity utilizing a single fuel, which is, natural

gas. The heat generated is then utilized to produce steam to meet the customers' necessities as well as increase the production of electricity. Therefore, cogeneration delivers greater efficiencies compared to traditional electricity generation procedures because it uses heat that would otherwise get wasted. Also, greenhouse gases emissions can reduce substantially. The methodology taken in this study is to assess whether there is progress in the energy efficiency of the cogeneration plant, which can lead to a reduction in greenhouse gases emissions. An enhancement in energy efficiency means that either: 1. less gas is consumed, thus resulting in costing savings; or 2. Whether more electricity has generated for the same quantity of gas consumed, that leads to an increase in income and consequently profit. This research study, based on a case study of a cogeneration company, the objective of this study was to explore if EMA could have applied in assisting a cogeneration company to accomplish its financial goals without overlooking its environmental performance. This research study concludes that environmental management accounting can help the case study company improve its financial and environmental performances. An environmental management accounting system helps in providing the physical information that is not available within the existing management accounting system. Physical data or information such as the physical quantities of electricity, gas consumed, and steam produced, and greenhouse gases emitted, such information certainly can assist the company in decision-making relating to refining plant efficiency similarly reducing greenhouse gases emissions.

- ❖ **(Sujit Kumar, 2000)** This Thesis speaks about Environmental Accounting: The Emerging Agenda for Corporate Accounting and Reporting. The primary objectives of this research study are the nature of sustainability in the context of business entities, the role of accounting visa-verse, the sustainable development the area where current accounting practice has to change; the study seeks to suggest a tentative framework for environmental accounting and reporting that seems relevant to the corporate entities. Research methodologies used by the author are some personal interviews with the corporate managers and accountant. Also reviewed relevant environment acts and rules, surveyed published books and articles, the author has examined several corporate annual reports of India and abroad. Where study highlight that eco-balance approach which involves detailed input-output analysis through the system boundaries of the organization seems to offer some promise in confronting the issue of sustainability at

the organization level. Where very few companies are on the leading edge in introducing these physical environmental accounting techniques with increasing degree of sophistication, beyond their traditional financial accounting mechanisms a vast majority of the company are prone to use simple descriptive information about the environment. It has also observed in the research that companies either lack knowledge of this technique" or there is a lack of volition on the part of the companies to implement this innovative means.

### **2.3 SUMMARY OF CHAPTER**

The review of the literature has touched all the aspects of environmental accounting and ethics and provided the core ideology, historical background, present status, ability, and applicability. After going through this intensive theoretical foundation, research methodology chapter has shaped. This chapter discusses the research problems those are needed to be taken care, different research gap which need to be bridged. Based on this objective's of the study has framed. Similarly, the hypothesis has formulated, data and methodology have been outlined to attain them. This chapter also deals with tools and techniques which will utilize for data analysis. Even, discuss the limitation of the study and explains the structure of the thesis.

## **CHAPTER – III**

### **RESEARCH METHODOLOGY**

#### **3.1 BACKGROUND OF THE STUDY**

Environmental concerns have emerged in recent decades as a significant aspect of the discussion in the problems of economic development and growth. Such anxieties have taken, among other things, the form of global warming; atmospheric, water and soil pollution caused by industrial activities; and the rapid decline of forest areas, noise pollution, and chemical wastes dumped into oceans and rivers. All these problems commonly connected with industrialization and economic growth & development, but is it an essential condition of economic growth that the natural environment has to suffer? Opined that this is not so, where the prospects of sustainable development & growth are in sight. Subsequently, the pursuit of sustainable development & growth as an object of policy is now much in fashion; and governments of different countries have long engaged in setting up regulatory, voluntary, incentive-based, informational and cooperative instruments of policy geared towards promoting sustainable development.

This policy trend has a sensitive concern about environmental accounting theory and practice worldwide. In years past, both corporations and individuals often ignored environmental issues. However, the time has changed as stakeholders now realize the effects of waste products as a potential source of damage to the environment. Most people nowadays realized that preserving clean air, water and land stand much more vital than to lower cost of products for consumers. These, therefore, make people willing to pay more for products that are environmentally friendly. Several corporations are nowadays interested in becoming green, as most of the investors place a high value on environmental responsibility. Regulations have also been established to govern the waste management and to ensure that corporations are environmentally conscious. Some establishments have had to clean up their past environmentally unfriendly behavior. However, most firms have established an excellent reputation for being environmentally friendly organizations. (Uwalomwa, January 2011)



Ever since 1990, environmental accounting has been quickly introduced and utilized as a useful tool for environmental management. Universal leading companies around the world, especially in Australia, Bangladesh, China, Japan, Malaysia, Netherland, New Zealand, Norway, and Turkey have applied environmental accounting to enhance their eco-efficiency and resource productivity. Also, the increasing external pressure from many stakeholders such as financial institutions, government, socially responsible investors, and community lobby groups (i.e., members of host communities) among others, nowadays makes companies have more interest in environmental accountability issues. In line with this trend, the quick increase in environmental costs has nowadays caused companies to begin to integrate environmental aspects into their managerial decisions at all levels.

Nevertheless, measuring and reporting environmental, monetary performance is still in its infant stage in spite of the development of numerous methodologies and practices. In this context, environmental accounting has considered as one of the essential tools in adopting successful environmental management. These suggest that the traditional accounting system, which handles most environmental costs as over-head cost, is insufficient to provide managers with proper information for their strategic decision-making. In today's business paradigm, shifting from traditional-profit focused management to progressive environmental management has become an important factor in strengthening corporate competitiveness. Universal leading companies have come to realize that environmental accounting can play an important role not only to prevent or restrict adverse environmental impacts but also to facilitate positive and proactive actions. (Banerjee and Bobby 2002)

### **3.2 STATEMENT OF RESEARCH PROBLEM**

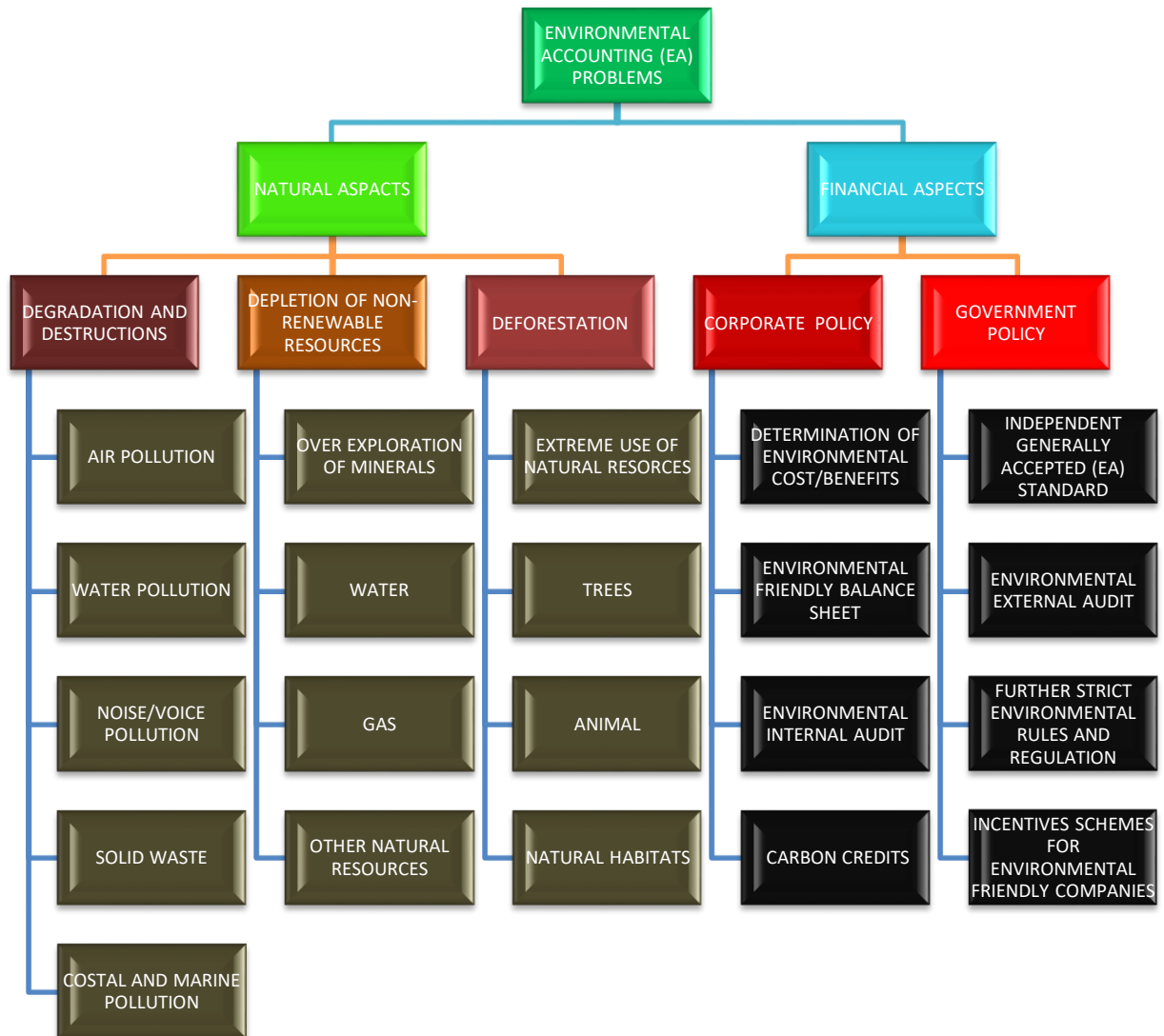
There is no solidarity as to the constituents of environmental benefits and costs and their measurement. These pose a challenge in the form of quantification of environmental benefits and costs. Henceforth, there is a need to evaluate the procedure followed by the selected companies as to how they quantify the environmental benefits and costs and report the same to the stakeholders.

Companies are mostly focusing only on internal environmental effect. E.g., hazardous problems faced by the workers/employees and product and production system & not

focusing on external environmental effects faced by the society at large which have based on after effects of the production process. (Welch, November 1997)

**Chart No: 2**

**Environmental Accounting Problems Statements**



Source: Primary Data.

The scope of environmental accounting is very-wide. As it comprises corporate level, national level, and international level. The some of the aspects those have included in the environmental accounting.

1. **Internal Point of View:** Investment made by the corporate sector for minimization of losses to the environment. It comprises investment done into the environment protective equipment. Such kind of accounting is simple as money measurement is possible.
2. **External Point of View:** In this case, all types of losses are caused indirectly due to business operation/activities. Some of them which have included are as follows.
  - (a) Degradation and destruction like soil erosion, loss of biodiversity, air pollution, water pollution, noise pollution, the problem of solid waste, marine and coastal pollution.
  - (b) Reduction of non-renewable natural resources, i.e., the damage emerged due to over-exploitation of non-renewable natural resources like minerals, water, gas.
  - (c) Deforestation.

There is a great deal of scope and prospect for environmental accounting research within the framework of developing countries. Some of the contemporary environmental and social issues such as climate change and greenhouse gas emissions affecting the global community are also believed to be critical issues of research in both developed and developing countries. ( Azizu 2010)

### **3.3 RESEARCH GAP**

From the earlier literature review; it is evidence that in the last decade pressure from environmentalists, social groups and scientists forced the corporate world to realize threat they had and a role to be played by them to save the Mother Nature Earth. The role of business in society is shifting dramatically. Corporate social responsibility and corporate environmental responsibility slowly become significant decision areas of corporate management. Hence there is a need to study and identify the factors influencing the level of corporate environmental disclosure of business enterprises in Goa. Similarly to what extent of legal compliance of business firm carrying out towards environmental accounting and disclosure practices also required to be studied. Various frameworks of environmental accounting management and reporting emerged in past few decades at different corners of the world. Even after that till today corporate environmental performances are in a

comprehensive form has not been dealt with severely by several countries and corporate. Hence there is need to study the role of government towards sustainable environmental development in business enterprises in Goa.

We must look behind by painfully “rewind the wheel” to see and learning lessons about how industrials are degrading our precious resource. Moreover, take measures also looking forward to moving to a stage that uses eco-efficient technologies and which is also able to manage the entire lifecycle of the products and process thereby reducing the threat to human health and environmental problems, while directing economic and social development towards more sustainable way. This aspect allows to put forward how vital is to analysis if any positive measures taken by industries to prevent environment from harmful causes to the environment of Goa. That also put forward the need to study and understand how the role of environmental accounting and ethics has played in building a corporate image. Similarly, newly introduced Company Act 2013 (Corporate Social Responsibility) policy rules 2014 also need to study with particular references to analysis the pre and post effect on corporate environmental accounting and ethical practices carry out by business enterprises in Goa. Considering this some of the research gap in the mind an attempt has been made to frame the research objectives with this above-identified research questions.

### **3.4 OBJECTIVES OF THE STUDY**

1. To Investigate the Factors Influencing Level of Corporate Environmental Disclosure of Business Enterprises in Goa.
2. To Study and Evaluate the Extent of Legal Compliance of Business Firm on Environmental Accounting and Disclosure Practices.
3. To Study and Evaluate the Measures taken by Industries to Prevent from Harmful Causes to the Environment of Goa.
4. To Examine and Evaluate Role of Environmental Accounting and Ethics in Building Corporate Image.

5. To Study the Role of Government towards Sustainable Environmental Development in Business Enterprises in Goa.
6. To Analysis Pre and Post effects of Companies Act, 2013 (Corporate Social Responsibility) Policy Rules 2014 on Corporate Environmental Accounting and Ethical Practices carry out by Business Enterprises in Goa.

### **3.5 RESEARCH HYPOTHESIS**

1. **H<sub>0</sub>**: There is no significant difference in factor influencing the level of corporate environmental disclosure of business enterprises.
2. **H<sub>0</sub>**: There is no significant difference in the extent of Legal compliance of business firm on environmental accounting and disclosure practices.
3. **H<sub>0</sub>**: There are no positive measures taken by industries to prevent environment from harmful causes.
4. **H<sub>0</sub>**: There is no significant role of environmental accounting and ethics in building corporate image.
5. **H<sub>0</sub>**: There is no significant role of government towards sustainable environmental development in business enterprises in Goa.
6. **H<sub>0</sub>**: There is no positive effect of Companies Act 2013 (Corporate Social Responsibility) policy rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

### **3.6 DATA AND METHODOLOGY**

Data and methodology is a critical aspect of the research, where data has gathered from various sources, and then reviewed and analyzed to draw some-sort of finding and conclusion. The methodology comprises of publication research, interviews, surveys and

other research techniques. It also includes the theoretical groundwork for understanding which methods, set of methods or best practices can apply to the specific case.

### **3.6.1 UNIVERSE AND SAMPLE SIZE**

Universe indicates the whole group of units which is the focus of the study. The universe includes individuals, groups of people, organizations, and even objects. Sample size identification is the action of picking the number of observations or replicates to comprise in a statistical sample. The sample size is a significant feature of any empirical study.

#### **3.6.1.1 Universe of Study:**

The study is confined to the state of Goa – consisting of altogether 12 talukas divided among two districts, North Goa and South Goa. A total number of industries/business enterprises in all 12 talukas. As per Directorate of Industries Trade & Commerce Udyog Bhavan Panaji Goa. Registered industries under the following Act.

- i. The Industries (Development & Regulation) Act, 1951 which came into force on 31st October 1951.
- ii. Goa Micro Small & Medium Enterprises Development Rules, 2007 under section 30, read with subsection (3) of section 21 of MSMED Act 2006.
- iii. Khadi: Village and Industries Board function under GDDKVIB Act 1965 and Rules of 1967.
- iv. The Goa Industrial Development Act, 1965 the Goa Industrial Development Corporation Allotment Regulation 2014, Goa Industrial Development Corporation Transfer and Sublease Regulation 2014.
- v. Goa Investment Promotion Act, 2014 (Board).

### 3.6.1.2 Sample Size of Study:

In the state of Goa, there are 3006 companies, as per data received on dated 5/01/2015 from DITC. Out of which seven companies have deregistered on or before 31/12/2014. Hence a total number of registered units/companies on or before 31/12/2014 are 2999. Where total numbers of manufacturing companies are 2236, total numbers of large companies are 86 out of which five companies are from services rendering & 13 are from the mining sector, which has not considered in the study. Therefore altogether number of large companies available for selection is 68. From this, all 68 companies have been selected based on Universal Sampling Techniques. Similarly, a total number of medium-sized companies are 58 out of which eight companies is from services. Therefore a total number of medium companies available for selection are 50. From this, all 50 companies will be selected based on Universal Sampling Techniques. A total number of sample size will be 118 companies.

**Table No: 1**

<b>UNIVERSE AND SAMPLE SIZE SELECTION</b>				
Different Sector / Size.	Number of Registered Companies	Number of Ignored Companies ( service, micro, small, mining sector)	Number of Companies Available for Selection/ Universe of Study.	Number of Companies Selected As Sample Size for Study
Manufacturing	2236	NIL	2236	
Service Rendering	763	763	NIL	
<b>TOTAL</b>	<b>2999</b>	<b>763</b>	<b>2236</b>	
Micro.	2344	2344	NIL	NIL
Small.	511	511	NIL	NIL
Large.	86	18	68	68
Medium.	58	8	50	50
<b>TOTAL</b>	<b>2999.</b>	<b>2881.</b>	<b>118.</b>	<b>118.</b>

Source: Primary Data.

**Table No: 2**

<b>Number of Companies and Sector-wise Classification of the Companies</b>							
Categories of Companies	Number of Companies As Sample Size	Nationality		Ownership		Size	
		Indian	Foreign	Public	Private	Large	Medium
Pharmaceutical	11	6	5	8	3	9	2
Electrical	5	5	Nil	4	1	3	2
Electronic	11	5	6	7	4	9	2
Chemical	17	14	3	7	10	12	5
Plastic	8	5	3	2	6	5	3
Engineering	20	20	Nil	5	15	8	12
Food & Beverage	13	8	5	7	6	8	5
Printing & Packaging	6	6	Nil	1	5	3	3
Iron & Steel	24	23	1	8	16	11	13
Textile	3	2	1	2	1	Nil	3
<b>Total</b>	<b>118</b>	<b>94</b>	<b>24</b>	<b>51</b>	<b>67</b>	<b>68</b>	<b>50</b>

Source: Primary Data.

After deriving to the sample size of the study which is 118 companies, sector-wise classification has done which can be observed in table no: 2, titled number of companies and sector-wise classification of the companies. Where all selected companies also bifurcated on the base of three essential factors those are nationality, ownership, and size of the company, where there are altogether 94 Indian companies, 24 foreign, 51 public, 67 private, 68 large and 50 medium-size companies in the sample selected for the study. This branching has done for carrying out accurate analysis and interpretation towards identified factors and sector-wise.

### **3.6.2 PERIOD OF THE STUDY**

The period of this particular research study is from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2016, for four years, as it will be helpful to find information regarding pre & post effect of Companies Act 2013. Where study will start from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2014 about pre-effect and information regarding post effect has collected from 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016. This period will give impartial justices to both the side of Companies Act 2013 (Corporate Social Responsibility) policy rules 2014 on corporate environmental accounting. Help researcher to draw accurate analysis & conclusion on it.



### 3.6.3 DATA COLLECTION

The data are facts and other relevant materials past and present serving as a base for study and analysis. The data served as bases or raw material for analysis, without an examination of factual data no specific inferences that can carry out on the problem. Data become the bases for analysis, inferences and testing the hypothesis formulated in the study. The data also provides the facts and figures required for constructing measurement, scales, and tables. Data has collected from both the sources, primary sources and secondary sources.

#### 3.6.3.1 Primary Data

Primary data is one where the information is collected directly from first-hand by the researcher for a specific research purpose, and the data source is an original data source.

**Table No: 3**

#### **PRIMARY DATA COLLECTION**

<b>Number of Companies Provided Information through Personal Visit &amp; Interview &amp; Structured Questionnaire, and RTI ACT 2005 By 19<sup>th</sup> November 2016.</b>		
Particular	Number of Companies	Number of Companies
Field Questionnaire Received		102
Companies Found Closed As And When Visited Personally		11
Companies Which Were Not So Cooperative And Have Not Provided The Information Through Personal Interview And Questionnaire	05	
Appeal Filed Through RTI ACT 2005 On Companies	05	
Companies Replied Positively After Filing Appeal Through RTI ACT 2005.		01
Failed To Collect Information Even Through RTI Act 2005.		04
<b>Total Selected Sample Size Of Companies</b>		<b>118</b>
<b>Total Number of Companies Information Available For Data Analysis</b>		<b>103</b>

Source: Primary Data.

In this particular study, the primary data collection started from dated 1<sup>st</sup> April 2016, because the period of this study begins from 1<sup>st</sup> April 2012 and ends on 31<sup>st</sup> March 2016.

All 118 companies have approached personally, and schedule of the personal interview was fixed based on company personal conveniences. The data was collected after going through numerous difficulties and constant follow-up and also providing firm assurances of total anonymity and after convincing company personnel that the data/information will be used only for research purpose and no individual responses will be disclosed. Those companies which were not so cooperative and did not provide information through personal interview. In the direction of obtaining the required information from those five non-corporative companies, an attempt was made to collect information by filing RTI application through Right To Information (RTI) Act 2005. Out of five companies, four companies denied toward providing information, saying that RTI Act 2005 is not applicable to them as they fall under private sector. After that finally, one positive reply received after making the second appeal to the appellate authority of that particular company. The thorough clarification can witness in table no: 3, titled primary data collection.

### **3.6.3.2 Secondary Data**

Secondary data is research data that has previously been gathered by someone other than the user and can be accessed by researchers. The required secondary information for the study has collected through different books, journals, newspaper, magazines, annual report and official websites of companies & government and other internet sources.

### **3.6.4 RELIABILITY TEST OF QUESTIONNAIRE**

The reliability test of the questionnaire has done with the help of Cronbach's Alpha using SPSS software version 22.0, Where Cronbach's Alpha (or coefficient alpha), developed by Lee Cronbach in the year 1951, it is a way to measure reliability or internal consistency of a psychometric instrument. "Reliability" is how well a test consistently measures what it is supposed to measure. It tries to create reliable and valid tests and questionnaires to improve the accuracy of their assessment and evaluations. Reliability and validity are two fundamental elements in the assessment of a measurement instrument. Validity is concerned with the degree to which an instrument measures, what it is proposed to measure. Reliability is concerned with the capability of an instrument to measure consistently. (Tavakol & Dennick, 2011)

The formula for Cronbach's Alpha is:

$$\alpha = \frac{N * \bar{c}}{\bar{v} + (N-1) * \bar{c}}$$

Where:

N = The number of items,

$\bar{c}$  = Average covariance between item-pairs, and

$\bar{v}$  = Average variance.

The rule of thumb for interpreting alpha for dichotomous questions. (i.e., the questions with two possible answers) or Likert scale questions are:

<b>Cronbach's Alpha</b>	<b>Internal Consistency</b>
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

In general, a score which is more than 0.7 is considered acceptable.

The questionnaire of the study has been tested at two different set as follows:

1. Firstly statements about the Corporate Social Responsibility (CSR) perceptions and practices of the organization.

**Table No: 4**  
**Reliability Statistics ( CSR)**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.774	.783	7

Source: Primary Data.

As we can interpret through table no: 4 titled reliability statistics for CSR, that value of our first set of the questionnaire related to Corporate Social Responsibility

perception has got the value of Cronbach's Alpha as 0.783 which is higher than thumb rule that interprets  $\alpha > 0.7$  is acceptable. Hence our set of question-related to (CSR) passes the reliability test. These give us a supporting statement that our questionnaire framed said to be a valid and reliable instrument for carrying out further process.

2. Secondly statements about ethical attitudes and practices of the organization.

**Table No: 5**  
**Reliability Statistics ( Ethics )**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.784	.812	9

Source: Primary Data.

Similarly, we can interpret the value of our second set of the questionnaire related ethical attitudes and practices. As we have got the value of Cronbach's Alpha as 0.812 that can observe through table no: 5 titled reliability statistics for ethics which is higher than thumb rule that interprets  $\alpha > 0.8$  is not only accepted but much better value/good value. Hence our set of question-related to ethical attitudes and practices passes the reliability test. These give us a supporting statement that our questionnaire framed said to be a valid and reliable instrument for carrying out further process

### **3.7 TOOLS AND TECHNIQUES USED FOR DATA ANALYSIS**

The data collected from primary & secondary sources have been analyzed based on research hypothesis and objective wise by using following tools:

#### **3.7.1 PERCENTAGE**

It is what we think of a hundred as a whole or all of something. Example: A hundred percent of a pizza is the entire pizza. Half a pizza will be 50 percent or half of a 100 percent. The percentage tells how many portions of the whole part it has.

### **3.7.2 MEAN**

The mean is said to be average of the numbers, a calculated as “central” value of a set of numbers. To calculate mean merely add up all the numbers, then divide it by how many numbers there are.

### **3.7.3 MEDIAN**

The median is an indicating or relating to a value or quantity lying at the midpoint of the frequency distribution of observed values. The median is said to be a statistical term that is one way of finding the 'average' of a set of data points.

### **3.7.4 STANDARD DEVIATION**

Karl Pearson brought the concept of standard deviation in the year 1893. Standard deviation is said to be the measure of dispersion of a set of data from its mean. Where it measures the absolute variability of distribution; higher the variability or dispersion, the higher will be the standard deviation, and greater will be the magnitude of the deviation of the value from their mean.

### **3.7.5 CRONBACH'S ALPHA**

Lee Cronbach introduced the Coefficient alpha or Cronbach's alpha in the year 1951; it is a technique to measure reliability or internal consistency of a psychometric instrument. “Reliability” is how well a test consistently measures what it is supposed to measure. It tries to generate reliable and valid tests of questionnaires to improve the accuracy of their assessment and evaluations.

### **3.7.6 SHAPIRO WILK (S-W) TEST**

The Shapiro Wilk test is used to identify whether data is normally distributed or not normally distributed. As it strongly suggests to the researcher which test will be best applicable for a study that is a parametric test or non-parametric test based on its result of normality test. Samuel Sanford Shapiro and Martin Wilk it was published in it in the year 1965.

### **3.7.7 INDEPENDENT SAMPLE T-TEST**

The independent T-test also called the two-sample t-test, the independent-samples T-test is an inferential statistical test that decides whether there is a statistically significant difference between the means in two unrelated groups. The independent samples T-test is a parametric test. The T- distribution was published by William Sealy Gosset in the year 1908.

### **3.7.8 MANN WHITNEY (U) TEST**

The Mann-Whitney U test is utilized to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed. The test was firstly designed by Wilcoxon in 1945 for two samples of the same size and was further developed by Mann and Whitney in 1947 to cover different sample sizes. The Mann-Whitney test is a non-parametric test, in comparison to the independent sample T-test; it does not compare mean scores but median scores of two samples.

### **3.7.9 MULTIPLE REGRESSION ANALYSIS MODEL**

The multiple regressions are used to clarify the association between one continuous dependent variable and two or more independent variables. The independent variables could be categorical or continuous (dummy coded as appropriate). It utilized when we need to forecast the value of a variable based on the value of two or more other variables. The variable we need to predict is called the dependent variable. The variables we are utilizing to predict the values of the dependent variable are called the independent variables. The original practice of regression was the Process of least squares. Legendre developed that in 1805.

### **3.7.10 PERSONS CHI-SQUARE ( $X^2$ ) TEST**

The Persons Chi-Square test is intended to test how probable it is that an observed distribution is due to chance. It is also termed as “goodness of fit” statistic since it measures how well the observed distribution of data fits with the distribution that is estimated if the variables are independent. Chi-square test for independence established in the year 1900.

### **3.7.11 PAIRED SAMPLE T-TEST**

The paired sample T-test also named as the dependent sample T-test, it is a statistical process used to identify whether the mean difference between two sets of observations is zero. The driving factor of the test is to determine whether there is statistical evidence that the mean difference between paired observations on a specific outcome is significantly different from zero. For example, one methodology that might consider would be to measure the performance of a sample of employees before and after completing the training program and investigate the differences using a paired sample T-test. The Paired-Samples T-Test is a parametric test.

### **3.7.12 WILCOXON SIGNED RANK TEST**

The Wilcoxon signed rank test is correspondingly termed as Wilcoxon signed rank sum test, it is a non-parametric test. The Wilcoxon signed rank test matches sample median against a hypothetical median. The Wilcoxon signed rank test analyses the difference amongst every set of matched pairs and then follows the similar process as the signed rank test to compare the sample against some median. The test got named for Frank Wilcoxon (1892–1965).

### **3.7.13 DEVELOPED ENVIRONMENTAL DISCLOSURE INDEX (EDI)**

Environmental Disclosure Index (EDI) is used to measure the depth of environmental accounting and disclosure practices of corporate. For assessing, the nature and status of environmental accounting and reporting practices of the selected companies of the study. Environmental Ethics (EE), Environmental Management (EM), Environmental Accounting (EA) has considered as crucial areas of the present study. The unweighted method has been used to measure the level of environmental accounting and disclosure practices of industries.

### **3.7.14 DEVELOPED CORPORATE SUSTAINABILITY INITIATIVES (CSI'S) INDEX.**

Corporate Sustainability Initiatives (CSIs) were defined where it includes: Firstly Any voluntary action taken by the corporate to ensure the reduced impact of their operations

activities on the environment or the society beyond legal compliance. Second those initiatives those are implanted in the core or mainstream business or are carried out by an extended arm of the corporate. Third, all actions that portray that the corporate in general is concerned about the social and environmental aspects along with the economic elements manifest in its strategic behavior or planning. Based on this definition (CSIs) has been divided into three sections those are Organisation and Management, Operations and Core Business Practices, and Corporate Environmental Responsibility.

### **3.8 LIMITATION OF THE STUDY**

The study had issues relates mainly towards non-availability of some required financial data, which spent by corporates towards environmental conservation and protection. Moreover, lack of enthusiastic support from questionnaire responder, as there was not so co-operation as well as lack of confidences from some companies to disclose their environmental status as an area of research is quite sensitive. The primary data collected for this research study is from Goa's large and medium sector companies may be slightly biased because companies' officials might have answered according to their perceptions towards the issues/problem.

The primary focus of this study is restricted to the state of Goa only to investigate the environmental accounting, and ethical practices carried out by business enterprises. The study was limited to the in-depth study of the selected 118 large and medium companies out of which 103 companies data has been successfully collected and has utilized for data analysis. The study has not used micro, small, and cottage companies and only restricted to large and medium-sized companies because this categories/section only once considered being comparatively more responsible for environmental accounting and reporting practices. Similarly, the service sector has been ignored in the study and only limited to the manufacturing sector as the restricted time frame of the study. Even mining sector has ignored in the study as there was a ban on mining for few financial years 2012-13 to 2014-15 as per Supreme Court, it would have been complicated to gather data from this closed companies.

Period of the study restricted to only four year that is from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2016. Due to the Company Act, 2013 has newly introduced from 1<sup>st</sup> April 2014, and there



is only two financial year time gap that is from 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016 for analyzing data related to post Company Act 2013. Hence to give impartial justices for comparative analysis between pre and post Company Act 2013, only two financial years has taken from both the side.

### **3.9 STRUCTURE OF THESIS**

#### **Chapter I – Introduction**

This chapter deals with an introduction that includes a brief introduction to the topic, the concept of environment, brief on environmental accounting, need for environmental accounting & reporting at the corporate level, the scope of environmental accounting, the historical background of environmental accounting, environmental accounting framework in India, briefing on ethics, regulatory background towards environmental accounting in India, the profile of Goa, and environmental accounting in Goa.

#### **Chapter II – Review of Literature**

This chapter comprises the review of the literature of this empirical study that discusses all the aspect of environmental accounting and reporting as well as ethical, aspect right from the begging of the concept. From both the perspectives that from Indian as well as Global.

#### **Chapter III – Research Methodology**

This chapter compacts with the research methodology of the study in details. That comprises background of the study, statement of the research problem, research gap of the study, objectives of the study, research hypothesis, data, and methodology, universe and sample size, a period of the study, data collection, reliability test of questionnaire, tools and techniques used for data analysis, limitation of the study, structure of the thesis.

## **Chapter IV – Data Analysis and Hypothesis Testing**

This chapter contains in-depth analyses, hypothesis testing, inferences, interpretation, and finding.

## **Chapter V – Finding, Conclusion, and Recommendation**

This chapter predominantly covers summary findings of the study with a brief conclusion, recommendations together with the summary of the study, contribution to knowledge and suggestions for further research.

### **3.10 SUMMARY OF CHAPTER**

The research methodology provided an essential background of environmental accounting and ethics, clarified the research problems and gaps, based on this crux objectives and the hypothesis has formulated. Tools and techniques have identified, universe and sample size has determined. The questionnaire has tested, a pilot study has been conducted to find out the feasibility and reliability of data. This groundwork has laid down the strong outline/blueprint for the whole data analysis chapter, which is the heart of this research work. The data analysis covers all objectives and hypothesis in-depth analysis and testing, inferences, interpretation in an organized manner.

## **CHAPTER – IV**

### **DATA ANALYSIS AND HYPOTHESIS TESTING**

#### **4.1 FACTORS INFLUENCING LEVEL OF CORPORATE ENVIRONMENTAL DISCLOSURE OF BUSINESS ENTERPRISES IN GOA.**

To investigate factors influencing the level of corporate environmental disclosure of business enterprises in Goa. The Environmental Disclosure Index (EDI) has been framed based on critical areas and parameters. This key areas and parameters have taken into consideration only after going through thorough literature review. For evaluating the status and nature of environmental accounting and reporting practices of the selected companies in Goa under this study, the following key areas have chosen in the present study.

1. Environmental Ethics (EE)
2. Environmental Management (EM)
3. Environmental Accounting (EA)

##### **4.1.1 ENVIRONMENTAL ETHICS**

Corporate environmental ethics is a most vital indicator of the status of environmental accounting and its ethical disclosure of the reporting companies. It indicates the attitude of reporting companies towards environment and society at large. How the reporting companies give importance in respect of environmental matters in the decision-making process is also highlighted through this disclosure. Hence, the sub-area disclosure of environmental ethics itself has taken as a major key variable under this study. The following parameters have selected for evaluating this variable:

1. Environmental goal
2. Environmental policy
3. Environmental vision and mission statement
4. Stance took towards global warming and environmental hazards

5. Fines and Penalties
6. Participation in Social Activities
7. Voluntarily Donation of Funds

The above parameters have discussed in the following sections

#### **4.1.1.1 Environmental Goal**

We human being has enormous power to destroy the World. The environment is the first side of the coin, where we also can play a vital role in saving it; the destruction is the second side of the coin. It is up to us to decide on which side of the coin to be chosen by us. Every single business activities have some negative impact on the environment. For this reason, the business houses have to be more liable to protect the environment. However, for this, they have to be on the second side of the coin must set an environmental goal that is necessary. The challenge for setting environmental goals is that it must be sustainable and should aim for a “Zero Negative Effect” on the environment or at least minimize the harmful effect as far as possible. Therefore, this item considered as a significant parameter in environmental ethics.

#### **4.1.1.2 Environmental Policy**

The adoption of environmental policy as a part of the business policy is presently has taken as willingly. Since the past two decades, environmental policy has developed as the proactive decision of business organizations. There is an emerging thought that environmental policy must team up within the organization’s business strategy. Keeping this fact in mind as mentioned above, this item has selected as a parameter of environmental ethics.

#### **4.1.1.3 Environmental vision and mission statement**

Vision is the utmost desired or predictable future state of the concerned institution regarding its primary objectives or goals. What a business organization desires to be in line with the environment in future is a blueprint in the environmental vision statement. On the other side, the mission is the ultimate intention of an organization. It profoundly explains why it does exist. An environmental mission statement explains the purpose or broader

goal of the business organization in co-relation to the environment. It concentrates on the present. It describes the desired level of environmental concern. Thus, it is considered as an essential parameter in assessing the disclosure performance of environmental ethics.

#### **4.1.1.4 Stance taken towards global warming and environmental hazards**

The process of industrialization is one of the critical reasons for the production of harmful gases liable for the greenhouse effect and hence enhancing this warming. Thus, the thinking about the accountability for global warming by businesses is one of the essential issues in few recent decades. Therefore, global warming has been chosen as an essential parameter of environmental ethics.

#### **4.1.1.5 Fines and Penalties**

Now a day every company has to follow many laws and regulations concerning the environment. They are governed either by a respected governing organization or by the government of the respective country. It is essential now that whether every company is following the respective guideline ethically framed by regulatory authorities. To study this thus fines and penalties have been chosen as a vital parameter of environmental ethics.

#### **4.1.1.6 Participation in Social Activities**

The participation of organization in social activities highlights the level of concern toward the environment and society at large. As involvement of corporates in social activities has become a need of the hour, as one hand cannot clap. Hence government, as well as other parties of society, are looking forward towards this giant corporate as helping hand for making sustainable development. Company's participation in social activities shows how ethical they are. Hence this study has taken participation in social activities as an essential parameter of environmental ethics.

#### **4.1.1.7 Voluntarily Donation of Funds**

As there is no firm rule internally of the amount to be spent on environmental conservation or protection. Hence organization's ethical attitude toward environmental protection can be anticipated based on the amount they spent voluntarily. In terms of protection

conservation and making sustainable development that shows the level of the ethical attitude of the organization. Hence, voluntarily donation of the fund has considered as an utmost important parameter of environmental ethics.

#### **4.1.2 ENVIRONMENTAL MANAGEMENT**

The performance of the business concerning environmental impact whether it is positive or negative is a crucial aspect of environmental accounting & reporting. The corporate has to manage this adverse effect as much as possible collectively with taking more environmental accountabilities to become an environmentally friendly company. A corporate house needs to create and implement a comprehensive environmental management system if they want to improve the environmental performance of the company. The environmental management system is the mixture of arrangements for measuring, observing and recording a corporate's environmental effect. After keeping in mind, the above environmental management has taken as a significant sub-variable in the study. The position of accounting and reporting of environmental management can study on the availability of evidence on the following parameters.

1. Environmental management department
2. Waste management
3. Environmental audit
4. Research and development
5. Training and education
6. ISO14001
7. Conservation initiatives
8. Life cycle assessment
9. Occupational safety and hazards
10. Environmental awards & achievement

The above parameters have discussed in the following sections

##### **4.1.2.1 Environmental Management Department**

In any present organization which is willing to manage its adverse impact on the environment, must have separate or specialized environmental department into place in the

organization. That will look after all the activities of the organization that may carry an adverse effect on the environment. The environmental management department will not only look internal activities but also follow up with external regulatory compliances to be fulfilled by the corporate. Without this department, it will be quite challenging for corporates to trace their environmental activities. Hence environmental management department is an essential parameter for judging environmental management.

#### **4.1.2.2 Waste Management**

Waste generation is a very common happening in all of the industrial sectors related to manufacturing procedure of their stream of products. The wastes generated might be solid, liquid or gaseous. The pollution created by the wastes has a harmful impact on air, water, land, noise, flora, fauna and socioeconomic environments. Hence correct waste management is needed. A steady decline in waste generation levels of industrial sectors can accomplish through perfection in efficiency and modifications in life cycles. Thus waste management is a vital parameter for judging environmental management.

#### **4.1.2.3 Environmental Audit**

An environmental audit is an examination of methods and measures of a company in respect to its compliance with related regulations and laws and effects on environmental situations. It is a vital tool for environmental management. It confirms better environmental performances of the institution. Considering the above environmental audit has been taken as a critical parameter for assessing the environmental management.

#### **4.1.2.4 Research and Development**

Research and development actions speak about the activity of environmentally friendly product development, clean procedure design, and technology improvement for a decrease of the rate of usage of natural resource and its conservation. It confirms effective environmental management of the corporate. In the current era world, all most of the institution spent crores of money in this field for superior environmental performance. Thus research and development have been treated as a significant parameter for evaluating environmental management.

#### **4.1.2.5 Training and Education**

Improvement and application of new business policies for meeting environmental challenges will be a dominant issue for firms in the upcoming era. Accounting for environmental costs, and related accounting education and training will play vital supportive roles. Environmental accounting is similar to financial courses and delivers environmental education through the interdisciplinary variety of commerce and economics, environmental law, environmental sciences and environmental accounting. Training and education to workers in respect of environmental matters is very compulsory for the better environmental performance of the firms. Therefore training and education have been taken as an essential parameter for judging the environmental management.

#### **4.1.2.6 ISO – 14001**

A most significant principle of the environmental management system is the use of standards of a universal nature. The usages of internationally based standards help to determine whether corporations are complying with estimated environmental performance. The standard-setting procedure had set a portion of the Universal environmental initiative. ISO 14001 is an international standard and offers a competitive advantage on an international basis. Hence ISO 14001 has been considered as the critical parameter for judging environmental management.

#### **4.1.2.7 Conservation Initiatives**

The conservation movement is essential to mobilize public support to safeguard natural wealth and to protect the environment. Conservation initiatives like reduces, recycle, reuse is becoming eye catching activities of corporate as it ensures sustainability. Business houses have a significant role in the conservation movement. Therefore conservation initiatives have taken as a critical parameter in assessing the performance of environmental management.

#### **4.1.2.8 Life Cycle Assessment**

Life cycle assessment is the calculation of the level of environmental effect of a process or product beginning from the purchase of raw materials and ending to the end of product



life. From an environmental accounting perception, the focus is on adding a monetary component, that is, to allocate a cost to every environmental impact. The total of all the costs at each stage in a life cycle assessment would produce the net environmental costs of a product or process. These show that there is a life-cycle costing factor to life cycle assessment. Because of this life cycle assessment has been taken as an essential parameter for estimating environmental management.

#### **4.1.2.9 Occupational Safety and Hazards**

Occupational safety is the protection of people involved in work or employment from different health hazards. The objective of all occupational safety and health programme is to encourage a risk-free, safe environment. It may also protect co-workers, family members, employers, customers, suppliers, nearby community and other members of the society who are affected by the workplace environment. For this reason, occupation safety and hazards have taken as an essential parameter for evaluating environmental management.

#### **4.1.2.10 Environmental Awards & Achievement**

Various environmental awards and achievement evaluate the environmental performance of a company achieved by different government and non-government organizations. If a firm wins awards over many times regularly for its superior environmental performance then improved environmental actions becomes an everyday routine work of that individual company. Accordingly, the environmental awards and achievements have considered as a significant parameter for evaluation of better environmental management variable.

### **4.1.3 ENVIRONMENTAL ACCOUNTING**

Environmental accounting in its modest way is to create correlated environmental costs further transparent within corporate accounting structures and reports. Environmental accounting is an instrument for determining the cost and impact of environmental activities of the organization within the company's day to day operations. Environmental accounting is a procedure of carefully identifying the exhaustion of natural goods and services', investigating the benefits extracted from environment to the organization and what is the cost incurred by the organization for protecting the environment. Corporate environmental

accounting can deliver a valuable device that permits business to reply to environmental challenges although remembering a focus on bottom-line requirements. For assessing the sub-variable of environmental accounting the following vital parameters have selected:

1. Expenditure on equipment and facilities (Capital costs)
2. Operating cost of facilities and equipment (Revenue expenditure)
3. Costs of environmental conservation initiatives

The above parameters have discussed in the following sections

#### **4.1.3.1 Expenditure on Equipment and Facilities**

Expenditure on equipment and facilities for pollution regulator measurement, energy preservation, better-quality material and another resource handling, recycling of waste material and water, this some are the essential items for environmental accounting determinations. The capital expenditure on equipment and facilities for the previous and present period and future estimation of expenditure has considered in the study.

#### **4.1.3.2 Operating Cost of Equipment and Facilities**

Operating cost of equipment and facilities for pollution regulator measures, energy preservation, better-quality material and another resource handling, recycling of waste material and water. These remain the some of the essential items those have considered for environmental accounting. The operating cost of equipment and facilities has also taken into a similar fashion as capital expenditure only for the study.

#### **4.1.3.3 Costs of Environmental Conservation Initiatives**

Amount spent for protection of the environment (has been considered as so-called environmental costs). Example amount spends on research and development for generating environmental friendly product, process, design or packaging style. Amount spend on running sewage treatment plant like electricity expenses, labor expenses, or amount spend toward recycling activates. This cost has taken for past, current and future period and has treated as cost incurred on environmental conservation initiatives. Hence the cost of environmental conservation initiatives has been considered as a crucial variable of environmental accounting in the study.

#### **4.1.4 MEASURING OF ENVIRONMENTAL DISCLOSURE INDEX**

There are several methodologies available to develop Environmental Disclosure Index (EDI) to measure the depth of accounting and reporting of environmental information in annual reports in the studies of different researchers. Both weighted and unweighted environmental disclosure index commonly used by the several researchers for measuring the disclosure level. Among the alternative approaches, the total score approach (unweighted) has been used to measure the level of accounting and reporting of environmental information in this study. Where for non-disclosure of a parameter, the score is awarded zero and for disclosure of the parameter, the score assigned is one. For example: If companies have an environmental goal then it has been awarded score “One” and companies not having environmental goal has awarded score “Zero.” In this approach, all the key area wise scores were summed up. That is maximum a single company can get the highest score in Environmental Ethics (EE) will be “Seven” if they disclosed all the seven parameters. Moreover, minimum or the lowest score of the single company could be “Zero” if the company failed to disclosure of all the parameter of Environmental Ethics (EE). Similarly highest score a can be obtained by a single company will be “Ten” if they disclosed all ten parameters of Environmental Management (EM) and minimum score a single company could obtain is “Zero” if they failed to disclosure of all the parameter of environmental management. Similarly, the maximum score can be awarded “Three” for Environmental Accounting (EA) if they disclosed all three parameters of it. Minimum score that can award would be “Zero” if the company failed to disclose all three parameters of Environmental Accounting (EA). The total scores represented the single company Environmental Disclosure Index. That will base on the total score of key area Environmental Ethics (EE) plus total score of key area Environmental Management (EM) plus total score of key area Environmental Accounting (EA) will be the sum of Environmental Disclosure Index (EDI) of a particular or single company. The significant theme of the unweighted index is that all the critical area information in the index considered equally necessary to the average user.

#### 4.1.4.1 The Process of Measuring Environmental Disclosure Index

$$\text{Environmental Disclosure Index (EDI)} = \text{TS}_{\text{EE}} + \text{TS}_{\text{EM}} + \text{TS}_{\text{EA}}$$

Where:

$\text{TS}_{\text{EE}}$  = Total Score of Environmental Ethics Variable

$\text{TS}_{\text{EM}}$  = Total Score of Environmental Management Variable

$\text{TS}_{\text{EA}}$  = Total Score of Environmental Accounting Variable

This Environmental Disclosure Index of each company has been utilized to investigate the factors influencing the level of corporate environmental disclosure of business enterprises in Goa. Based on the conceptual framework, hypotheses have developed as follows.

#### 4.1.5 HYPOTHESIS:

1. **H<sub>0</sub>**: There is no significant difference in factor influencing the level of corporate environmental disclosure of business enterprises.

##### Factors:

- Nationality (Indian / Foreign)
- Ownership (Public / Private)
- Size (Large / Medium)
- Age
- Sector or Categories

#### 4.1.5.1 SUB – HYPOTHESIS: ON EDI

1. H<sub>0</sub>: There is no significant difference between Indian and Foreign Companies Level of Corporate Environmental Disclosure Index.
2. H<sub>0</sub>: There is no significant difference amongst Public and Private Companies Level of Corporate Environmental Disclosure Index.

3. H<sub>0</sub>: There is no significant difference between Large and Medium-sized Companies Level of Corporate Environmental Disclosure Index.
4. H<sub>0</sub>: There is no significant relationship between an Age of Companies and its influence on Level of Corporate Environmental disclosure Index.
5. H<sub>0</sub>: There is no significant relationship between Sector of Companies and its influence on Level of Corporate Environmental Disclosure Index.

#### **4.1.5.2 SUB-HYPOTHESIS: Perceptions on CSR, Ethics, Environmental Accounting**

6. H<sub>0</sub>: There is no significant difference between Indian and Foreign Companies in the Perception towards Corporate Social Responsibility (CSR).
7. H<sub>0</sub>: There is no significant difference amongst Public and Private Companies in the Perception towards Corporate Social Responsibility.
8. H<sub>0</sub>: There is no significant difference between Large and Medium Companies in the Perception towards Corporate Social Responsibility.
9. H<sub>0</sub>: There is no significant difference between Indian and Foreign Companies in the Perception towards Ethical Practices.
10. H<sub>0</sub>: There is no significant difference amongst Public and Private Companies in the Perception towards Ethical Practices.
11. H<sub>0</sub>: There is no significant difference between Large and Medium Companies in the Perception towards Ethical Practices.
12. H<sub>0</sub>: There is no significant difference between Indian and Foreign Companies in the Perception towards Environmental Accounting and Disclosure Practices.
13. H<sub>0</sub>: There is no significant difference amongst Public and Private Companies in the Perception towards Environmental Accounting and Disclosure Practices.

14. H<sub>0</sub>: There is no significant difference between Large and Medium Companies in the Perception towards Environmental Accounting and Disclosure Practices.

#### **4.1.6 THE FACTORS INFLUENCING, LEVEL OF CORPORATE ENVIRONMENTAL DISCLOSURE INDEX.**

To study and understand which different factors those are affecting in either increasing or decreasing the level of Corporate Environmental Disclosure Index. Environmental Disclosure Index has prepared of all sample data. To analysis, the same above first five subs null hypothesis has been framed based on one primary null – hypothesis. Before analyzing the data for each null – hypothesis Shapiro – Wilk (S-W) and Kolmogorov – Smirnov (K-S) Test of normality has been run to see whether data is normally distributed or not normally distributed. Which is very vital in any analysis, as based on the result of the normality test researcher able to know whether a parametric test or non–parametric test may have to apply to that particular data.

For this particular study, Shapiro – Wilk (S-W) Test has taken as a base to identify whether data is normally distributed or not normally distributed. Because Kolmogorov – Smirnov (K-S) Test has used in any analysis, where sample size is large that is more than one thousand sample size. Whereas for smaller sample size Shapiro – Wilk (S-W) Test is used when the sample size is less than one thousand as it is more accurate then Kolmogorov – Smirnov (K-S) Test. Hence the study has used, Shapiro – Wilk (S-W) Test as a based because the sample size of this study lies near hundred mark that is far away from a mark of one thousand. Thus Shapiro –Wilk (S-W) Test is most suitable for this study.

Shapiro Wilk (S-W) test has its specific null hypothesis for testing the data that is as follows:

H<sub>0</sub> (S-W): Data Normally Distributed.

H<sub>1</sub> (S-W): Data Not Normally Distributed.

To analysis Shapiro Wilk (S-W) test it is said that if P-value is less then confidences interval, then the null hypothesis is rejected. For example P-value has come to 0.025 and at confidences level 95% (0.05) hence P-value < 0.05 (0.025 < 0.05). Thus null hypothesis is

rejected, and alternate hypothesis is accepted saying that data not normally distributed. Similarly, if P-value is more than confidences level, we fail to reject the null hypothesis hence we accept the null hypothesis saying that data has normally distributed. If sample data is normally distributed then the parametric test has used, and If sample data has not normally distributed then nonparametric test have used.

#### 4.1.6.1 To Investigate Corporate Environmental Disclosure Index Level Between Indian and Foreign Companies.

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 6**

<b>(S-W) test Between Indian and Foreign for (EDI)</b>				
IndianForeignCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
EDInPercentage	Indian	.949	81	.003
	Foreign	.885	22	.015

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors Indian and foreign. Where Shapiro Wilk (S-W) Test rejects the null hypothesis that says sample data is normally distributed and accept the alternate hypothesis that says sample data has not normally distributed. As P-value of both the factor is less than confidences level of 95% (0.05), that has come 0.003 & 0.015 of Indian and foreign respectively, which is less than 0.05 (0.03 & 0.015 < 0.05), that can be observed in table no: 6. Hence, the non-parametric test is used to compare Environmental Disclosure Index (EDI) between Indian and foreign companies.

As data is not normally distributed based on Shapiro Wilk (S-W) Normality Test, hence we have used Mann Whitney (U) test, which is a non-parametric test to study Environmental Disclosure Index (EDI) scores between Indian and foreign companies. Where median of Indian companies have found to be 65 and median of foreign companies is 85 which can observe from table no: 7. Value of test statistics  $U = 428$ ,  $Z = 3.74$ ,  $P =$

0.000,  $P < 0.05$ , Hence foreign companies have higher EDI than that of Indian companies. Because the median value of foreign is higher than Indian companies that undoubtedly indicates that foreign companies significantly have higher environmental disclosure level as compared to Indian companies. That also has been indicating through mean rank, where the mean rank of Indian companies has come to 46.28, and foreign companies mean rank has come to 73.05, which is higher than Indian companies. These shows that foreign companies are better regarding (EDI) score as compare to Indian companies.

**Table No: 7**

<b>Ranking of Indian and Foreign Companies towards EDI Score</b>				
IndianForeignCompanies		N	Mean Rank	Sum of Ranks
EDInPercentage	Indian	81	46.28	3749.00
	Foreign	22	73.05	1607.00
	Total	103		

Source: Primary Data.

Where P-value of Mann Whitney (U) test has come to  $P = 0.000$ , which is less than 95 % confidences level 0.05 ( $0.000 < 0.05$ ). These show that first sub-null hypothesis has rejected and the alternate hypothesis has accepted, that there is a significant difference between Indian and foreign companies level of corporate environmental disclosure index.

#### **4.1.6.2 To Investigate Corporate Environmental Disclosure Index Level Between Public and Private Companies.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed. Shapiro Wilk (S-W) Test of normality has used for both factors public and private. The table no: 8 indicates where P-value of public companies has come to 0.000, that is less than 95 % confidences level 0.05 ( $0.000 < 0.05$ ). Where P-value of private companies has come to 0.081 that is more than 95% confidences level 0.05 ( $0.081 > 0.05$ ), Even though private companies failed to reject the null hypothesis of normality test. It has considered that null hypothesis of Shapiro Wilk (S-W) test has rejected, as out of two factor public and private companies, public factor has rejected the null hypothesis. This substantial evidence supports that null hypothesis has



rejected that data is normally distributed and accept alternate hypothesis that is data has not normally distributed. Hence nonparametric test is used to compare EDI between public and private companies.

**Table No: 8**

<b>(S-W) test Between Public and Private for (EDI)</b>				
PublicPrivateCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
EDIinPercentage	Public	.889	46	.000
	Private	.963	57	.081

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used Mann Whitney (U) test. Which is a non-parametric test to study Environmental Disclosure Index (EDI) scores between public and private companies, the median of public companies is found to be 85, and the median is 55 of private companies that can be observed in table no: 9. Values of test statistics are  $U = 456$ ,  $Z = 5.69$ ,  $P = 0.000$ ,  $P < 0.05$ , Hence, public companies have higher EDI than that of private companies. Because the median value of public is higher than private companies that undoubtedly indicates that public companies significantly has higher environmental disclosure level as compare to private.

**Table No: 9**

<b>Ranking of Public and Private Companies towards EDI Score</b>				
PublicPrivateCompanies		N	Mean Rank	Sum of Ranks
EDIinPercentage	Public	46	70.59	3247.00
	Private	57	37.00	2109.00
	Total	103		

Source: Primary Data.

That also has been signifying through mean rank, where the mean rank of private companies has come to 37.00, and public companies mean rank has reached to 70.59,

which is higher than private companies. These shows that public companies are better regarding (EDI) score as compare to private companies. Where P-value of Mann Whitney (U) test has come to  $P = 0.000$ , which is less than 95 % confidences level 0.05 ( $0.000 < 0.05$ ). These shows that second sub-null hypothesis has rejected and the alternate hypothesis has accepted, that says there is a significant difference amongst public and private companies' level of corporate environmental disclosure index.

#### 4.1.6.3 To Investigate Corporate Environmental Disclosure Index Level Between Large and Medium Size Companies.

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 10**

<b>(S-W) test Between Large and Medium for (EDI)</b>				
LargeMediumCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
EDInPercentage	Large	.930	61	.002
	Medium	.955	42	.094

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors large and medium. The table no: 10 shows where P-value of large size companies has come to 0.002 that is less than 95 % confidences level 0.05 ( $0.002 < 0.05$ ). Where P-value of medium size companies has come to 0.094 that is more than 95% confidences level 0.05 ( $0.094 > 0.05$ ), Even though medium-size companies failed to reject the null hypothesis of normality test. However, It has considered that null hypothesis of Shapiro Wilk (S-W) test has rejected, as out of two factor large and medium-size companies, large-size factor has rejected the null hypothesis. This substantial evidence supports that null hypothesis has rejected that data is normally distributed and accept alternate hypothesis that is data has not normally distributed. Hence nonparametric test is used to compare EDI between large and medium-sized companies.

As data is not normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used Mann Whitney (U) test, which is a non-parametric test to study Environmental Disclosure Index (EDI) scores between large and medium-sized companies. Where median of large size companies is found to be 75 and median of medium size companies is 55. Values of test statistics are  $U = 663$ ,  $Z = 4.16$ ,  $P = 0.000$ ,  $P < 0.05$ , Hence, large size companies have higher EDI than that of medium size companies. Because the median value of large is higher than medium-sized companies that undoubtedly indicates that large size companies significant has higher environmental disclosure level as compared to medium size companies.

**Table No: 11**

<b>Ranking of Large and Medium Companies towards EDI Score</b>				
LargeMediumCompanies		N	Mean Rank	Sum of Ranks
EDInPercentage	Large	61	62.12	3789.50
	Medium	42	37.30	1566.50
	Total	103		

Source: Primary Data.

That also has been indicating through mean rank that can be observed in table no: 11 where the mean rank of medium size companies has come to 37.30, and large size companies mean rank has reached to 62.12, which is higher than medium-size companies. This point out that large size companies are better regarding (EDI) score as compared to medium size companies.

Where P-value of Mann Whitney (U) test has come to  $P = 0.000$ , which is less than 95% confidences level 0.05 ( $0.000 < 0.05$ ). These shows that third sub null hypothesis have rejected and the alternate hypothesis has accepted, that there is a significant difference between large and medium-size companies level of corporate environmental disclosure index.

#### **4.1.6.4 To Investigate the Relationship Between Age of Companies and its Influence on Level of Corporate Environmental Disclosure Index.**

To investigate the same regression analysis is carried out, with the help of Multiple Regression Model. Where dichotomous independent dummy variables such as type of company (Private = 0, Public = 1), size of company (Medium = 0, Large = 1), origin of company (Indian = 0, Foreign = 1) whereas EDI is dependent variable.

**Table No: 12**

<b>Multiple Regression Analysis Model</b>				
Particular	Model I		Model II	
	B	Test stat. ( T- Value)	B	Test stat. (T- Value)
(Constant)	44.57	10.61**	38.44	8.08**
Age	0.14	1.12	0.12	0.87
Foreign	13.30	2.95**	7.35	1.51
Public	19.63	5.45**	17.19	4.64**
Large	9.27	2.45**	7.85	2.04*
1. Pharmaceutical			17.22	2.47*
2. Electrical			7.51	0.82
3. Electronic			22.56	3.34**
4. Chemical			15.16	2.58**
5. Plastic			1.32	0.18
6. Engineering			5.14	0.87
7. Food & Beverage			15.29	2.27*
8. Printing & Packaging			13.07	1.56
10. Textile			3.24	0.30
F	17.55**		7.33**	
R Adj. sqr	.394		.447	

Source: Primary Data.

**(Where, \*\* Sig at 1%, \* Sig at 5% level of significance.)**

**Reference category:** Indian, Private, Medium size companies. (Model I)

Indian, Private, Medium size, Iron & Steel companies. (Model II)

We note from the model I table that 39% of the variation in EDI has explained, and model is statistically significant,  $F(4, 98) = 17.55$ ,  $P = 0.000$ . Further, we introduce type or categories of the industry as another variable in the model II; we recognized that model is found to be statistically significant,  $F(13, 89) = 7.33$ ,  $P = 0.000$ , it explains 44% variation in EDI. It has observed that residuals of both models follow normality condition.

Multiple Regressions Model I in table no: 12 clarify that there is no relationship between age of the company and it impacts on the level of corporate environmental disclosure index because it has said that if T-value is within plus or minus (+ or -) 1.96. Then we have failed to reject the null hypothesis since we accept the null hypothesis, anything above (+ or -) 1.96, we need to reject the null hypothesis. Where T-value of age factor has come within plus or minus (+ or -) 1.96 that has come to  $T = 1.12$  in Model I which is less than plus 1.96. Similarly in Multiple Regression Model II shows T-value of age factor has come within plus or minus (+ or -) 1.96, that has come to  $T = 0.87$  in Model II which is also less than Plus 1.96. These prove age factor does not affect EDI Score in both the models. That why we have failed to reject the forth sub-null hypothesis and accepts the fourth sub-null hypothesis that states there is no significant relationship between age of companies and its influence on the level of corporate environmental disclosure index.

#### **4.1.6.5 To Investigate the Relationship Between Sector or Categories of Companies and its Influence on Level of Corporate Environmental Disclosure Index.**

To investigate the same regression analysis is carried out, with the help of Multiple Regression Model. Further, we introduce sector or categories of the industry as another variable in the Model II. Where we got a result after comparing to the base category that was iron & steel companies. The first category of the study pharmaceutical has shown the significant relationship, and its impact on the level of corporate environmental disclosure index, like T-value of pharmaceutical, has come to more than plus or minus (+ or -) 1.96, that is  $T = 2.47$  which is more than plus 1.96. That undoubtedly indicates we should reject the fifth sub null hypothesis. Similarly category third, fourth and seventh (electronic, food & beverage, chemical, respectively) of this study has shown the significant relationship and its impact on the level of corporate environmental disclosure index. As T-value of electronic, food & beverage, the chemical has come to more than plus or minus (+ or -)

1.96 that is  $T = 3.34, 2.27, \text{ and } 2.58$  respectively which is more than plus 1.96 that can observe from table no: 12. That undoubtedly indicates we should reject the fifth sub null hypothesis.

The second category of the study that is electrical shows no significant relationship and its impact on the level of corporate environmental disclosure index. As T-value electrical has come less than plus or minus (+ or -) 1.96, that is  $T = 0.82$  which is less than plus 1.96. That highlight we have failed to reject the fifth sub null hypothesis. Similarly category fifth, sixth, eighth, tenth (plastic, engineering, printing & packaging, textile, respectively) of this study has shown no significant relationship and its impact on the level of corporate environmental disclosure index. As T-value plastic, engineering, printing & packaging, textile has come to less than plus or minus (+ or -) 1.96, that is  $T = 0.18, 0.87, 1.56, 0.30$ , respectively which is less than plus 1.96. That highlight we have failed to reject the fifth sub null hypothesis.

Even though categories like electrical, plastic, engineering, printing & packaging, and textile have failed to reject the null hypothesis, but evidence in categories like pharmaceutical, electronic, food & beverage, and chemical which says null hypothesis should have rejected are sufficient to reject the null hypothesis. Hence we will reject the fifth sub null hypothesis, and we will accept the alternate hypothesis that there is a significant relationship between categories or sector of companies and its influence on the level of corporate environmental disclosure index.

#### **4.1.7 FACTOR INFLUENCING PERCEPTION OF CORPORATE TOWARDS CSR, ETHICS, AND ENVIRONMENTAL PRACTICES AND ITS RELATIONSHIP WITH LEVEL OF CORPORATE ENVIRONMENTAL DISCLOSURE INDEX.**

To study and understand which different factors those are influencing the perception of corporate towards Corporate Social Responsibility (CSR), Ethics and Environmental Responsibility. To analysis, the same nine sub-hypothesis has framed as mentioned before. Also, the Shapiro Wilk (SW) test has been used to identify whether data is normally distributed or not normally distributed. Where for each separate perception question was framed for CSR (Refer: Question number 1 in questionnaire), Ethics (Refer: Question

number 2 in the questionnaire). Environmental (Refer: Question number 3 in the questionnaire) on a five-point scale and the option has given: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree. Based on this scale, points have allotted for every answer. For strongly agree point allotted was 1, agree point have allotted 2, neither agree nor disagree point allotted 3, disagree point allotted 4, strongly disagree point have allotted 5. Hence maximum single company could score 35 if all answers fall in strongly disagree bracket in case of CSR perception and minimum single company could score seven if all answer falls into strongly agree bracket in case of CSR perception. Similarly, the maximum single company could score 55 in a matter of ethics perception, and minimum single company could score 11 in case of ethics perception. Similarly, the maximum single company could score 35 in case of environmental perception, and minimum single company could score 7 in case of environmental perception. As the rating of points has done into the reverse case, hence lower the point better the perception has been considered and similarly higher the point weaker the perception has considered for this study.

**4.1.7.1 To Investigate the Relationship Between Indian and Foreign Companies Perception Towards Corporate Social Responsibility (CSR).**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 13**

<b>(S-W) test Between Indian and Foreign for (CSR)</b>				
IndianForeignCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(CSR)Q1sum	Indian	.985	80	.454
	Foreign	.893	22	.021

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors Indian and foreign. That can be observed from table no: 13 where P-value of foreign companies has come to 0.021 that is less than 95 % confidences level 0.05 ( $0.021 < 0.05$ ). Where P-value of Indian

companies has come to 0.454 that is more than 95% confidences level 0.05 ( $0.454 > 0.05$ ), Even though Indian companies failed to reject the null hypothesis of normality test. It has considered that null hypothesis of Shapiro Wilk (S-W) test has rejected, as out of two factor Indian and foreign companies, foreign factor has rejected the null hypothesis. This substantial evidence supports that null hypothesis has rejected that data is normally distributed and accept alternate hypothesis that is data has not normally distributed. Hence nonparametric test is used to compare CSR perception between Indian and foreign companies.

As data is not normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used Mann Whitney (U) test, which is a non-parametric test to study Corporate Social Responsibility (CSR) perception between Indian and foreign companies. Where median of Indian companies is found to be 16 and median of foreign companies is 14 which can be observed from table no: 14. Values of test statistics are  $U = 623$ ,  $Z = 2.098$ ,  $P = 0.035$ ,  $P < 0.05$ , as we have rated point in reverse scale, that why we will consider lesser the median better the perception and higher the median weaker the perception. Hence foreign companies have better perception as compared to Indian. These also have been indicating through mean rank, where the mean rank of foreign companies has come to 39.82, and Indian companies mean rank has reached to 54.71, which is higher than foreign companies. These shows that foreign companies are better regarding CSR perception as compare to Indian companies.

**Table No: 14**

<b>Ranking of Indian and Foreign Companies towards CSR</b>				
IndianForeignCompanies		N	Mean Rank	Sum of Ranks
(CSR)Q1sum	Indian	80	54.71	4377.00
	Foreign	22	39.82	876.00
	Total	102		

Source: Primary Data.

Where P-value of Mann Whitney (U) test has come to  $P = 0.035$ , which is less than 95 % confidences level 0.05 ( $0.035 < 0.05$ ). These shows that sixth sub-null hypothesis has rejected and the alternate hypothesis has accepted, that there is a significant difference



between Indian and foreign companies perception towards Corporate Social Responsibility (CSR).

**4.1.7.2 To Investigate the Relationship Between Public and Private Companies Perception Towards Corporate Social Responsibility (CSR).**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed. Shapiro Wilk (S-W) Test of normality has used for both factors public and private. That can witness from table no: 15 where P-value of public companies has come to 0.008 that is less than 95 % confidences level 0.05 ( $0.008 < 0.05$ ). Where P-value of private companies has come to 0.381 that is more than 95% confidences level 0.05 ( $0.381 > 0.05$ ), Even though private companies failed to reject the null hypothesis of normality test. It has considered that null hypothesis of Shapiro Wilk (S-W) test has rejected, as out of two factor public and private companies, public factor has rejected the null hypothesis. This substantial evidence supports that null hypothesis has rejected that data is normally distributed and accept alternate hypothesis that is data has not normally distributed. Hence nonparametric test is used to compare CSR perception between public and private companies.

**Table No: 15**

<b>(S-W) test Between Public and Private for (CSR)</b>				
PublicPrivateCompanies		Shapiro-Wilk		
		Statistic	Df	Sig.
(CSR)Q1sum	Public	.928	45	.008
	Private	.978	57	.381

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used Mann Whitney (U) test, which is a non-parametric test to study Corporate Social Responsibility (CSR) perception between public and private companies. Where median of private companies is found to be 17 and median of public companies is 12 which can witness from table no: 16. Values of test statistics are  $U = 544$ ,  $Z = 4.99$ ,  $P = 0.000$ ,  $P < 0.05$ , As we have rated point in reverse Scale, that why we will consider lesser the median better the perception and higher the median weaker the perception. Hence public

companies have better perception as compared to private. These also have been indicating through mean rank, where the mean rank of public companies has come to 35.09, and private companies mean rank has reached to 64.46, which is higher than public companies. These shows that public companies are better regarding CSR perception as compare to private companies.

**Table No: 16**

<b>Ranking of Public and Private Companies towards CSR</b>				
PublicPrivateCompanies		N	Mean Rank	Sum of Ranks
(CSR)Q1sum	Public	45	35.09	1579.00
	Private	57	64.46	3674.00
	Total	102		

Source: Primary Data.

Where P-value of Mann Whitney (U) test has come to  $P = 0.000$ , which is less than 95 % confidences level 0.05 ( $0.000 < 0.05$ ). These shows that seventh sub-null hypothesis has rejected and the alternate hypothesis has accepted, that says there is a significant difference among private and public companies perception towards Corporate Social Responsibility (CSR).

#### **4.1.7.3 To Investigate the Relationship Between Large and Medium Companies Perception Towards Corporate Social Responsibility (CSR).**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed. Shapiro Wilk (S-W) Test of normality has used for both factors large and medium. That can observe in table no: 17 where P-value of Large companies has come to 0.017 that is less than 95 % confidences level 0.05 ( $0.017 < 0.05$ ). Where P-value of medium companies has come to 0.330 that is more than 95% confidences level 0.05 ( $0.330 > 0.05$ ), Even though variable medium-size companies failed to reject the null hypothesis of normality test. It has considered that null hypothesis of Shapiro Wilk (S-W) test has rejected, as out of two factor large and medium-size, large size factor has rejected the null hypothesis. This substantial evidence supports that null hypothesis has rejected that data is normally distributed and accept alternate

hypothesis that is data has not normally distributed. Hence nonparametric test is used to compare CSR perception between large and medium-sized companies.

**Table No: 17**

<b>(S-W) test Between Large and Medium for (CSR)</b>				
LargeMediumCompanies		Shapiro-Wilk		
		Statistic	Df	Sig.
(CSR)Q1sum	Large	.951	60	.017
	Medium	.970	42	.330

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used Mann Whitney (U) test, which is a non-parametric test to study Corporate Social Responsibility (CSR) perception between large and medium-size Companies. Where median of medium size companies is found to be 17 and median of large size companies is 14.5. Values of test statistics are  $U = 838$ ,  $Z = 2.87$ ,  $P = 0.004$ ,  $P < 0.05$ , as we have rated point in reverse scale, that why we will consider lesser the median better the perception and higher the median weaker the perception. Hence large size companies have better perception as compared to medium.

**Table No: 18**

<b>Ranking of Large and Medium Companies towards CSR</b>				
LargeMediumCompanies		N	Mean Rank	Sum of Ranks
(CSR)Q1sum	Large	60	44.47	2668.00
	Medium	42	61.55	2585.00
	Total	102		

Source: Primary Data.

These also have been indicating through mean rank which is indicated in table no: 18, where the mean rank of large size companies has come to 44.47, and medium-sized companies mean rank has reached to 61.55, which is higher than large size companies. These shows that large companies are better regarding CSR Perception as compare to medium size companies.

Where P-value of Mann Whitney (U) test has come to  $P = 0.004$ , which is less than 95 % confidences level 0.05 ( $0.004 < 0.05$ ). These shows that eighth sub-null hypothesis has rejected and the alternate hypothesis has accepted, that there is a significant difference between large and medium-size companies perception towards Corporate Social Responsibility (CSR).

#### 4.1.7.4 To Investigate the Relationship Between Indian and Foreign Companies Perception Towards Ethical Practices.

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 19**

<b>(S-W) test Between Indian and Foreign for Ethics</b>				
IndianForeignCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(Ethics)Q2sum	Indian	.978	80	.183
	Foreign	.965	22	.595

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors Indian and foreign. That can witness in table no: 19 where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P – value of both the factor is more than confidences level of 95% (0.05), that has come 0.183 & 0.595 of Indian and foreign respectively, which is higher than 0.05 ( $0.183 & 0.595 > 0.05$ ). Hence parametric test is used to compare ethical perception between Indian and foreign companies.

As data is normally distributed based on Shapiro Wilk (S-W) normality test, Hence we have used independent sample T-test. That is a parametric test to study ethical perception between Indian and foreign companies. Where mean rank of Indian companies is found to be 24.34 and mean rank of foreign companies is 24.14 as per table no: 20, values of T-test statistics is  $t(100) = 0.219$ ,  $P = 0.827$ ,  $P > 0.05$ . As we have rated point in reverse Scale,

that is the reason why we will consider lesser the mean rank better, the perception. Higher the mean rank weaker the perception. However, there are no significant differences between Indian and foreign companies can be noticed as there is some slight variation of (0.20) which can observe in the mean rank.

**Table No: 20**

<b>Ranking of Indian and Foreign Companies towards Ethics</b>				
IndianForeignCompanies		N	Mean Score	Std. Deviation
(Ethics)Q2avg	Indian	80	24.34	4.07
	Foreign	22	24.14	2.68
	Total	102		

Source: Primary Data.

Where P-value of independent sample T-test come to  $P = 0.827$ , which is more than 95 % confidences level 0.05 ( $0.827 > 0.05$ ). These indicate that we have failed to reject the ninth sub-hypothesis. Hence we accepted the null hypothesis that says there is no significant difference between Indian and foreign companies perception towards ethical practices.

#### **4.1.7.5 To Investigate the Relationship Between Public and Private Companies Perception Towards Ethical Practices.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 21**

<b>(S-W) test Between Public and Private for Ethics</b>				
PublicPrivateCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(Ethics)Q2sum	Public	.970	45	.291
	Private	.973	57	.233

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors public and private. That can observe from table no: 21 where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P – value of both the factor is more than confidences level of 95% (0.05), that has come 0.291& 0.233 of public and private companies respectively, which is higher than 0.05 (0.291 & 0.233 > 0.05). Hence parametric test is used to compare ethical perception between public and private companies.

As data is normally distributed based on Shapiro Wilk (S-W) Normality Test, hence we have used independent sample T-test. Which is a parametric test to study ethical perception between public and private companies, where the mean rank of public companies are found to be 22.84 and mean rank of private companies is 25.44 as per table no: 22. Values of T-test statistics is  $t(100) = 3.62$ ,  $P = 0.000$ ,  $P < 0.05$ . As we have rated point in reverse scale, that the reason why we will consider lesser the mean rank better, the perception and higher the mean rank weaker the perception. These indicate that public companies are better regarding ethical perception compared to private companies as public companies have lower mean rank compared to private companies.

**Table No: 22**

<b>Ranking of Public and Private Companies towards Ethics</b>				
PublicPrivateCompanies		N	Mean Score	Std. Deviation
(Ethics)Q2avg	Public	45	22.84	3.42
	Private	57	25.44	3.72
	Total	102		

Source: Primary Data.

Where P-value of independent sample T-test come to  $P = 0.000$ , which is less than 95 % confidences level 0.05 ( $0.000 < 0.05$ ). These shows that tenth sub-null hypothesis has rejected and the alternate hypothesis has accepted, that says there is a significant difference amongst public and private companies perception towards ethical practices.

**4.1.7.6 To Investigate the Relationship Between Large and Medium Companies Perception Towards Ethical Practices.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 23**

<b>(S-W) test Between Large and Medium for Ethics</b>		Shapiro-Wilk		
LargeMediumCompanies		Statistic	df	Sig.
(Ethics)Q2sum	Large	.971	60	.167
	Medium	.975	42	.466

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors large and medium. Where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P-value of both the factor is more than confidences level of 95% (0.05), that has come 0.167 & 0.466 of large and medium-size companies respectively, which is higher than 0.05 (0.167 & 0.466 > 0.05) that can witness in table no: 23. Hence parametric test is used to compare ethical perception between large and medium-sized companies.

As data is normally distributed based on Shapiro Wilk (S-W) normality test, hence we have used independent sample T-test. Which is a parametric test to study ethical perception between large and medium-size companies, where the mean rank of large companies are found to be 23.77 and mean rank of medium companies is 25.05 as per table no: 24. Values of T-test statistics is  $t(100) = 1.69$ ,  $P = 0.094$ ,  $P > 0.05$ . As we have rated point in reverse scale, that is the reason why we will consider lesser the mean rank better, the perception. Moreover, higher the mean rank weaker the perception. However, there are no significant differences between large and medium-sized companies that can notice as there is a very less variation of (1.28) which can witness in mean rank.

**Table No: 24**

<b>Ranking of Large and Medium Companies towards Ethics</b>				
LargeMediumCompanies		N	Mean Score	Std. Deviation
(Ethics)Q2avg	Large	60	23.77	3.41
	Medium	42	25.05	4.23
	Total	102		

Source: Primary Data.

Where P-value of independent sample T-test come to  $P = 0.094$ , which is more than 95 % confidences level 0.05 ( $0.094 > 0.05$ ). These indicate that we have failed to reject the eleventh sub-hypothesis. Hence we accepted the null hypothesis that says there is no significant difference between large and medium-size companies perception towards ethical practices.

#### **4.1.7.7 To Investigate the Relationship Between Indian and Foreign Companies Perception Towards Environmental Accounting and Disclosure Practices.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 25**

<b>(S-W) test Between Indian and Foreign for EA</b>				
IndianForeignCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(Environmental)Q3sum	Indian	.970	80	.056
	Foreign	.961	22	.510

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors Indian and foreign. Where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P-value of both the factor is more than confidences level of 95% (0.05),



that has come 0.056 & 0.510 of Indian and foreign companies respectively, which is higher than 0.05 ( $0.056 & 0.510 > 0.05$ ) that can observe through table no: 25. Hence parametric test is used to compare environmental accounting and disclosure perception between Indian and foreign companies.

As data is normally distributed based on Shapiro Wilk (S-W) normality test, Hence we have used independent sample T-test. That is a parametric test, to study environmental accounting and disclosure perception between Indian and foreign companies. Where mean rank of Indian companies are found to be 16.98 and mean rank of foreign companies is 18.64 that can be observed through table no: 26, values of T-test statistics is  $t(100) = 2.089$ ,  $P = 0.039$ ,  $P < 0.05$ . As we have rated point in reverse scale, that is the reason why we will consider lesser the mean rank better, the perception and higher the mean rank weaker the perception. These indicate that Indian companies are better regarding environmental accounting and disclosure perception as Indian companies have lower mean rank compared to foreign companies.

**Table No: 26**

<b>Ranking of Indian and Foreign Companies towards EA</b>				
IndianForeignCompanies		N	Mean Score	Std. Deviation
(Environmental)Q3avg	Indian	80	16.98	3.39
	Foreign	22	18.64	2.95
	Total	102		

Source: Primary Data.

Where P-value of independent sample T-test come to  $P = 0.039$ , which is less than 95 % confidences level 0.05 ( $0.039 < 0.05$ ). These shows that twelfth sub-null hypothesis has rejected and the alternate hypothesis has accepted, that there is a significant difference between Indian and foreign companies perception towards environmental accounting and disclosure practices.

#### **4.1.7.8 To Investigate the Relationship Between Public and Private Companies Perception Towards Environmental Accounting and Disclosure Practices.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 27**

<b>(S-W) test Between Public and Private for EA</b>				
PublicPrivateCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(Environmental)Q3sum	Public	.951	45	.055
	Private	.965	57	.101

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors public and private. Where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P-value of both the factor is more than confidences level of 95% (0.05), that has come 0.055 & 0.101 of public and private companies respectively, which is higher than 0.05 ( $0.055 & 0.101 > 0.05$ ) that can witness from table no: 27. Hence parametric test is used to compare environmental accounting and disclosure perception between public and private companies.

**Table No: 28**

<b>Ranking of Public and Private Companies towards EA</b>				
PublicPrivateCompanies		N	Mean Score	Std. Deviation
(Environmental)Q3avg	Public	45	17.07	3.65
	Private	57	17.54	3.13
	Total	102		

Source: Primary Data.

As data is normally distributed based on Shapiro Wilk (S-W) normality test, Hence we have used independent sample T-test. That is a parametric test, to study environmental accounting and disclosure perception between public and private companies. Where mean rank of public companies are found to be 17.07 and mean rank of private companies is 17.54 as per table no: 28, values of T-test statistics is  $t(100) = .711$ ,  $P = 0.427$ ,  $P > 0.05$ .

As we have rated point in reverse scale, that is the reason why we will consider lesser the mean rank better, the perception and higher the mean rank weaker the perception. Though, there is no significant difference between public and private companies can be noticed as there is a minimal variation of (0.47) which can witness in mean rank.

Where P-value of independent sample T-test come to  $P = 0.427$ , which is more than 95 % confidences level 0.05 ( $0.427 > 0.05$ ). These indicate that we have failed to reject the thirteenth sub-hypothesis. Hence we accepted the null hypothesis saying that there is no significant difference between public and private companies perception towards environmental accounting and disclosure practices.

**4.1.7.9 To Investigate the Relationship Between Large and Medium Companies Perception Towards Environmental Accounting and Disclosure Practices.**

Shapiro Wilk (S-W) test has been run on sample data before to identify whether sample data is normally distributed or not normally distributed.

**Table No: 29**

<b>(S-W) test Between Large and Medium for EA</b>				
LargeMediumCompanies		Shapiro-Wilk		
		Statistic	df	Sig.
(Environmental)Q3sum	Large	.968	60	.117
	Medium	.974	42	.438

Source: Primary Data. (At 95% Confidences Level)

Shapiro Wilk (S-W) Test of normality has used for both factors large and medium. That can be observed from table no: 29 where Shapiro Wilk (S-W) Test failed to reject the null hypothesis that says sample data has normally distributed. Hence we accept the null hypothesis that data has normally distributed. As P-value of both the factor is more than confidences level of 95% (0.05), that has come 0.177 & 0.438 of large and medium-size companies respectively, which is higher than 0.05 ( $0.177 & 0.438 > 0.05$ ). Hence parametric test is used to compare environmental accounting and disclosure perception between large and medium-sized companies.

As data is normally distributed based on Shapiro Wilk (S-W) normality test, Hence we have used independent sample T-test. That is a parametric test to study environmental accounting and disclosure perception between large and medium-sized companies. Where the mean rank of large companies are found to be 17.88 and mean rank of medium companies is 16.55 as per table no: 30, values of T-test statistics is  $t(100) = 2.007$ ,  $P = 0.047$ ,  $P < 0.05$ , as we have rating point in the reverse scale. That is the reason why we will consider lesser the mean rank better, the perception and higher the mean rank weaker the perception. These indicate that medium-sized companies are better regarding environmental accounting and disclosure perception as medium-size companies have lower mean rank as compared to large-size companies.

**Table No: 30**

<b>Ranking of Large and Medium Companies towards EA</b>				
LargeMediumCompanies		N	Mean Score	Std. Deviation
(Environmental)Q3avg	Large	60	17.88	3.77
	Medium	42	16.55	2.50
Total		102		

Source: Primary Data.

Where P-value of independent sample T-test come to  $P = 0.047$ , which is less than 95 % confidences level 0.05 ( $0.047 < 0.05$ ). These shows that fourth sub-null hypothesis has rejected and the alternate hypothesis has accepted, that there is a significant difference between large and medium companies perception towards environmental accounting and disclosure practices.

#### **4.1.8 SUMMARY OF INTERPRETATION**

Environmental Disclosure Index (EDI) was prepared based on three major critical area that is Environmental Ethics, Environmental Management, Environmental Accounting. This EDI has considered based on investigating the factors influencing, level of corporate environmental disclosure index. With the help of one primary hypothesis and fourteen sub-hypothesis, where first five hypothesis exclusively framed to identify which different

factors those are affecting in either increasing or decreasing the level of Corporate Environmental Disclosure Index (EDI).

Based on research findings, the following assumptions can put forward. That major null hypothesis got rejected, and the major alternate hypothesis has accepted that there is a significant difference in factor influencing the level of corporate environmental disclosure of business enterprises. As out of first five sub-hypothesis framed towards investigating the factors influencing, level of corporate environmental disclosure index. Four sub-hypotheses have rejected, and alternate sub-hypothesis is accepted saying that there is a significant difference between Indian and foreign, public and private, large and medium, various sector or categories of companies level of corporate environmental disclosure index. Where only one sub-hypothesis we failed to reject the null hypothesis, hence we accepted the sub null hypothesis saying that there is no significant relationship between age of companies and its influence on the level of Corporate Environmental disclosure Index (EDI).

Second nine hypotheses framed to study factor influencing the perception of corporate towards CSR, ethics, and environmental practices and its relationship with the level of corporate environmental disclosure index. Out of nine sub-hypothesis framed six sub-null hypothesis have rejected, hence we accepted the alternative sub null hypothesis saying that there is a significant difference between companies perception towards CSR, ethics and environmental accounting and disclosure practices. Where only three sub-hypotheses we have failed to reject the null hypothesis, hence we accepted null hypothesis saying there is no significant difference between companies' perception towards CSR, ethics and environmental accounting and disclosure practices. This statement further supports to reject the major null hypothesis and accept major alternative hypothesis saying that there is a significant difference in factor influencing the level of corporate environmental disclosure of business enterprises.

#### **4.1.9 INFERENCE**

The analysis and finding show us that out of fourteen sub null hypothesis framed ten hypothesis has rejected hence alternate hypothesis has accepted. Where only in four sub null hypotheses we have failed to reject, thus accepted sub null hypothesis, this evidence is sufficient to demonstrate that there is a significant difference in factor influencing the level

of corporate environmental disclosure of business enterprises in Goa. As investigation highlight factor like Indian/foreign, foreign companies have outperformed regarding Environmental Disclosure Index (EDI) score. The business culture and ethical attitude of foreign companies have generated towards natural environment through their country culture, laws, rules and regulation similar attitude they might be followed in India as well; this is one of the reasons for foreign companies doing well in EDI Score.

Also, factor likes ownership; public companies have outperformed regarding Environmental Disclosure Index (EDI) score. Where public companies are more frequently, have to deal with third parties Like shareholder, financial institution. Hence they have more pressures for external parties to perform well regarding Environmental accounting and disclosure practices. If they do not show the respect towards the environment, they might have a fear of losing these third parties. That is one of the reasons public companies doing well in EDI Score. Likewise factors large/medium, large size companies have outperformed regarding Environmental Disclosure Index (EDI) score. As large companies have more funds and workforce as compared to the medium size companies, hence they have more funds and workforce allocation towards their environmental impact assessment and management of their company. These have led to the reason for large companies to doing well in Environmental Disclosure Index (EDI) score.

Similarly, factor like sectors or categories in which companies fall into has taken a vital role in displaying that there is a significant difference in the sector in which company falls into and its variation in Environmental Disclosure Index (EDI) score. The significant variation observed in a sector like pharmaceutical, electronic, food & beverages and chemical. Where pharmaceutical, electronic, food & beverages fall into green categories as per Directorate of Industries Trade and Commerce of Goa. Hence they are less likely to affect environment harmfully, that why they are more liberal in the account and disclosing all the environmental activities of the business. Whereas chemical falls into red categories, hence if they want to survive in a state like Goa they have to look carefully on their economic actives of business, so they do not have any adverse impact on the environment of Goa. As they have extreme pressure from society, government and NGO to follow up with their environmental impact, these are some reason behind pharmaceutical, electronic,

food & beverages and chemical companies doing well as compared to other sectors or categories in Environmental Disclosure Index (EDI) score.

**Chart No: 3**

**Factors Influencing Level of Corporate Environmental Disclosure Index (EDI).**



Source: Developed.

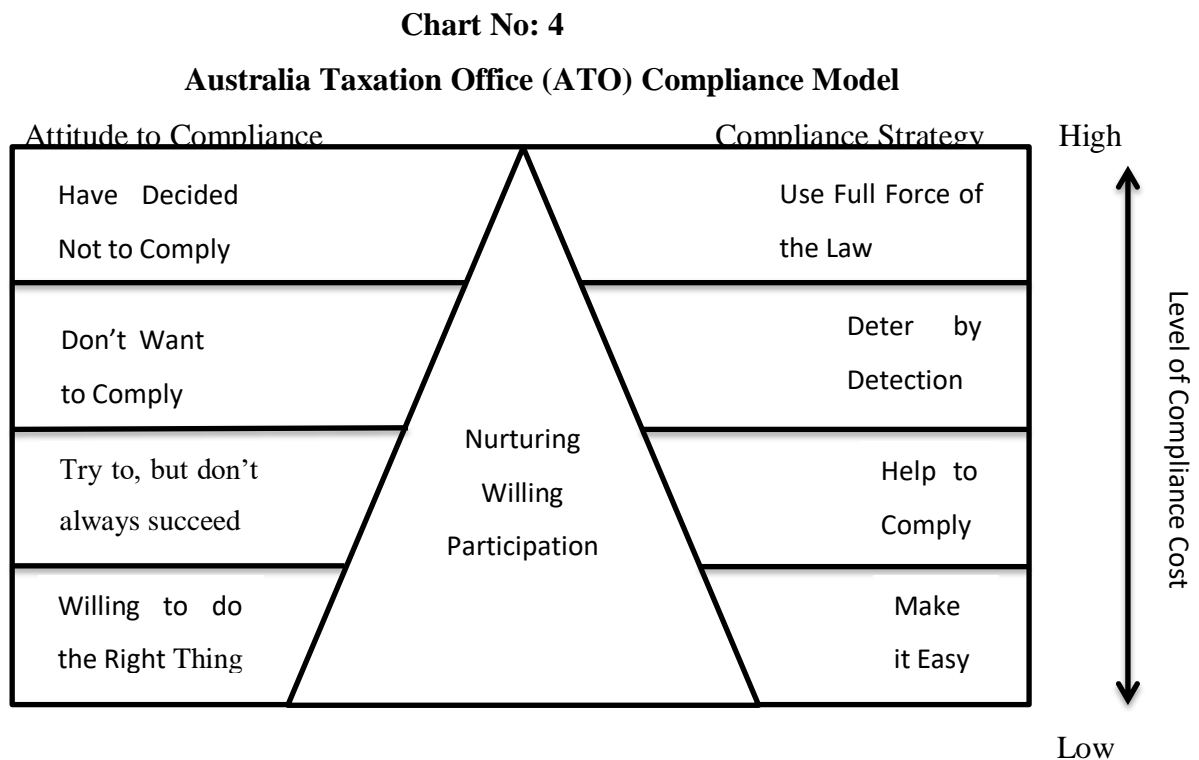
However, factor like age where no differences have identified between newly formed and old age companies EDI Score. As at present days to any business entrepreneur who is looking for a start-up has to go through all the legal requirement process which applies to all anciently formed companies, where there is no distinction between old and new has made when it comes to the applicability of various environmental laws. That is one of the reasons age factor has not affected in a variation of companies EDI Score.

These give a clear picture that excluding age all another factor like nationality, ownership, size, and sector or category is profoundly influencing the level of corporate environmental disclosure of business enterprises in Goa.

## 4.2 LEGAL COMPLIANCE OF BUSINESS FIRM ON ENVIRONMENTAL ACCOUNTING AND DISCLOSURE PRACTICES.

The theoretical framework of this research objective has adapted from Australia Taxation Office (ATO) Compliance Model. A sophisticated model of regulation is provided by the Australia Taxation Office, which builds into the model a wide range of significant variables. That explains the attitude towards compliance and compliance strategy. The model helps understand the factors that influence compliance behavior and how attitudes to compliance differ among different groups of taxpayers. Also, show what the different strategies they have adapted to address risks to the fair operation of Australia’s taxation compliances of a different individual. This study will make use of the ATO compliance model for evaluating attitude or preference in the extent of legal compliance of business firm towards environmental accounting and disclosure practices between different groups of companies in Goa. Based on the conceptual framework, hypotheses have developed as follows:

### 4.2.1 ATO COMPLIANCE MODEL



Source: Adapted from ATO Compliance Program 2013 – 14.



## 4.2.2 HYPOTHESIS

2. **H<sub>0</sub>**: There is no significant difference in the extent of legal compliance of business firm on environmental accounting and disclosure practices.

### Variables for the extent of legal compliance of business firms

- Having, ISO certificate.
- Adopting the various laws and acts governing their company.
- Have to pay any fine or penalty with regards to the environment.

### Groups and their Preferences towards Compliance:

- Nationality (Indian / Foreign)
- Ownership (Public / Private)
- Size (Large / Medium)
- Implementing / Non-Implementing Environmental Accounting
- Sector or Categories

### 4.2.2.1 SUB – HYPOTHESIS:

1. H<sub>0</sub>: Preference to ISO certification does not vary between Indian and foreign companies.
2. H<sub>0</sub>: Preference to ISO certification does not vary between public and private companies.
3. H<sub>0</sub>: Preference to ISO certification does not vary between large and medium companies.
4. H<sub>0</sub>: Preference to ISO certification does not vary between companies implementing and non-implementing environmental accounting.
5. H<sub>0</sub>: Preference to ISO certification does not vary between sector/categories of companies.

6. H<sub>0</sub>: Preference to compliance with various laws does not vary between Indian and foreign companies.
7. H<sub>0</sub>: Preference to compliance with various laws does not vary between public and private companies.
8. H<sub>0</sub>: Preference to compliance with various laws does not vary between large and medium companies.
9. H<sub>0</sub>: Preference to compliance with various laws does not vary between companies implementing and non-implementing environmental accounting.
10. H<sub>0</sub>: Preference to compliance with various laws does not vary between sector/categories of companies.
11. H<sub>0</sub>: Fine and penalties paid towards environmental matters does not vary between Indian and foreign companies.
12. H<sub>0</sub>: Fine and penalties paid towards environmental matters does not vary between public and private companies.
13. H<sub>0</sub>: Fine and penalties paid towards environmental matters does not vary between large and medium companies.
14. H<sub>0</sub>: Fine and penalties paid towards environmental matters does not vary between companies implementing and non-implementing environmental accounting.
15. H<sub>0</sub>: Fine and penalties paid towards environmental matters does not vary between sector/categories of companies.

#### 4.2.3 PREFERENCE OF DIFFERENT GROUPS OF COMPANIES IN EXTENT OF ISO CERTIFICATION COMPLIANCE.

To investigate the preference of different groups of companies in the extent of ISO certification compliance. First, five sub-hypothesis has framed based on the five different groups of companies. Before scrutinizing this five hypothesis, let's understand, which are different ISO certifications available, what are its specialty, and which different categories companies this certification are applicable. The below table speaks details about various categories of ISO certification, its specialization, and its applicability to different sectors of companies.

**Table No: 31**

<b>Different Categories of ISO, Its Specialization, and Its Applicability</b>		
<b>Different Categories of ISO</b>	<b>Specialisation</b>	<b>Applicability</b>
<b>ISO – 9001</b>	<p>ISO – 9001 specifies requirements for a <b>quality management</b> system where an organization, needs to demonstrate its ability to constantly provide a product that meets customer and applicable statutory and regulatory requirements and aims to enhance customer satisfaction over the effective application of the system. All requirements of ISO - 9001 are generic and are intended to apply for <b>all organizations</b>, regardless of type, size and product provided, Where any requirement(s) of ISO - 9001 cannot be functional due to the nature of an organization and its product, this can consider for exclusion.</p> <p>Reference:  <a href="http://www.iso.org/iso/home/standards/management-standards/iso_9000.htm">http://www.iso.org/iso/home/standards/management-standards/iso_9000.htm</a></p>	<ol style="list-style-type: none"> <li>1 Pharmaceutical</li> <li>2 Electrical</li> <li>3 Electronic</li> <li>4 Chemical</li> <li>5 Plastic</li> <li>6 Engineering</li> <li>7 Food and Beverages</li> <li>8 Printing and Packaging</li> <li>9 Iron and Steel</li> <li>10 Textile</li> </ol>
<b>ISO – 14001</b>	<p>The ISO 14000 family of standards provides practical tools for organizations and companies of all kinds looking to manage their <b>environmental responsibilities</b>. ISO 14001: 2015 and its supporting standards such as ISO 14006: 2011 focus on environmental systems to achieve this. The other 14000 standards in the family focus on particular approaches such as labeling, communications, audits, and life cycle analysis, also environmental challenges such as climate change.</p>	<ol style="list-style-type: none"> <li>1. Pharmaceutical</li> <li>2. Electrical</li> <li>3. Electronic</li> <li>4. Chemical</li> <li>5. Plastic</li> <li>6. Engineering</li> <li>7. Food and Beverages</li> <li>8. Printing and Packaging</li> </ol>

	<p>ISO 14001: 2015 has sets-out the essential criteria for an environmental management system and can certify too. It maps out a framework which an organization or company can follow to set up a well-organized environmental management system. That could be used by <b>any organization</b> regardless of its activity or sector.</p> <p>Reference:  <a href="http://www.iso.org/iso/home/standards/management-standards/iso14000.htm">http://www.iso.org/iso/home/standards/management-standards/iso14000.htm</a></p>	<p>9. Iron and Steel 10. Textile</p>
<p><b>ISO – OHSAS 18001</b></p>	<p>OHSAS 18000 said to be an International <b>Occupational Health and Safety Management</b> System Description. Essentially, OHSAS assists in a variety of aspects its help: minimize risk to the employee, improve an existing Occupational Health System (OH&amp;S) Management System  The OHSAS Specification applies to <b>any organization</b> that wishes to: Establish an OH&amp;S Management system to eradicate or minimize risk to employees and another interested party who may expose to OH&amp;S risks associated with its activities.</p> <p>Reference:  <a href="https://www.ohsas-18001-occupational-health-and-safety.com/index.htm">https://www.ohsas-18001-occupational-health-and-safety.com/index.htm</a></p>	<p>1. Pharmaceutical 2. Electrical 3. Electronic 4. Chemical 5. Plastic 6. Engineering 7. Food and Beverages 8. Printing and Packaging 9. Iron and Steel 10. Textile</p>
<p><b>ISO – 22000</b></p>	<p>ISO 22000 sets out the requirements for a <b>food safety management system</b> and can certify too. It maps out what an organization requires to do to demonstrate its capability to control food safety hazards to ensure that food is safe. It can be used by <b>any organization</b> regardless of its size or position <b>in the food chain.</b></p> <p>Reference:  <a href="http://www.iso.org/iso/home/standards/management-standards/iso22000.htm">http://www.iso.org/iso/home/standards/management-standards/iso22000.htm</a></p>	<p>1. Pharmaceutical 2. Food and Beverages</p>
<p><b>TUV Nord Certification</b></p>	<p><b>TUV NORD GROUP</b> is a technical service provider with global activities. Established in 1869 and headquartered in Hanover, Germany, the group employs more than 10,000 folks in more than 70 countries of Asia, America, Europe, and Africa.</p>	<p>1. Pharmaceutical 2. Electrical 3. Electronic 4. Chemical 5. Plastic 6. Engineering 7. Food and</p>

	<p>They Provide different System certification for the organization</p> <ol style="list-style-type: none"> <li>1. EN ISO-9000 family for quality management standards</li> <li>2. DIN EN ISO 14001 / EMAS certification of environmental management systems</li> <li>3. IFS and BRC food certification</li> <li>4. Occupational Health Management systems as ISO 45001</li> </ol> <p>This certificate of TUV NORD applies to all organizations if they wish to follow the guidelines of the same, as ISO organization is more popular than TUV NORD most of the organization go for ISO certification. However, both organizations do have similar guidelines as well as similar certification.</p> <p>Reference:  <a href="https://www.tuev-nord.de/en/company/certification/system-certification/">https://www.tuev-nord.de/en/company/certification/system-certification/</a></p>	<p>Beverages</p> <ol style="list-style-type: none"> <li>8. Printing and Packaging</li> <li>9. Iron and Steel</li> <li>10. Textile</li> </ol>
	<p>We can consider the TUV certification as equivalent to ISO – 9001 which is for quality, as per specified by the interviewer, That they received this TUV NORD certification for their product quality. ( Hence we have to merge this TUV Nord certificate with ISO – 9001 certifications for our analysis )</p>	

Source: Official Website of ISO and TUV Nord Organisation.

#### 4.2.3.1 To Evaluate Preference of Indian and Foreign Companies in Extent of ISO Certification Compliances.

The question raised to companies was like, do they have any ISO certificate for their organization. The analysis was done amongst Indian and foreign companies to evaluate their preference towards the extent of ISO certification compliances to see if there is any significant difference between them. To analysis, the same Chi-Square test of independence of attributes is used. The Chi-Square test show the result as  $X^2 = 1.88$ ,  $P = 0.169$ , As P-value has come to more than 95% confidence level 0.05 ( $P > 0.05$ ), that is

(0.169 > 0.05). These indicate that we have failed to reject the first sub – null hypothesis. Hence we accept the null hypothesis saying that preference to ISO certification does not vary between Indian and foreign companies.

**Table No: 32**

<b>Indian and Foreign Companies Preferences Towards ISO Certification</b>						
Group-Based on Nationality	ISO Certificates		No - ISO Certificates		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
Indian	54	66.67	27	33.33	81	100
Foreign	18	81.82	4	18.18	22	100
Total	72	69.9	31	30.1	103	100

Source: Primary Data.

A similar result could witness regarding percentages as per table no: 32 where there is some minor variation of (15.15%) that can observe in the adoption of ISO certification between Indian and foreign companies. Hence we conclude that nationality of companies and it preference towards ISO certification does not vary.

**Table No: 33**

<b>Indian and Foreign Companies Preferences Towards Individual ISO Certification</b>						
Group-Based on Nationality	Number of Companies	Companies Have ISO Certificates				
		ISO-9001	ISO-14001	ISO-18001	ISO-22001	ISO-TUV
		Percentage	Percentage	Percentage	Percentage	Percentage
Indian	81	50.62	17.28	6.17	6.17	8.64
Foreign	22	54.55	54.55	22.73	-	-
Total	103	51.46	25.24	9.71	4.85	6.8

Source: Primary Data.

However, regarding ISO - 14001 and ISO - 18001, there is significant difference can be observed between preferences of nationality base group companies towards these two individual certificates as per table no: 33. As foreign companies percentage is higher in the adoption of both this ISO certification that is  $54.55 > 17.28$  and  $22.73 > 6.17$  respectively. Whereas there is no significant difference can be observed in companies' preference towards individual certificates like ISO - 9001, ISO - 22001, and ISO - TUV. Which does not support in rejecting first sub null-hypothesis, hence we accept the null- hypothesis saying that preference towards the extent of ISO certification compliance does not vary between Indian and foreign companies.

#### 4.2.3.2 To Evaluate Preference of Public and Private Companies in Extent of ISO Certification Compliances.

The analysis was done amongst public and private companies to evaluate their preference towards the extent of ISO certification compliances to see if there is any significant difference between them. To analysis, the same Chi-Square test of independence of attributes is used. The Chi-Square test show the result as  $X^2 = 8.74$ ,  $P = 0.003$ , As P-value has come less than 95% confidence level 0.05 ( $P < 0.05$ ), that is ( $0.003 < 0.05$ ). This outcome shows that second sub null-hypothesis has rejected and alternate sub-hypothesis has accepted from the study, which says preference to ISO certification does vary between public and private companies.

**Table No: 34**

<b>Public and Private Companies Preferences Towards ISO Certification</b>						
Group-Based on Ownership	Have ISO Certificates		Don't Have ISO Certificates		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
Public	39	84.78	7	15.22	46	100
Private	33	57.89	24	42.11	57	100
Total	72	69.9	31	30.1	103	100

Source: Primary Data.

The result also could be witnessed regarding percentage where almost 26.89% variation could observe in preference of public and private companies towards ISO certification as per table no: 34. As public companies have significantly outperformed as compared to private in the adoption of ISO certification compliance, Hence we conclude that ownership of companies and it preference towards the extent of ISO certification compliance does vary.

**Table No: 35**

<b>Public and Private Companies Preferences Towards Individual ISO Certification</b>						
Group-Based on Ownership	Number of Companies	Companies Have ISO Certificates				
		ISO-9001	ISO-14001	ISO-18001	ISO-22001	ISO-TUV
		Percentage	Percentage	Percentage	Percentage	Percentage
Public	46	45.65	34.78	15.22	8.7	10.87
Private	57	56.14	17.54	5.26	1.75	3.51
Total	103	51.46	25.24	9.71	4.85	6.8

Source: Primary Data.

A similar outcome can witness in the perception of companies on individual ISO certificates. Where, public companies have higher percentage in ISO - 14001, ISO - 18001, ISO - 22001, and ISO - TUV ( $17.54 < 34.78$ ,  $5.26 < 15.22$ ,  $1.75 < 8.7$ ,  $3.51 < 10.87$ ) respectively. Except ISO – 9001 certification private companies have adopted more as compared to the public ( $56.14 > 45.65$ ) as it can witness in table no: 35. That further support in rejecting second sub null-hypothesis and accepting the alternate hypothesis of the study that says preference towards the extent of ISO certification compliance does vary between public and private companies.

#### **4.2.3.3 To Evaluate Preference of Large and Medium Companies in the Extent of ISO Certification Compliances.**

The analysis was done amongst large and medium companies to evaluate their preference towards the extent of ISO certification compliances to see if there is any significant difference between them. To analysis, the same Chi-Square test of independence of attributes is used. The Chi-Square test show the result as  $X^2 = 7.72$ ,  $P = 0.005$ , As P-value is less than 95% confidences level 0.05 ( $P < 0.05$ ), that has come to ( $0.005 < 0.05$ ). This result shows that third sub null-hypothesis have rejected and the alternate hypothesis has accepted of the study, which says preference to ISO certification does vary between large and medium companies.



**Table No: 36**

<b>Large and Medium Companies Preferences Towards ISO Certification</b>						
Group-Based on Size	Have ISO Certificates		Don't Have ISO Certificates		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
Large	49	80.33	12	19.67	61	100
Medium	23	54.76	19	45.24	42	100
Total	72	69.9	31	30.1	103	100

Source: Primary Data.

The result also could be observed regarding percentage where almost 25.57% variation can witness in preference of large and medium companies towards ISO certification as per table no: 36. As large companies have significantly outperformed as compared to medium in the adoption of ISO certification compliance, Hence we conclude that size of companies, and its preferences towards the extent of ISO certification compliance does vary.

**Table No: 37**

<b>Large and Medium Companies Preferences Towards Individual ISO Certification</b>						
Group-Based on Size	Number of Companies	Companies Have ISO Certificates				
		ISO-9001	ISO-14001	ISO-18001	ISO-22001	ISO-TUV
		Percentage	Percentage	Percentage	Percentage	Percentage
Large	61	57.38	37.7	14.75	8.2	3.28
Medium	42	42.86	7.14	2.38	-	11.9
Total	103	51.46	25.24	9.71	4.85	6.8

Source: Primary Data.

A similar outcome can observe in the perception of companies on individual ISO certificates. Where large companies have higher percentage in ISO - 9001, ISO - 14001, ISO - 18001, and ISO - 22001 ( $42.86 < 57.38$ ,  $7.14 < 37.7$ ,  $2.38 < 14.75$ ,  $0 < 8.2$ ) respectively. Except for ISO - TUV certification medium companies have adopted more as compared to the large ( $11.9 > 3.28$ ) that can observe in table no: 37. This result support in rejecting Third sub null-hypothesis and accepting the alternate hypothesis of the study that says preference towards the extent of ISO certification compliance does vary between large and medium companies.

#### 4.2.3.4 To Evaluate Preference of Companies Implementing and Non-Implementing Environmental Accounting in the Extent of ISO Certification Compliances.

The analysis also has done between companies implementing and non-implementing environmental accounting to evaluate their preference towards the extent of ISO certification compliances to see if there is any significant difference between them. To analysis, the same Chi-Square test of independence of attributes is used. The Chi-square test show the result as  $X^2 = 24.89$ ,  $P = 0.000$ ,  $P < 0.05$ , As P-value has come less than 95% confidence level 0.05 ( $P < 0.05$ ), that is ( $0.000 < 0.05$ ). This outcome shows that fourth sub null-hypothesis has rejected, hence alternate sub-hypothesis has accepted from the study, which says preference to ISO certification does vary between companies implementing and non-implementing environmental accounting.

**Table No: 38**

<b>Preparing and Non-Preparing (EA) Companies Preferences Towards ISO Certification</b>						
Group-Based on Adoption of Environmental Accounting	Have ISO Certificates		Don't Have ISO Certificates		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
Preparing Environmental Accounting	56	87.50	8	12.50	64	100
Not-Preparing Environmental Accounting	16	41.03	23	58.97	39	100
Total	72	69.9	31	30.1	103	100

Source: Primary Data.

The result also could be observed regarding percentage where almost 46.47% variation can witness in preference of companies implementing and non-implementing environmental accounting towards ISO certification as per table no: 38. As companies implementing environmental accounting have significantly outperformed as compared to non-implementing environmental accounting companies, in the adoption of ISO certification compliance, hence we conclude that adoption of environmental accounting by companies and it preference towards the extent of ISO certification compliance does vary.

**Table No: 39**

<b>Preparing and Non-Preparing (EA) Companies Preferences Towards Individual ISO Certification</b>						
Group-Based on Adoption of Environmental Accounting	Number of Companies	Companies Have ISO Certificates				
		ISO-9001	ISO-14001	ISO-18001	ISO-22001	ISO-TUV
		Percentage	Percentage	Percentage	Percentage	Percentage
Preparing Environmental Accounting	64	57.81	40.63	15.62	6.25	9.37
Not-Preparing Environmental Accounting	39	41.03	-	-	2.56	2.56
Total	103	51.46	25.24	9.71	4.85	6.8

Source: Primary Data.

A similar outcome could witness in the perception of companies on individual ISO certificates. Where, companies implementing environmental accounting have a higher percentage in all individual ISO certification ( $41.03 < 57.81$ ,  $0 < 40.63$ ,  $0 < 15.62$ ,  $2.53 < 6.25$ ,  $2.56 < 9.37$ ) respectively as compared to those company who do not implement environmental accounting into their firms which can observe through table no: 39. That also highlights how much important role played by environmental accounting in the extent of ISO certification compliances. This further Support in rejecting fourth sub null-hypothesis and accepting the alternate hypothesis of the study that says preference towards the extent of ISO certification compliance does vary between implementing and non-implementing environmental accounting companies.

#### **4.2.3.5 To Evaluate Preference of Sector/Categories Companies in the Extent of ISO Certification Compliances.**

The investigation was done amongst various sector/categories of companies to evaluate their preference towards the extent of ISO certification compliances to see if there is any significant difference between them. The analysis highlights categories like pharmaceutical, electrical, electronic, chemical, plastic, engineering, food & beverage, are more than 60 % percent of them have Some or the other ISO certificate. Top three categories are electrical and electronic with 100 % of compliance and engineering with 83.33% compliance concerning to ISO certification. Top three categories which neglected

the adoption of ISO certification are printing & packaging, iron & steel, and textile with least percentage (40, 47.36, 33.33) respectively. This highlight that there is significant variation in preference of sector/categories companies in the extent of ISO certification compliances.

Similarly, analysis of companies preferences towards individual ISO certification has done, where ISO - 9001 adopting top five Categories were electrical, electronic, chemical, plastic, and engineering with more than 50% of compliance. Top three most categories which neglected adoption of ISO - 9001 are textile, printing and stationery, pharmaceuticals with least percentage (0, 20, 20) respectively. Whereas ISO - 14001 adopted by top five categories. Those are pharmaceutical, electrical, electronic, chemical, plastic, with compliance percentage of ranging 28 to 50. Top three most categories which neglected adoption of ISO -14001 are engineering, printing and packaging, textile with zero percentage of compliance.

**Table No: 40**

<b>Sector-wise Classification of Companies Preferences Towards Individual ISO Certification</b>							
Group-Based on Sector/Categories	Number of Companies	Companies Have ISO Certificates	ISO-9001	ISO-14001	ISO-18001	ISO-22001	ISO-TUV
		%	%	%	%	%	%
Pharmaceutical	10	70	20	50	20	(0)	0
Electrical	4	100	50	50	50	(0)	50
Electronic	11	100	63.64	36.36	9.09	(0)	18.18
Chemical	15	73.33	53.33	33.33	0	13.33	0
Plastic	7	71.42	71.43	28.57	14.29	14.29	0
Engineering	18	83.33	83.33	0	0	0	0
Food & Beverage	11	63.63	36.36	27.27	18.18	18.18	0
Printing & Packaging	5	40	20	0	0	(0)	40
Iron & Steel	19	47.36	47.37	6.32	10.53	(0)	0
Textile	3	33.33	0	0	0	(0)	33.33
<b>Total</b>	<b>103</b>	69.90	51.46	25.24	9.71	4.85	6.8

Source: Primary Data.

Where (0) this sign indicates that ISO certificate is not applicable to that particular sector/category of companies as details mention in table no: 31. Titled different categories

of ISO, its specialization, and its applicability, where (%) this sign indicate all figures are in percentage form.

Where table no: 40 showcases that ISO - 18001 adopted by top five categories are pharmaceuticals, electrical, plastic, food & beverage, iron & steel, with compliance percentage of ranging 10 to 50. Topmost categories which neglected adoption of ISO - 18001 are chemical, engineering, printing and packaging, textile with zero percentage of compliance. Where ISO - 22001 has only adopted by three categories of companies those are chemical, plastic, food & beverage, this certification is highly neglected by pharmaceuticals companies as it is most applicable to them but zero percentage of compliance has witnessed. The relaxation could provide too electrical, electronic, printing, and packaging, iron, and steel, textile, as per details mentioned in table no: 31, titled different categories of ISO, its specialization, and its applicability. The ISO - TUV certificate also adopted by four categories of companies' electrical, electronic, printing, and packaging, textile. Relaxation also can be provided as it is similar to ISO - 9001. The analysis also highlights that electrical categories are only categories of companies that have complied with almost all ISO certification. This result of analysis support in rejecting the fifth sub null-hypothesis, hence we reject the null hypothesis and accept the alternate hypothesis of the study that says preference to ISO certification does vary between sector/categories of companies.

#### **4.2.4 PREFERENCE OF DIFFERENT GROUPS OF COMPANIES IN EXTENT OF VARIOUS LAWS COMPLIANCE.**

To investigate the preference of different groups of companies in the extent of various laws compliance. Second, five sub-hypotheses have framed that starts from 6<sup>th</sup> to 10<sup>th</sup> hypothesis, based on the five different groups of companies, before analyzing this five hypothesis lets understand, which are different laws that are governing companies, the applicability of these laws to various sector/categories of companies. As all laws may not be applicable for all the categories, this bifurcation has been done to get the precise result of analysis and to eliminate biases with different sector/categories of companies. The below table speak details about various laws and its applicability to different sectors of companies.

**Table No: 41**

<b>Various Laws and Acts Governing Company</b>		
<b>Sr.No:</b>	<b>Various Laws</b>	<b>Applicability of Laws to Each Category</b>
1.	a. The Indian Fisheries Act 1897 b. The Indian Port Act 1908	1) Engineering
2.	c. The Poison Act 1919	1) Pharmaceutical 2) Chemical 3) Plastic 4) Food and Beverages 5) Textile
3.	f. The Mines & Minerals (Regulation and Development) Act 1947	1) Iron and Steel
4.	d. The Indian Boiler Act 1923 e. The Indian Forest Act 1927 g. The Factories ( Pollution & Pesticides ) Act 1948 h. Industries ( Development & Regulation ) Act 1951 i. Wildlife (Protection) Act 1972 j. The River Board Act 1956 k. Water ( Prevention & Control of Pollution) Act 1974 l. Forest ( Conservation ) Act 1980 m. Air ( Privation & Control of Pollution ) Act 1981 n. Narcotic Drugs & Psychotropic Substances Act 1985 o. Environmental ( Protection ) Act 1986 p. Hazardous Wastes (Management & Handling) Rule 1989 q. National Environmental Appellate Authority Act 1997 r. Ozone Depleting Substance (Regulation and Control) Rules 2000 s. Biological Diversity Act 2002 t. Electricity Act 2003 u. Company Act 2013	1) Pharmaceutical 2) Electrical 3) Electronic 4) Chemical 5) Plastic 6) Engineering 7) Food and Beverages 8) Printing and Packaging 9) Iron and Steel 10) Textile

Source: Primary Data.

**Table No: 42**

<b>Preference of companies and their extent of compliance with various Laws and Act.</b>									
Various Laws and Act Governing	Different Groups with Percentage of Compliance								
	Indian	Foreign	Public	Private	Large	Medium	Preparing EA	Not Preparing EA	Total
<b>Number of Companies</b>	<b>81</b>	<b>22</b>	<b>46</b>	<b>57</b>	<b>61</b>	<b>42</b>	<b>64</b>	<b>39</b>	<b>103</b>
The Indian Fisheries Act 1897	0	0	0	0	0	0	0	0	0
The Indian Port Act 1908	3.7	0	2.17	3.51	3.28	2.38	4.69	0	2.91

The Poison Act 1919	7.41	22.73	19.57	3.51	13.11	7.14	9.38	12.82	10.68
The Indian Boiler Act 1923	40.74	54.55	45.65	42.11	49.18	35.71	40.63	48.72	43.69
The Indian Forest Act 1927	11.11	13.64	15.22	8.77	13.11	9.52	14.06	7.96	11.65
The Mines & Minerals (Regulation and Development) Act 1947	12.35	22.73	13.04	15.79	16.39	11.9	15.63	12.82	14.56
The Factories (Pollution & Pesticides) Act 1948	83.95	86.36	78.26	89.47	81.97	88.1	81.52	89.74	84.47
Industries (Development & Regulation) Act 1951	59.26	50	58.7	56.14	60.66	52.38	57.81	56.41	57.28
Wildlife (Protection) Act 1972.	4.94	4.55	6.52	3.51	4.92	4.76	4.69	5.12	4.85
The River Board Act 1956	20.99	18.18	28.26	14.04	19.67	21.43	31.25	2.56	20.39
Water (Prevention & Control of Pollution) Act 1974	87.65	90.91	93.48	84.2	96.72	76.19	93.75	91.17	88.35
Forest (Conservation) Act 1980	20.99	13.64	28.26	12.28	22.95	14.29	25	10.25	19.42
Air (Privation & Control of Pollution) Act 1981	82.72	86.36	93.48	75.44	88.52	76.19	90.63	71.79	83.5
Narcotic Drugs & Psychotropic Substances Act 1985	13.58	13.64	17.39	10.53	13.11	14.29	10.94	17.95	13.59
Environmental (Protection) Act 1986	75.31	90.91	89.13	70.18	90.16	61.9	85.94	66.67	78.64
Hazardous Wastes (Management & Handling) Rule 1989	88.89	90.91	93.48	85.96	90.16	88.1	92.19	84.62	89.32
National Environmental Appellate Authority Act 1997	8.64	18.18	13.04	8.77	9.84	11.9	10.94	10.26	10.68
Ozone Depleting Substance (Regulation and Control) Rules 2000	17.28	45.45	34.78	14.04	31.15	11.9	29.69	12.82	23.3

Biological Diversity Act 2002	11.11	18.18	17.39	8.77	16.39	7.14	14.06	10.25	12.62
Electricity Act 2003	46.91	63.64	54.35	47.37	54.1	45.24	59.38	35.90	50.49
Company Act 2013	92.59	95.45	93.48	92.98	93.44	92.86	96.88	87.18	93.2

Source: Primary Data.

Where purple color indicates those laws and acts that are only applicable to those specific categories of companies. As mention in table no: 41, titled various laws and acts governing company, the yellow color highlights which group of companies has higher compliance percentage as compared to another indicator of that particular group. The blue color highlights the top six laws which are mostly followed by companies.

#### 4.2.4.1 Preference of Indian and Foreign Companies in the Extent of Various Laws and Acts Compliances.

The analysis shows in table no: 42, titled preference of companies and their extent of compliance with various laws and acts. The Indian Fisheries Act 1897 has been completely overlooked by both the groups based on nationality. The investigation also shows significant variation that can observe in both the factors of the group were foreign companies have higher preferences in the extent of compliances as compared to the Indian. That can be witnessed in fifteen various laws as highlighted in the table with yellow color. On the other hand, Indian companies have higher preferences in only five different laws. As this variation in the extent of compliances supports in rejecting the sixth sub null-hypothesis of the study, hence we reject the sixth sub null- hypothesis and accept the alternate hypothesis of the research that says preference to compliance with various laws does vary between Indian and foreign companies.

#### 4.2.4.2 Preference of Public and Private Companies in the Extent of Various Laws and Acts Compliances.

The analysis indicates in table no: 42 that there is a significant variation in which can be observed in both the groups of companies based on their ownership. Where public companies have higher preferences in the extent of compliances as compared to the private, that can be observed in seventeen various laws as highlighted in the table with yellow color. On the other hand, private companies have higher preferences in only three



different laws. As this massive variation in the extent of compliances supports in rejecting the seventh sub null-hypothesis of the study, hence we reject the seventh sub null-hypothesis and accept the alternate hypothesis of the research that says preference to compliance with various laws does vary between public and private companies.

#### **4.2.4.3 Preference of Large and Medium Companies in the Extent of Various Laws and Acts Compliances.**

The analysis indicates in table no: 42 that there is a significant variation in that can observe in both the groups of companies based on their size. Where large companies have higher preferences in the extent of compliances as compared to the medium, that can be observed in sixteen various laws as highlighted in the table with yellow color. On the other hand, medium companies have higher preferences in only four different laws. As this enormous variation in the extent of compliances supports in rejecting the Eighth sub null-hypothesis, hence we reject the eighth sub null- hypothesis and accept the alternate hypothesis of the study that says preference to compliance with various laws does vary between large and medium companies.

#### **4.2.4.4 Preference of Implementing and Not-Implementing Environmental Accounting Companies in the Extent of Various Laws and Acts Compliances.**

The analysis indicates in table no: 42 that there is a significant variation in that can witness in both the groups of companies based on their adoption of environmental accounting. Where companies implementing environmental accounting are having higher preferences in the extent of compliances as compared to the non-implementing environmental accounting companies, that can be observed in fifteen various laws as highlighted in the table with yellow color. On other hand non-implementing, environmental accounting companies have higher preferences in only five different laws. As this enormous variation in the extent of compliances supports in rejecting the ninth sub null-hypothesis, hence we reject the ninth sub null- hypothesis and accept the alternate hypothesis of the study that says preference to compliance with various laws does vary between companies implementing and non-implementing environmental accounting.

#### **4.2.4.5 To Evaluate Preference of Sector/Categories Companies in the Extent of Various Laws and Acts Compliances.**

The analysis shows the individual categories of companies' extent of compliances with various laws. Were pharmaceutical companies almost comply with all the laws out of eighteen laws applicable to them except The River Board Act 1956 which is a most neglected act by pharmaceutical sector. As out of a total number of pharmaceutical companies hardly 20% companies agree to comply with this act. Where it also can be observed in the analysis that pharmaceutical sector is the only sector that almost complies with all those laws that apply to them that can witness in table no: 43. Titled preference of sectors/categories of companies and their extent of compliance with various laws and acts, as highlighted in yellow color. Were electrical category companies show compliances rate above 50 % in eight acts out of seventeen Acts applicable. Were in nine other laws applicable it shows zero percentage compliance rates. Electronic category of companies complies with eight laws out of seventeen laws applicable to at least 30% compliances rate. Were in other nine laws applicable it shows less than 30% of compliance rate and zero percentage of compliance rate can be observed in as far as Wildlife (Protection) Act 1972, Biological Diversity Act 2002 from the electronic sector of companies.

In the chemical category of companies, the compliance rate is above 30% is with nine various laws, on other-side nine various laws shows less than 30% compliances rate. Were most neglected law is Wildlife (Protection) Act 1972 with zero percentage of compliance rate and also The Poison Act 1919 show 13.33% percentage of compliances rate, even after this act is most applicable to chemical category companies. The most of companies in this a category has failed to implement this law into their business activist that can observe from the analysis. Plastic category companies have 40% and above the rate in eight various laws were in other ten various laws the percentage of compliance is below 40%. Where the Poison Act 1919, Wildlife (Protection) Act 1972, The River Board Act 1956, Narcotic Drugs & Psychotropic Substances Act 1985 in this laws plastic category of companies have zero percentage of compliance rate.

**Table No: 43**

<b>Preference of Sectors/Categories of companies and their extent of compliance with various Laws and Act.</b>											
	Phar mac eutic al	Elec tric al	Electr onic	Chem ical	Plasti c	Engin eering	Food & Bever age	Printi ng & Packa ging	Iron & Steel	Textil e	Total
Total companies	10	4	11	15	7	18	11	5	19	3	103
Laws to be followed	18	17	17	18	18	19	18	17	18	18	
The Indian Fisheries Act 1897	0	0	0	0	0	0	0	0	0	0	0
The Indian Port Act 1908	0	0	0	0	0	5.56	0	0	10.53	0	2.91
The Poison Act 1919	50	0	0	13.33	0	0	27.27	0	5.26	0	10.68
The Indian Boiler Act 1923	100	0	9.09	60	42.86	5.56	54.55	0	73.68	33.33	43.69
The Indian Forest Act 1927	50	0	18.18	6.67	14.29	11.11	9.09	0	0	0	11.65
The Mines & Minerals (Regulation & Development) Act 1947	20	0	27.27	6.67	14.29	5.56	0	0	36.84	0	14.56
The Factories (Pollution & Pesticides) Act 1948	90	0	72.73	93.33	85.71	88.89	100	100	78.95	100	84.47
Industries (Development & Regulation) Act 1951	60	50	45.45	53.33	71.43	55.56	27.27	100	63.16	100	57.28
Wildlife (Protection) Act 1972.	30	0	0	0	0	5.56	9.09	0	0	0	4.85
The River Board Act 1956	20	100	27.27	20	0	33.33	18.18	0	5.26	0	20.39
Water (Prevention & Control of	90	50	100	86.67	100	72.22	100	100	89.47	100	88.35

Pollution Act 1974											
Forest (Conservation) Act 1980	60	0	18.18	13.33	14.29	5.56	45.45	20	10.53	0	19.42
Air (Prevention & Control of Pollution) Act 1981	90	100	90.91	100	85.71	66.67	72.73	40	89.47	100	83.5
Narcotic Drugs & Psychotropic Substances Act 1985	50	0	9.09	20	0	0	27.27	0	10.53	0	13.59
Environmental (Protection) Act 1986	90	50	100	86.67	71.43	61.11	90.91	100	73.68	33.33	78.64
Hazardous Wastes (Management & Handling) Rule 1989	90	100	90.91	86.67	85.71	88.89	100	100	84.21	66.67	89.32
National Environmental Appellate Authority Act 1997	30	0	18.18	13.33	14.29	5.56	18.18	0	0	0	10.68
Ozone Depleting Substance (Regulation and Control) Rules 2000	70	0	27.27	26.67	14.29	0	18.18	0	31.58	33.33	23.3
Biological Diversity Act 2002	40	0	0	13.33	28.57	5.56	9.09	0	15.79	0	12.62
Electricity Act 2003	90	50	72.73	53.33	14.29	11.11	45.45	60	68.42	33.33	50.49
Company Act 2013	90	100	100	86.67	71.43	100	100	100	89.47	100	93.2

Source: Primary Data.

Where purple color indicates those laws and acts are only applicable to those specific categories of companies, As mention in table no: 41, titled various laws and acts governing company.

In engineering category seven laws are followed by almost 40% and above companies, were twelve various laws has neglected by companies by less than 40% compliances rate. Even zero percentage of compliance rates have been observed in these laws like The Indian Fisheries Act 1897, Narcotic Drugs & Psychotropic Substances Act 1985, and Ozone Depleting Substance (Regulation and Control) Rules 2000 under this category. Food and beverages category, eleven laws are followed by almost 25% and above companies, where seven other various laws have neglected by companies with less than 25% of compliance rate. Printing and packaging compliance rate reach almost above 50% in seven various laws. Where on the other hand eight various laws have neglected as compliance rate is zero. Were other two laws that are Forest (Conservation) Act 1980, Air (Privation & Control of Pollution) Act 1981, has 20 and 40 percent of compliance respectively. Iron & steel category companies show ten various laws with 30% and above compliance rate. The Indian Port Act 1908 is also highly followed by this category of companies as compared to another sector of companies. Zero compliance rates also can be observed in these different laws The Indian Forest Act 1927, Wildlife (Protection) Act 1972, and National Environmental Appellate Authority Act 1997. Where other twelve laws have entirely neglected with less than 60% compliance rate and the Poison Act 1919 which is most applicable to this category it shows zero percentage of compliance.

This investigation provides clear gleams of substantial, significant variation in all of the ten sector/categories regarding preference towards the extent of compliance with various laws and acts. These evidence support in rejecting the tenth sub null-hypothesis. Hence we reject the tenth null-hypothesis and accept the alternative hypothesis of the study that says preference to compliance with various laws does vary between sector/categories of companies.

#### **4.2.5 DIFFERENCES IN VARIOUS GROUPS OF COMPANIES IN EXTENT OF FINE AND PENALTIES PAID TOWARDS ENVIRONMENTAL COMPLIANCE VIOLATION.**

To investigate the differences in various groups of companies and extent of fine and penalties paid towards environmental compliance violation third set of five sub-hypothesis has been framed that starts from 11<sup>th</sup> to the 15<sup>th</sup> hypothesis, based on the five different groups of companies.

#### 4.2.5.1 To Evaluate Differences in Indian and Foreign Companies in the Extent of Fines and Penalties Paid Towards Environmental Compliance Violation.

The investigation reveals that there is a significant difference that could witness as per table no: 44, were 9.88% of Indian companies have agreed that they have paid fines and penalties towards failure in compliance with environmental laws. Not even single foreign companies agree that they have failed in compliance with environmental laws. This evidences of significant variation support in rejecting eleventh sub null-hypothesis. Hence, we reject the null hypothesis of the study and accept the alternative hypothesis that says fine and penalties paid towards environmental matters does vary between Indian and foreign companies.

**Table No: 44**

<b>Indian and Foreign Companies Failed in Compliance with Environmental Laws</b>						
Group-Based on Nationality	Fines and Penalties Paid		Not Paid any Fines and Penalties		Number of Companies	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Indian	8	9.88	73	90.12	81	100
Foreign	0	0	22	100	22	100
Total	8	7.77	95	92.23	103	100

Source: Primary Data.

#### 4.2.5.2 To Evaluate Differences in Public and Private Companies in the Extent of Fines and Penalties Paid Towards Environmental Compliance Violation.

**Table No: 45**

<b>Public and Private Companies Failed in Compliance of Environmental Laws</b>						
Group-Based on Ownership	Fines and Penalties Paid		Not Paid any Fines and Penalties		Number of Companies	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Public	2	4.35	44	95.65	46	100
Private	6	10.53	51	89.47	57	100
Total	8	7.77	95	92.23	103	100

Source: Primary Data.

The investigation reveals that there is a significant difference that can witness as per table no:45, were 10.53% of private companies have agreed that they have paid fines and penalties towards failure in compliance with environmental laws. From public companies, just 4.35% agree that they have failed in compliance with environmental laws. This evidences of significant variation support in rejecting twelve, sub null-hypothesis. Hence, we reject the null hypothesis of the study and accept the alternative hypothesis that says fine and penalties paid towards environmental matters does vary between public and private companies.

**4.2.5.3 To Evaluate Differences in Large and Medium Companies in the Extent of Fines and Penalties Paid Towards Environmental Compliance Violation.**

**Table No: 46**

<b>Large and Medium Companies Failed in Compliance with Environmental Laws</b>						
Group- Based on Size	Fines and Penalties Paid		Not Paid any Fines and Penalties		Number of Companies	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Large	5	8.20	56	91.80	61	100
Medium	3	7.14	39	92.86	42	100
Total	8	7.77	95	92.23	103	100

Source: Primary Data.

The investigation reveals that there is a no significant differences that can witness as per table no: 46, were 8.20% of large companies have agreed that they have paid fines and penalties towards failure in compliance with environmental laws. Similarly, 7.14% medium companies agree that they have failed in compliance with environmental laws. These evidence of no significant variation between large and medium companies, support that we have failed to reject thirteenth sub null-hypothesis. Hence we accept the null hypothesis that says fine and penalties paid towards environmental matters does not vary between large and medium companies.

**4.2.5.4 To Evaluate Differences Between Implementing and Non-Implementing Environmental Accounting Companies in the Extent of Fines and Penalties Paid Towards Environmental Compliance Violation.**

The investigation reveals that there is a significant difference that could be observed as per table no: 47 where 17.95% of not implementing environmental accounting companies have agreed that they have paid fines and penalties towards failure in compliance with environmental laws. Whereas only a few or (1.56%) implementing, environmental accounting companies agree that they have failed in compliance with environmental laws. This evidence of significant variation supports in rejecting the fourteenth sub null-hypothesis. Hence we reject the null hypothesis of the study and accept the alternative hypothesis that says fine and penalties paid towards environmental matters does vary between companies implementing and non-implementing environmental accounting.

**Table No: 47**

<b>Implementing/Not Implementing (EA) Companies Failed in Compliance with Environmental Laws</b>						
Group-Based on Adoption of Environmental Accounting	Fines and Penalties Paid		Not Paid any Fines and Penalties		Number of Companies	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Implementing Environmental Accounting	1	1.56	63	98.44	64	100
Not Implementing Environmental Accounting	7	17.95	32	82.05	39	100
Total	8	7.77	95	92.23	103	100

Source: Primary Data.

#### **4.2.5.5 To Evaluate Differences in Sector/Categories of Companies in the Extent of Fines and Penalties Paid Towards Environmental Compliance Violation.**

The investigation shows a result that there is significant variation between sector/categories of companies in the extent of fines and penalties paid towards environmental compliance violation as per table no: 48. As pharmaceutical, electrical, electronic, engineering, food & beverage, printing and packaging, textile all companies falling under this sector have not paid any fines and penalties for violation of environmental laws. Chemical and plastic categories have paid fines and penalties 6.67 & 14.29 % of companies respectively, iron and steel category in which one of the highest numbers of companies have paid fines and penalties that is 31.58% percentage.



**Table No: 48**

<b>Sector-wise Classification of Companies Failed in Compliance with Environmental Laws</b>						
Group-Based on Sector/Categories	Fines and Penalties Paid		Not Paid any Fines and Penalties		Number of Companies	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pharmaceutical	-	-	10	100	10	100
Electrical	-	-	4	100	4	100
Electronic	-	-	11	100	11	100
Chemical	1	6.67	14	9.33	15	100
Plastic	1	14.29	6	85.71	7	100
Engineering	-	-	18	100	18	100
Food & Beverage	-	-	11	100	11	100
Printing & Packaging	-	-	5	100	5	100
Iron & Steel	6	31.58	13	68.42	19	100
Textile	-	-	3	100	3	100
Total	8	7.77	95	92.23	103	100

Source: Primary Data.

This highlight there is variation between sectors of companies, even though individual sector there is not much of variation. However, variation can witness in three different clusters were one cluster shows no fines and penalties paid, the second cluster shows the lesser number of companies paid fines and penalties. The third cluster shows the high number of companies paid fines and penalties, this significant evidence of variation support in rejecting fifteenth sub null-hypothesis. Hence we reject the null hypothesis of the study and accept the alternative hypothesis that says fine and penalties paid towards environmental matters does vary between sector/categories of companies.

#### **4.2.6 SUMMARY OF INTERPRETATION**

The analysis of overall fifteen sub null-hypotheses of the study which is framed based on three major compliances factor those are compliance towards ISO certification, compliance towards various selected laws, fines, and penalties paid by companies for non-compliances. These each factor is tested based on five different groups of companies. Hence each factor of compliances comprises of five null hypotheses for testing. The result of Investigation shows that out of five sub null-hypotheses selected for testing compliance towards ISO certification four null hypotheses have rejected and accepted alternative hypothesis saying that preference to ISO certification does vary between selected groups of companies, those groups based on ownership, size, adoption of environmental

accounting, and sector/categories. Where in one group that based on nationality we failed to reject the sub-null hypothesis, based on this above evidences we accepted sub null hypothesis saying that preference to ISO certification does not vary between this particular groups of companies.

Similarly, investigation reviles that out of five sub null-hypothesis have selected for testing compliance with various selected laws. All five sub null-hypothesis has rejected, and the alternative hypothesis has accepted of the study that says preference to ISO certification does vary between selected groups of companies. Also, investigation reviles that out of five sub null-hypothesis had chosen for testing fines and penalties paid by companies for non-compliances. The four sub null-hypothesis has rejected, and the alternative hypothesis is accepted that says preference to ISO certification does vary between selected groups of companies; those groups based on nationality, ownership, adoption of environmental accounting, and sector or categories. Where in one group that based on the size of companies we failed to reject the sub null-hypothesis, based on this above evidences we accepted sub null- hypothesis saying that preference to ISO certification does not vary between this particular groups of companies.

For the study, fifteen sub null-hypothesis being framed, out of those thirteen sub null-hypotheses has got rejected. Where two sub null-hypothesis we failed to reject and accepted the sub null-hypothesis. This evidence provides significant support in rejecting the major null-hypothesis and accepting the alternative hypothesis. Hence we reject the null- hypothesis and accept the major alternative hypothesis that says there is a significant difference in the extent of legal compliance of business firm on environmental accounting and disclosure practices.

#### **4.2.7 INFERENCE**

Analysis and finding suggest that attitude or preference does vary in the extent of legal compliance of business firm towards environmental accounting and disclosure practices between different groups of companies in Goa. As finding put forward that factor like ISO certification that is influenced by some of the groups like the public, large, companies implementing environmental accounting, pharmaceutical, electrical, electronic, chemical,

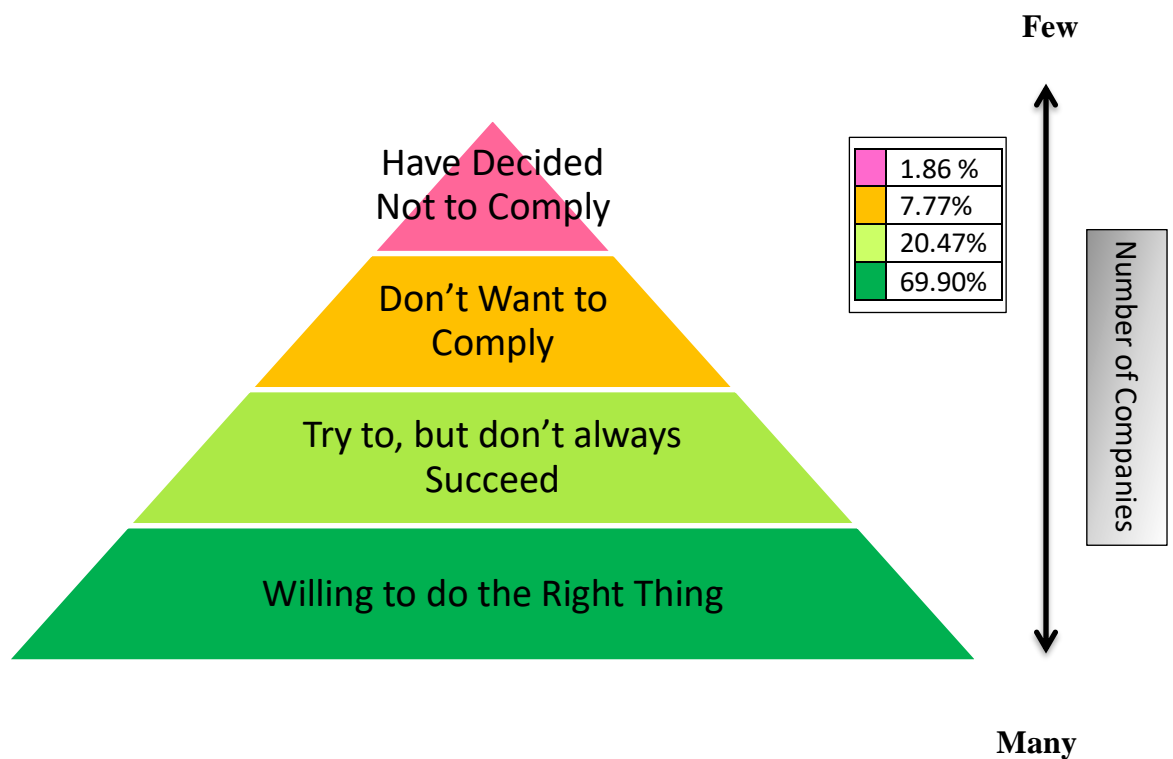
plastic, engineering, food & beverage sector/categories are some group of companies doing well in the extent of compliance. Also factor like adopting the various laws and acts governing their company which is influenced by almost all five groups selected where groups like foreign, public, large, implementing environmental accounting, pharmaceutical, food & beverage, iron and steel sector/categories are some group of companies doing well in the extent of compliance. Also factor like have to pay any fine or penalty with regards to the environment that are influenced by some of the groups. Like foreign, public, implementing environmental accounting, pharmaceutical, electrical, electronic, engineering, food & beverage, printing & packaging, and textile sector/categories are some groups of companies doing well in the extent of compliance. These suggest that attitude or preference in the extent of legal compliance of business firm towards environmental accounting and disclosure practices significantly vary between different groups of companies in Goa. The analysis also highlights the present situation of companies in Goa towards the extent of legal compliances. As even though there are significant differences which can observe regarding the extent of legal compliance between various groups of companies. Whereas approach of most of the companies towards legal compliance seems to be willing to do the right thing, try to but don't always succeed are falling into this category of ATO model. Where very few companies which are falling into other two categories of ATO model that are don't want to comply, have decided not to comply.

Even though there are few companies with such type of attitude or preferences as categories in ATO model that is don't want to comply, have decided not to comply. Such kind of attitude and preference should completely-eliminate through applying similar compliances strategies as provide in ATO model by the various regulatory authorities of legal compliances. As each attitude and preference has to be handled separately like companies which are willing to do the right thing towards legal compliance the producers and another process towards fulfilling legal compliances should be made more clear and easy to worked out. Similarly, companies which are trying hard to comply but they do not always get success in doing it, for such companies, regulatory authorities should frame and help desk where all their queries would solve with quickness and perfection. Companies which don't want to comply with such type of companies regulatory authorities should discourage through leaving hefty tax penalties, Fines. Similarly, companies which have attitude or preferences where they have decided they will not comply in any case

regulatory authorities should make use of full force of laws to see that such type of companies gets such a setback from they will never recover back. The outcome of such set-back should create fear in the minds of other companies which have similar attitude or preference towards legal compliance.

**Chart No: 5**

**Present Approach of Companies in Goa towards Extent of Legal Compliances regarding Environmental Accounting and Disclosure Practices.**



Source: Developed.

## **4.3 MEASURES ADOPTED BY INDUSTRIES TO PREVENT ENVIRONMENT FROM HARMFUL CAUSES.**

To analysis, the measures adopted by industries to prevent from harmful causes to the environment of Goa, Corporate Sustainability Initiatives (CSIs) were defined with the help of working paper no: 428 of P D Jose and Saurabh Saraf on corporate sustainability initiatives reporting that say CSIs include.

- Any voluntary action was taken by the corporate to ensure the reduced impact of their operations activities on the environment or society beyond legal compliance.
- Those initiatives that are implanted in the core or mainstream business or are carried out by an extended arm of the corporate.
- All initiatives that portray that the corporate in general is concerned about the social and environmental aspects along with the economic aspects clear in its strategic behavior or planning.

### **4.3.1 CORPORATE SUSTAINABILITY INITIATIVES (CSIs)**

The Corporate Sustainability Initiatives (CSIs) implemented by the selected companies have reported in three diverse section - Organisation and Management, Operations and Core Business Practices, and Corporate Environmental Responsibility (CER)

#### **4.3.1.1 Organisation & Management**

This section describes organizational structures within the company to execute the corporate sustainability initiatives and various ways to manage it like policies, codes of conducts, audits and certifications, communications and adherence to international/national voluntary sustainability principles

#### **4.3.1.2 Operations & Core Business Practices**

The evidence regarding greening and ethically advancing their operations and reducing their adverse environmental impacts have included in this section

### 4.3.1.3 Corporate Environmental Responsibility

Initiatives to improve the lives of the individuals in the surrounding communities and society at large have emphasized in this section. These initiatives are not directly impacting core business practices of a corporate. That can be a part of public relations or Corporate Environmental Responsibility (CER) commitment.

Based on the conceptual framework of CSI a list of different parameters had prepared, covering nearly all the aspects of social, economic, and environmental responsibility initiatives that an organization could undertake to prevent from harmful causes to the environment of Goa.

**Table No: 49**

<b>Section-Wise Classification of 14 Variables of the ( CSIs )</b>		
<b>CORPORATE SUSTAINABILITY INITIATIVES</b>		
<b>ORGANISATION &amp; MANAGEMENT</b>	<b>OPERATIONS &amp; CORE BUSINESS PRACTICES</b>	<b>CORPORATE ENVIRONMENTAL RESPONSIBILITY</b>
✓ Environmental Goal	✓ Stand Towards Climate Change	✓ Donation and Sponsorship
✓ Vision & Mission	✓ Waste Management	✓ Environmental Friendly Machineries Installed
✓ Audit	✓ Research and Development	✓ Participation in Social activities
✓ Training to Employees	✓ Health and Safety	✓ CSR Committee
✓ Awards	✓ Steps towards Ecological Conservation <ul style="list-style-type: none"> <li>• Recycling Activities</li> <li>• Tree Plantation</li> <li>• Cleaning Drives</li> <li>• Encourages Employees to Participate in social Activist</li> </ul>	

Source: Primary Data.

On above parameters and conceptual framework of Corporate Sustainability Initiatives (CSIs) hypothesis of the study has been framed

### **4.3.2 HYPOTHESIS**

3. **H<sub>0</sub>**: There are no positive measures taken by industries to prevent environment from harmful causes.

### **4.3.3 ORGANISATION & MANAGEMENT**

#### **4.3.3.1 Environmental Goal**

Almost 71.84% of companies have set the environmental goal out off, number of selected companies that can witness from table no: 50. That highlight most of the companies have set a goal towards environmental conservation that might achieve in the short term or long term basis as per company's conveniences. Group based on nationality significant differences have observed regarding preferences towards the setting of environmental goal between Indian and foreign companies, as 95.45% of foreign companies have set a goal to be achieved in the near-future. Almost 30% differences have observed between Indian and foreign companies. Similarly, Chi-square test also highlights the same as P-value has come to 0.005 that is less than 95% confidences level value of 0.05 ( $0.005 < 0.05$ ). That says there are significant differences in preferences towards adopting environmental goal between Indian and foreign companies.

Similarly, a group based on ownership were significant differences could be observed in the setting of environmental goals as almost 35% of the variation could be seen between public and private companies. Where public companies were seen dominating as 91.30% of them has set a goal towards environmental protection. Equivalent result has seen in Chi-square test as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 ( $0.000 < 0.05$ ). This highlight there is significant differences in preferences towards setting environmental goal between public and private companies.

Similarly, a group based on size were significant differences could be observed in the setting of environmental goals as almost 33% of the variation could be seen between large and medium Companies. Where large companies were found dominating as 85.25% of them has set a goal towards environmental conservation. Were Chi-square test also support the statement as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 ( $0.000 < 0.05$ ), this support that there are significant differences in preferences towards setting environmental goal between large and medium companies.

**Table No: 50**

<b>Companies Preferences Towards Environmental Goal</b>										
Group-Based On		Environmental Goal		No Environmental Goal		Number of Companies		Pearson Chi-Square Test		Result
								Value ( $X^2$ )	Significant (P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	53	65.43	28	34.57	81	100	7.709	0.005	Significant Differences in preference as ( P < 0.05 )
	Foreign	21	95.45	1	4.55	22	100			
	Total	74	71.84	29	28.16	103	100			
Ownership	Public	42	91.3	4	8.7	46	100	15.561	0.000	Significant Differences in preference as ( P < 0.05 )
	Private	32	56.14	25	43.86	57	100			
	Total	74	71.84	29	28.16	103	100			
Size	Large	52	85.25	9	14.75	61	100	13.282	0.000	Significant Differences in preference as ( P < 0.05 )
	Medium	22	52.38	20	47.62	42	100			
	Total	74	71.84	29	28.16	103	100			

Source: Primary Data. (At 95% Confidences Level)



### 4.3.3.2 Vision & Mission

**Table No: 51**

Companies Preferences Towards Vision & Mission										
Group Based On		Vision & Mission		No Vision & Mission		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant (P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	37	45.68	44	54.32	81	100	9.080	0.003	Significant Differences in preference as ( P < 0.05 )
	Foreign	18	81.82	4	18.18	22	100			
	Total	55	53.4	48	46.6	103	100			
Ownership	Public	31	67.39	15	32.61	46	100	6.541	0.011	Significant Differences in Preference as ( P < 0.05 )
	Private	24	42.11	33	57.89	57	100			
	Total	55	53.4	48	46.6	103	100			
Size	Large	36	59.02	25	40.98	61	100	1.898	0.168	No Significant Differences in Preference as ( P > 0.05 )
	Medium	19	45.24	23	54.76	42	100			
	Total	55	53.4	48	46.6	103	100			

Source: Primary Data. (At 95% Confidences Level)

Almost 53.0% of companies set vision and mission statement towards environmental conservation which can observe through table no: 51. That show half of the companies have firm vision and mission which they will carry out in near future that will lead in building sustainable development. Group-based on nationality were significant differences could be observed between Indian and foreign companies as almost 36% of the variation could be seen between them. Foreign companies were seen to be dominating as 81.82% of them adopted vision and mission statement into their business activities. Similarly, Chi-square test shows the result as P-value has come to 0.003 that is less than 95% confidences

level value of 0.05 ( $0.003 < 0.05$ ). That says there is a significant difference in adoption of vision and mission statements between Indian and foreign companies.

Likewise, a group based on ownership show significant differences between public and private as 25.28% variation have observed in them. Public companies were dominating as compared to the private with 67.39% in the adoption of vision and mission statement. Chi-square test also shows the similar result as P-value has come to 0.011 that is less than 95% confidences level value of 0.05 ( $0.011 < 0.05$ ). These say that there is a significant difference between public and private companies in the adoption of vision and mission statement.

Whereas group based on size. The analysis shows that there is no significant difference between large and medium companies in the adoption of vision and mission, as such because there is hardly some 13.78% of the variation have observed between them regarding adoption of vision and mission. Similarly, Chi-square test shows the result where P-value has come to 0.168 that is more than 95% confidence level value of 0.05 ( $0.168 > 0.05$ ). These firmly support that there is no significant difference in preference towards vision and mission statement adoption between large and medium companies.

#### **4.3.3.3 Audit**

The environmental audit has been carried out by 66.02% of companies out off, a total number of selected companies which can witness in table no: 52. That highlight most of the companies are doing an annual environmental audit. Group based on nationality shows significant differences regarding preferences towards carrying out environmental audit between Indian and foreign companies, as 86.36% of foreign companies say that they do carry out the environmental audit. Almost 25% differences have observed between Indian and foreign companies. Similarly, Chi-square test also highlights the same as P-value has come to 0.023 that is less than 95% confidences level value of 0.05 ( $0.023 < 0.05$ ). These say that there is a significant difference in preferences towards carrying out environmental audit between Indian and foreign companies.

Similarly, a group based on ownership were significant differences could be observed in carrying out environmental audit as almost 41.76% of the enormous variation could be

seen between public and private companies. Where public companies were seen dominating as 89.13% of them are doing an environmental audit. Equivalent result has seen in Chi-square test as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 ( $0.000 < 0.05$ ). This highlight there is significant differences in preferences towards carrying out environmental audit between public and private companies.

**Table No: 52**

<b>Companies Preferences Towards Audit</b>										
Group-Based On		Audit Carried out		No Audit Carried out		Number of Companies		Pearson Chi-Square Test		Result
								Value ( $X^2$ )	Significant (P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	49	60.49	32	39.51	81	100	5.161	0.023	Significant Differences in preference as ( P < 0.05 )
	Foreign	19	86.36	3	13.64	22	100			
	Total	68	66.02	35	33.98	103	100			
Ownership	Public	41	89.13	5	10.87	46	100	19.790	0.000	Significant Differences in Preference as ( P < 0.05 )
	Private	27	47.37	30	52.63	57	100			
	Total	68	66.02	35	33.98	103	100			
Size	Large	52	85.25	9	14.75	61	100	24.650	0.000	Significant Differences in Preference as ( P < 0.05 )
	Medium	16	38.10	26	61.90	42	100			
	Total	68	66.02	35	33.98	103	100			

Source: Primary Data. (At 95% Confidences Level)

Similarly, a group based on size were significant differences could be observed in carrying out an environmental audit, as a massive variation of 47.15% has seen between large and medium companies. Where large companies were found dominating as 85.25% of them are carrying out environmental audit regularly. Were Chi-square test also support the

statement as P-value has come to 0.000 that is less than 95% confidence level value of 0.05 ( $0.000 < 0.05$ ). This supports that there is a significant difference in carrying out environmental audit between large and medium companies.

#### **4.3.3.4 Training to Employees**

Training to employees has been provided by 59.22% of companies out of selected companies which can witness as per table no: 53. That shows most companies do provide the training to employees concerning environmental conservation. Where a group based on nationality shows significant differences between Indian and foreign companies when it comes to providing training to employees concerning environmental protection as 28.73% variation has been observed between them. Foreign companies are one step ahead as compared to Indian companies as 81.82% of foreign companies provide training to their employees. Whereas hardly 53.09% of Indian companies provide training to their employees. A similar result could be seen in Chi-square test as well where P-value has come to 0.015 that is less than 95% confidence value of 0.05 ( $0.015 < 0.05$ ). These provide support to the statement that says there are significant differences between Indian and foreign companies regarding providing training to their employees concerning environmental protection and conservation.

Likewise, a group based on ownership shows significant differences between public and private as 42.26% of enormous variation has been observed between them. Public companies were dominating as compared to the private with 82.61% in providing training to employees concerning environmental matters. Chi-square test also shows the similar result as P-value has come to 0.000 that is less than 95% confidence level value of 0.05 ( $0.000 < 0.05$ ). That says there is a significant difference between public and private companies regarding providing training to their employees concerning environmental matters.

**Table No: 53**

<b>Companies Preferences Towards Training to Employees</b>										
Group-Based On		Training Provided		No special Training Provided		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	43	53.09	38	46.91	81	100	5.914	0.015	Significant Differences in preference as ( P < 0.05 )
	Foreign	18	81.82	4	18.18	22	100			
	Total	61	59.22	42	40.78	103	100			
Ownership	Public	38	82.61	8	17.39	46	100	18.824	0.000	Significant Differences in Preference as ( P < 0.05 )
	Private	23	40.35	34	59.65	57	100			
	Total	61	59.22	42	40.78	103	100			
Size	Large	43	70.49	18	29.51	61	100	7.866	0.005	Significant Differences in Preference as ( P < 0.05 )
	Medium	18	42.86	24	57.14	42	100			
	Total	61	59.22	42	40.78	103	100			

Source: Primary Data. (At 95% Confidences Level)

Similarly, a group based on size were significant differences could be observed in providing training to employees concerning to Environmental matters, a variation of 27.63% have seen between large and medium companies. Where large companies were found dominating as 70.49% of them are providing training to employees regularly. Were Chi-square test also support the statement as P-value has come to 0.005 that is less than 95% confidences level value of 0.05 (0.005 < 0.05). This support that there is a significant difference in training provided to employees concerning to environmental matters between large and medium companies.

#### 4.3.3.5 Environmental Awards

Environmental awards have been achieved by hardly 8.74% companies only which is most disappointing/list percentage of all the variable of organization & management. Where group based on nationality shows, there is no significant difference between Indian and foreign companies in getting environmental awards. Even though foreign companies are more dominant as compare to Indian companies, but there is hardly any variation of 6.23% have observed. Similarly, Chi-square test also shows the similar result as P-value has come to 0.359 that is more than 95% confidences level value of 0.05 ( $0.359 > 0.05$ ), this highlight that there are no significant differences between getting environmental awards between Indian and foreign companies.

**Table No: 54**

<b>Companies Achievements Towards Environmental Awards</b>										
Group-Based On		Awards Achieved		No Awards Achieved		Number of Companies		Pearson Chi-Square Test		Result
		F	%	F	%	F	%	Value ( $X^2$ )	Significant ( P – Value)	
Nationality	Indian	6	7.41	75	92.59	81	100	0.842	0.359	No Significant Differences in preference as ( P > 0.05 )
	Foreign	3	13.64	19	86.36	22	100			
	Total	9	8.74	94	91.26	103	100			
Ownership	Public	6	13.04	40	86.96	46	100	1.932	0.164	No Significant Differences in Preference as ( P > 0.05 )
	Private	3	5.26	54	94.74	57	100			
	Total	9	8.74	94	91.26	103	100			
Size	Large	7	11.48	54	88.52	61	100	1.406	0.236	No Significant Differences in Preference as ( P > 0.05 )
	Medium	2	4.76	40	95.24	42	100			
	Total	9	8.74	94	91.26	103	100			

Source: Primary Data. (At 95% Confidences Level)

Likewise, a group on ownership shows there is no significant difference between public and private companies as well in getting environmental awards. Even though public companies are more dominant as compare to private companies which can witness in table no: 54, but there is some slight variation of 7.78% that could observe. Similarly, Chi-square test also shows the similar result as P-value has come to 0.164 that is more than 95% confidences level value of 0.05 ( $0.164 > 0.05$ ). This highlight that there are no significant differences between getting environmental awards between public and private companies.

Similarly, a group based on size shows there is no significant difference between large and medium companies as well in receiving environmental awards. Even though large companies are more dominant as compare to medium companies, but there is some slight variation of 6.72% which could observe. Similarly, Chi-square test also shows the similar result as P-value has come to 0.236 that is more than 95% confidences level value of 0.05 ( $0.236 > 0.05$ ). This highlight that there is no significant difference between receiving environmental awards between large and medium companies.

#### **4.3.4 OPERATIONS & CORE BUSINESS PRACTICES**

##### **4.3.4.1 Stand towards Climate Change**

Stand towards climate change has been taken by only half (52.43%) of the selected companies that can observe through table no: 55. Where in the group based on nationality even though foreign companies are leading regarding taking a stand towards climate change were 68.18% of foreign companies took the stand as compared to the Indian companies only 48.15% of them took a stand. There is no significant differences have observed as per Chi-square test as P-value has come to 0.095 that is more than 95% confidences level value of 0.05 ( $0.095 > 0.05$ ). Which says there is no significant difference between Indian and foreign companies preferences when it comes to taking a stand towards climate change.

**Table No: 55**

<b>Companies Stand Towards Climate Change</b>										
Group-Based On		Stand Taken		No Stand Taken		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	39	48.15	42	51.85	81	100	2.784	0.095	No Significant Differences in preference as ( P > 0.05 )
	Foreign	15	68.18	7	31.82	22	100			
	Total	54	52.43	49	47.57	103	100			
Ownership	Public	31	67.39	15	32.61	46	100	7.463	0.006	Significant Differences in Preference as ( P < 0.05 )
	Private	23	40.35	34	59.65	57	100			
	Total	54	52.43	49	47.57	103	100			
Size	Large	34	55.74	27	44.26	61	100	0.657	0.417	No Significant Differences in Preference as ( P > 0.05 )
	Medium	20	47.62	22	52.38	42	100			
	Total	54	52.43	49	47.57	103	100			

Source: Primary Data. (At 95% Confidences Level)

Whereas group based on ownership. Show significant differences between public and private companies preferences when it comes to taking a stand towards climate change. Were public companies that took stand towards climate change are 67.37% of them. On the other side, only 40.35% of private companies took a stand. Almost 27% of the variation have observed between them. Similarly, chi-square test also shows the similar result as P-value has come to 0.006 that is less than 95% confidences level value of 0.05 (0.006 < 0.05). These say that there is a significant difference in the stand taken towards climate change between public and private companies.

In group based on the size of a company even though large companies are leading regarding taking a stand towards climate change were 55.74% of large companies took the



stand as compared to the medium companies only 47.62% of them took a stand. There is no significant differences have observed as per Chi-square test as P-value has come to 0.417 that is more than 95% confidences level value of 0.05 ( $0.417 > 0.05$ ). Which says there is no significant difference between large and medium companies' preferences when it comes to taking a stand towards climate change.

#### 4.3.4.2 Waste Management

**Table No: 56**

Sector-wise Classification of Companies Preferences towards Waste Management												
Group-Based On Sector/Categories	Waste Treatment Plant		Hand over to local Government		Hand over to private corporations for treatment		Dump in to open area		Any other process		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%
Pharmaceutical	6	60	2	20	4	40	–	–	4	40	10	100
Electrical	–	–	1	25	4	100	–	–	2	50	4	100
Electronic	4	36.36	2	18.18	7	63.64	–	–	2	18.18	11	100
Chemical	6	40	6	40	8	53.33	1	6.67	–	–	15	100
Plastic	4	57.14	2	28.57	4	57.14	–	–	1	14.29	7	100
Engineering	4	22.22	12	66.67	8	44.44	–	–	2	11.11	18	100
Food & Beverage	7	63.64	4	36.36	3	27.27	–	–	–	–	11	100
Printing & Packaging	4	80	2	40	2	40	–	–	–	–	5	100
Iron & Steel	6	31.58	8	42.11	5	26.32	–	–	2	10.53	19	100
Textile	1	33.33	1	33.33	2	66.67	–	–	–	–	3	100
Total	42	40.78	40	38.83	47	45.63	1	0.97	13	12.62	103	100

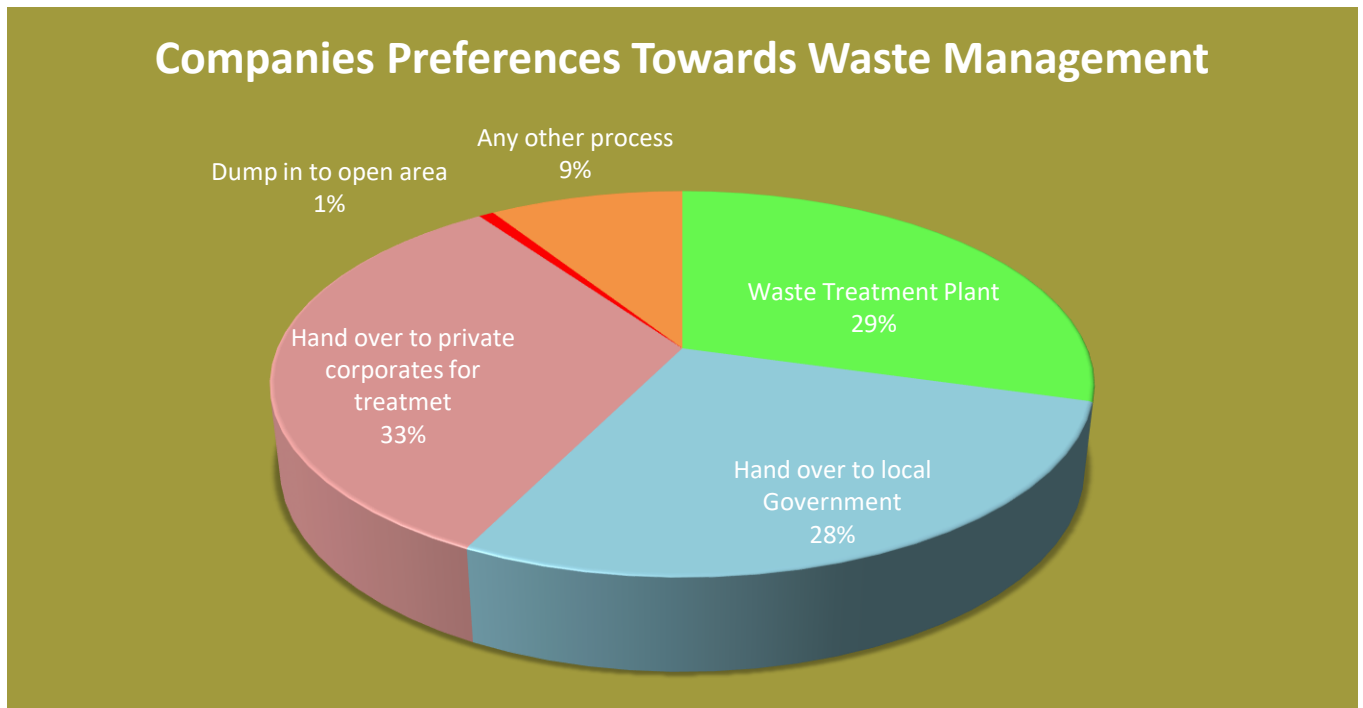
Source: Primary Data. (At 95% Confidences Level)

Waste management has bifurcated into five different sections on that analysis is carried out with references to groups based on categories / sector-wise, companies those have their private waste treatment plant. Those top five sectors are like printing & packaging, food and beverages, pharmaceutical, plastic, and electronic with their respective percentage (80,

63.64, 60, 57.14, and 36.36) that can be observed in table no: 56. Similarly, those top five sectors that are handling the waste to the government are engineering, iron & steel, food & beverage, textile, and plastic, with their respective percentage (66.67, 42.11, 36.36, 33.33, and 28.57). Similarly, top five sectors those hand over the waste to private corporations for treatment are electrical, textile, electronic, plastic, and chemical with their respective percentage (100, 66.67, 63.64, 57.14, and 53.33). In any other process, top five sectors are electrical, pharmaceutical, electronic, plastic, and engineering with their respective percentage (50, 40, 18.18, 14.29, and 11.11).

Waste management is one that has done by almost 99% of companies. With the help of their private waste treatment plant, 29% of selected companies treat their waste, similarly by handling the waste to the local government body 28% of companies treat their waste. Likewise, by hand over to Goa State, Pollution Control Board recognized private corporate entity 33% of the companies send their waste for treatment. By some of the other process, 9% of companies do their waste management, where only 1% of companies said that they dump their waste into open area or they do not treat their waste generated.

**Chart No: 6**  
**Companies Preferences towards Waste Management**



Source: Primary Data.

#### 4.3.4.3 Research and Development (R&D)

Research and development carried out by hardly 41.75% of companies that can be observed in table no: 57. Were group based on nationality shows significant differences regarding carrying out research and development between Indian and foreign companies. As foreign companies are more dominating as 72.73% of them, carry out R&D compare to Indian companies hardly 33.33% do that. Almost 39% of the variation have observed between them. A similar result has witnessed in Chi-square test as P-value of has come to 0.001 that is less than 95% confidences level value of 0.05 ( $0.001 < 0.05$ ). These say that there is a significant difference in preferences of carrying out research and development between Indian and foreign companies.

**Table No: 57**

<b>Companies Preferences Towards Research and Development (R&amp;D)</b>										
Group-Based On		R&D Carried out		No Special R&D Carried out		Number of Companies		Pearson Chi-Square Test		Result
								Value ( $X^2$ )	Significant (P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	27	33.33	54	66.67	81	100	11.040	0.001	Significant Differences in preference as ( $P < 0.05$ )
	Foreign	16	72.73	6	27.27	22	100			
	Total	43	41.75	60	58.25	103	100			
Ownership	Public	31	67.39	15	32.61	46	100	22.477	0.000	Significant Differences in Preference as ( $P < 0.05$ )
	Private	12	21.05	45	78.95	57	100			
	Total	43	41.75	60	58.25	103	100			
Size	Large	31	50.82	30	49.18	61	100	5.063	0.024	Significant Differences in Preference as ( $P < 0.05$ )
	Medium	12	28.57	30	71.43	42	100			
	Total	43	41.75	60	58.25	103	100			

Source: Primary Data. (At 95% Confidences Level)

Similarly, a group based on ownership were significant differences could be observed in carrying out R&D as massive 46.34% of the variation could be seen between public and private companies. Where public companies were seen dominating as 67.39% of them been caring out R&D, a similar result has seen in Chi-square test as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 ( $0.000 < 0.05$ ). This highlight there is significant differences in preferences towards carrying out Research and Development (R&D) between public and private companies.

**Table No: 58**

<b>Companies Preferences Towards Environmental Research and Development Cell (R&amp;D)</b>								
Group-Based On Sector/Categories	No Special (R&D)		Depends upon Govt. (R&D)		Have Special (R&D)		Number of Companies	
	F	%	F	%	F	%	F	%
Pharmaceutical	2	20	–	–	8	80	10	100
Electrical	4	100	–	–	–	–	4	100
Electronic	5	45.45	–	–	6	54.55	11	100
Chemical	7	46.67	–	–	8	53.33	15	100
Plastic	5	71.43	–	–	2	28.57	7	100
Engineering	9	50	1	5.56	8	44.44	18	100
Food & Beverage	5	45.45	–	–	6	54.55	11	100
Printing & Packaging	4	80	–	–	1	20	5	100
Iron & Steel	18	94.74	–	–	1	5.26	19	100
Textile	1	33.33	–	–	2	66.67	3	100
Total	60	58.25	1	0.97	42	40.78	103	100

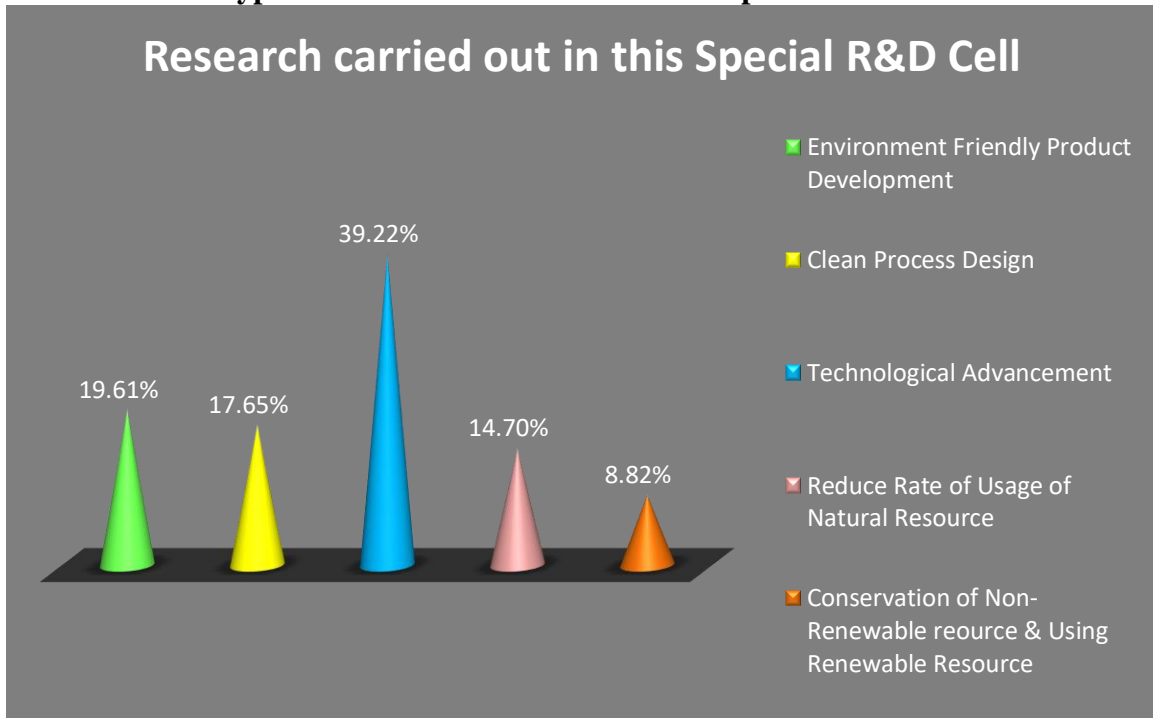
Source: Primary Data.

Similarly, a group based on size were significant differences could be observed in carrying out R&D as 13.18% of the variation could be seen between large and medium companies. Where large companies were seen dominating as 50.82% of them been caring out R&D, a similar result has seen in Chi-square test as P-value has come to 0.024 that is less than 95% confidences level value of 0.05 ( $0.024 < 0.05$ ). This highlight there is significant

differences in preferences towards carrying out Research and Development (R&D) between large and medium companies.

**Chart No: 7**

**Type of Research Carried out in this Special R&D Cell**



Source: Primary Data.

Companies' preference towards having their own environmental Research and Developmental cell is by only 40.78% of companies. Were top five sectors which have their own (R&D) are pharmaceutical, textile, electronics, food & beverage, and chemical with their respective percentages (80, 66.67, 54.55, 54.55, and 53.33). Similarly, top five sectors those do not have special R&D Cell are electrical, iron & steel, printing & packaging, plastic, and engineering with their respective percentages (100, 94.74, 80, 71.43, 50) that can notice through table no: 58.

#### **4.3.4.4 Health and Safety**

The table no: 59, provides details as pharmaceutical companies give utmost importance to the health & safety, firstly to the nearby community than to the customers, employee family member, and followed by worker and supplier. Were employers family member had given least importance as compare to others factors, where electrical companies gave

utmost importance in health and safety to all the factors right from workers to the nearby community. Electronic sector companies have given utmost importance related to health and safety to workers, then employee family member, employers family member, customer and then followed by supplier, nearby community. In chemical sector companies have given utmost importance in health and safety to workers, then employee family member, then followed by employers family member, a nearby community, then customer and least importance are given to the suppliers. A sector like plastic companies have given utmost importance to first workers than employers family member, then employee family member, then customers and suppliers with equal weight-age were least preferences are given to the nearby community.

**Table No: 59**

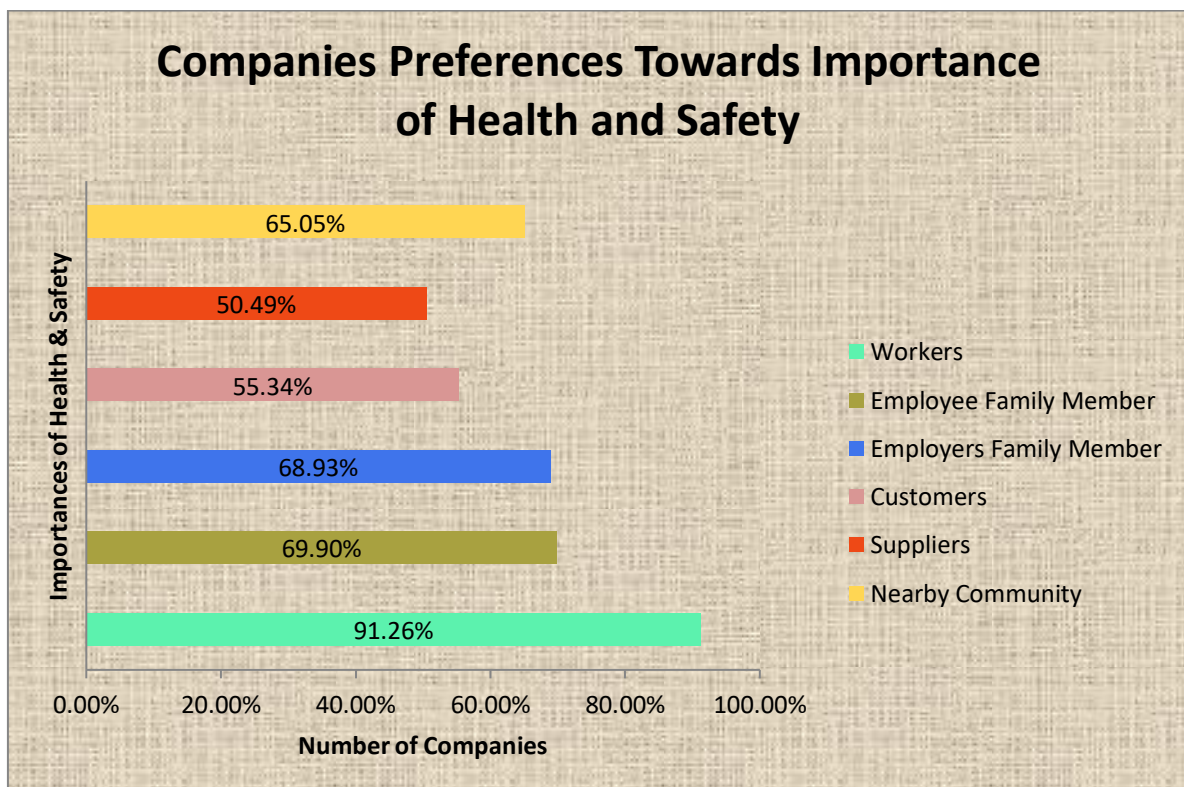
<b>Companies Preferences Towards Importance of Health and Safety</b>														
Group-Based On Sector/Categories	Workers		Employee Family Member		Employers Family Member		Customers		Suppliers		Nearby Community		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Pharmaceutical	7	70	8	80	4	40	8	80	7	70	9	90	10	100
Electrical	4	100	4	100	4	100	4	100	4	100	4	100	4	100
Electronic	11	100	9	81.82	9	81.82	9	81.82	8	72.73	8	72.73	11	100
Chemical	14	93.33	12	80	11	73.33	6	40	5	33.33	11	73.33	15	100
Plastic	7	100	4	57.14	5	71.43	3	42.86	3	42.86	2	28.57	7	100
Engineering	14	77.78	6	33.33	10	55.56	7	38.89	6	33.33	9	50	18	100
Food & Beverage	11	100	9	81.82	9	81.82	9	81.82	8	72.73	9	81.82	11	100
Printing & Packaging	5	100	4	80	4	80	3	60	3	60	5	100	5	100
Iron & Steel	18	94.74	15	78.95	14	73.68	7	36.84	7	36.84	9	47.37	19	100
Textile	3	100	1	33.33	1	33.33	1	33.33	1	33.33	1	33.33	3	100
<b>Total</b>	<b>94</b>	<b>91.26</b>	<b>72</b>	<b>69.90</b>	<b>71</b>	<b>68.93</b>	<b>57</b>	<b>55.34</b>	<b>52</b>	<b>50.49</b>	<b>67</b>	<b>65.05</b>	<b>103</b>	<b>100</b>

Source: Primary Data.

In engineering utmost importance is given to first workers than employers' family member, then nearby community, then followed by the customer where the least importance has given to the employee family member and suppliers. In food and beverages utmost importance is given to the workers, and then equivalent weight-age is given to employee family member, employers family member, customers, and nearby community were the least importance have given to the suppliers. In printing and packaging, utmost importance has given to the workers and nearby community where similar weight-age has given to employers' family member, employee family member where the least importance has given to customers, suppliers. In iron and steel sector has given first preferences regarding health and safety to workers than employers family member, employee family member, then followed by nearby community, where least importance has given to the customers, suppliers. In textile sector companies has given utmost importance in health and safety to the workers and for others, equivalent weight-age has given.

**Chart No: 8**

**Companies Preferences towards Importance of Health and Safety**



Source: Primary Data.

### 4.3.4.5 Steps towards Ecological Conservation

#### 4.3.4.5.1 Recycling Activities

Metallic/paper waste major output waste that has to send for the recycling by 44.09% of companies which can witness in table no: 60. Then followed by the E-waste that is sent for recycling by 43.01% companies, then thirdly plastic waste is sent by 41.94% of companies for recycling. Fourth major recycling activities that taken care by 37.63% of companies are other waste, were most of the companies have mentioned in other waste that they have their private water treatment plant in which the used water has been recycled and then again reused for proposes like gardening and toilet water. After that equivalent, weight-age has given to both wet waste, and glass bottles waste in which 17.2% of companies say that they send this waste to a registered dealer of each category for recycling.

**Table No: 60**

<b>Sector-wise Classification of Companies initiatives taken to support Recycling Activities</b>							
Group-Based On Sector/Categories	Plastic	Wet Waste	Medical Waste	Metallic / Paper	E-Waste	Glass Bottles	Other
	%	%	%	%	%	%	%
Pharmaceutical	80	30	30	50	50	40	30
Electrical	50	–	–	–	50	–	50
Electronic	90	20	–	40	80	20	30
Chemical	46.15	15.38	–	38.46	53.85	23.08	30.77
Plastic	85.71	0	–	57.14	42.86	14.29	28.57
Engineering	12.5	6.25	–	37.5	31.25	12.5	62.5
Food & Beverage	18.18	36.36	–	18.18	45.45	36.36	54.55
Printing & Packaging	40	–	–	80	20	–	20
Iron & Steel	6.67	26.67	–	66.67	20	–	20
Textile	50	–	–	50	50	–	50
<b>Total</b>	<b>41.94</b>	<b>17.2</b>	<b>3.23</b>	<b>44.09</b>	<b>43.01</b>	<b>17.2</b>	<b>37.63</b>

Source: Primary Data.



Almost 85.71% of plastic sector companies majorly recycles plastic waste. Wet waste majorly recycled by 36.36% of food & beverages sector companies. Medical waste has solely recycled by 30% of pharmaceutical sector companies. Metallic/ paper waste has been recycled by iron & steel and printing & packaging Sector by 66.67 and 80 % respectively. E-waste is being recycled majorly by 80% of electronic sector companies. Glass bottles are majorly recycled by 40 and 36.36 % of pharmaceutical and food & beverages sectors of companies respectively.

#### 4.3.4.5.2 Tree Plantation

**Table No: 61**

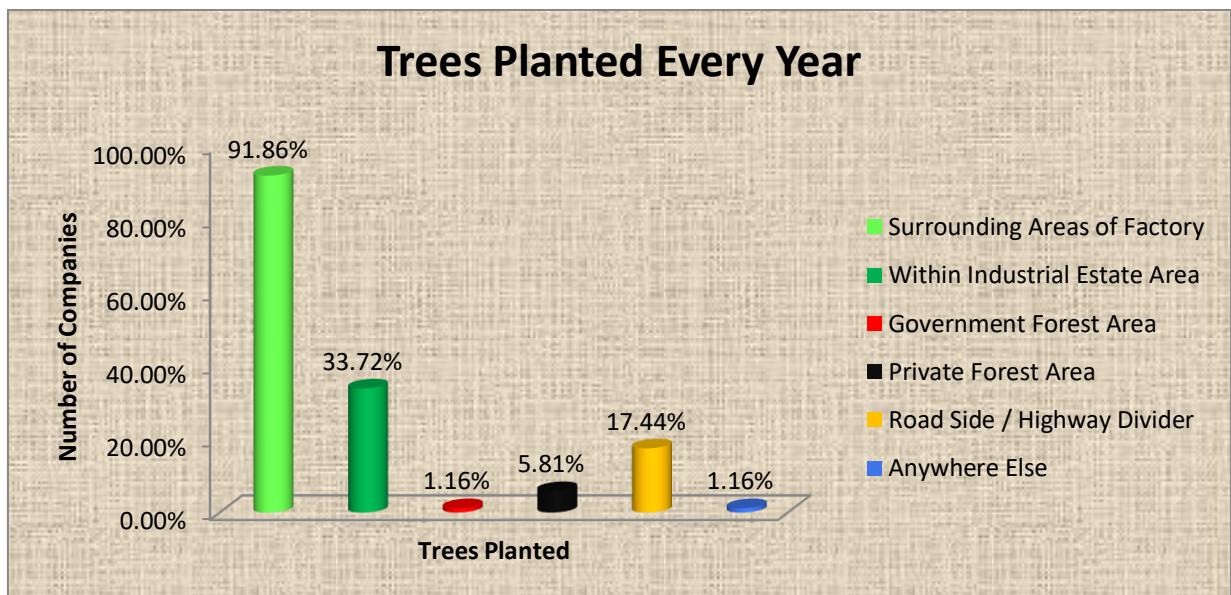
Sector-wise Classification of Companies initiatives Towards Tree Plantation												
Group-Based on Sector / Categories	Number of Trees Planted Every Year											
	None		less than 100		100 - 500		500 - 1000		More than 1000		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%
Pharmaceutical	–	–	4	40	5	50	1	10	–	–	10	100
Electrical	1	25	3	75	–	–	–	–	–	–	4	100
Electronic	1	9.09	9	81.82	1	9.09	–	–	–	–	11	100
Chemical	2	13.33	8	53.33	4	26.67	1	6.67	–	–	15	100
Plastic	4	57.14	2	28.57	–	–	1	14.29	–	–	7	100
Engineering	3	16.67	13	72.22	2	11.11	–	–	–	–	18	100
Food & Beverage	–	–	6	54.55	2	18.18	1	9.09	2	18.18	11	100
Printing & Packaging	–	–	5	100	–	–	–	–	–	–	5	100
Iron & Steel	6	31.58	11	57.89	1	5.26	–	–	1	5.26	19	100
Textile	–	–	3	100	–	–	–	–	–	–	3	100
Total	17	16.5	64	62.14	15	14.56	4	3.88	3	2.92	103	100

Source: Primary Data.

The 16.50% of companies have not done tree plantation, were plastic sector companies almost 57.14% of them are not planting any trees that can observe in table no: 61. Companies are planting trees less than 100 a year found to be 62.14% this shows most of

the companies take some initiative to plant some trees every year. Were sectors like textile, printing & packaging, electronic, electrical, engineering, iron & steel are leading in this section of planting trees less than 100. Companies planting trees in a range of 100 to 500 per years are found to be 14.56% of them, where a chemical sector of companies found to be a significant player in this section. Companies planting trees in a range of 500 to 1000 found to be 3.82% of them, where a plastic sector of companies is leading in this section. Companies planting more than 1000 trees per year were found to be hardly 2.92% of them. Where food & beverages & iron & steel sector companies only were found planting trees more than 1000, were food & beverages sector found leading as almost 18.18% of companies' plant.

**Chart No: 9**  
**Locations of Trees Planted Every Year**



Source: Primary Data.

#### 4.3.4.5.3 Cleaning Drives

Cleaning drives not carried out at all by 14.56% of companies that can observe through table no: 62. Where plastic sector companies are major with 28.57% of them, those do not carry out any cleaning drives. Cleaning drives carried out on monthly bases by 12.62% of companies. Where electronic sector is leading as 36.36% of companies, carry out monthly cleaning drives. Cleaning drives carried out on quarterly bases by 23.33% of companies were food & beverages Sector are dominant in this section as 63.64% of companies follow this. Cleaning drives carried out on yearly bases by 42.72% that is highest among all other

section. Where dominant player of this section are electrical, pharmaceutical, chemical, and iron & steel with their respective percentage of companies (100, 60, 53.33, and 47.37) carrying out cleaning drives on yearly bases.

**Table No: 62**

<b>Sector-wise Classification of Companies initiatives Towards Keeping Surrounding Clean</b>												
Group-Based on Sector / Categories	No Cleaning drive Carried out		Cleaning Drive Carried out								Number of Companies	
			Monthly		Quarterly		Half Yearly		Yearly			
	F	%	F	%	F	%	F	%	F	%	F	%
Pharmaceutical	2	20	–	–	–	–	2	20	6	60	10	100
Electrical	–	–	–	–	–	–	–	–	4	100	4	100
Electronic	2	18.18	4	36.36	1	9.09	1	9.09	3	27.28	11	100
Chemical	1	6.67	1	6.67	2	13.33	3	20	8	53.33	15	100
Plastic	2	28.57	2	28.57	–	–	–	–	3	42.86	7	100
Engineering	3	16.67	1	5.56	8	44.44	2	11.11	4	22.22	18	100
Food & Beverage	2	18.18	–	–	7	63.64	–	–	2	18.18	11	100
Printing & Packaging	–	–	1	20	–	–	–	–	4	80	5	100
Iron & Steel	3	15.79	3	15.79	4	21.05	–	–	9	47.37	19	100
Textile	–	–	1	33.33	1	33.33	–	–	1	33.34	3	100
<b>Total</b>	<b>15</b>	<b>14.56</b>	<b>13</b>	<b>12.62</b>	<b>23</b>	<b>22.33</b>	<b>8</b>	<b>7.77</b>	<b>44</b>	<b>42.72</b>	<b>103</b>	<b>100</b>

Source: Primary Data.

#### **4.3.4.5.4 Encourages Employees to Participate in Social Activist**

Companies those encourage their employees to participate in cleaning drives those top three sectors are like printing & packaging, plastic, and textile with their respective percentage (80, 71.43, 66.67). Where companies those support and encourage their employees to participate in tree plantation this is from pharmaceutical, textile, and food & beverage, with their respective percentage (70, 66.67, and 54.55). Companies those encourage their employees to participate in the Social rally are from these sectors

electronic, pharmaceutical, and food & beverage with their respective percentage (63.64, 40, and 27.27) that can witness in table no: 63.

**Table No: 63**

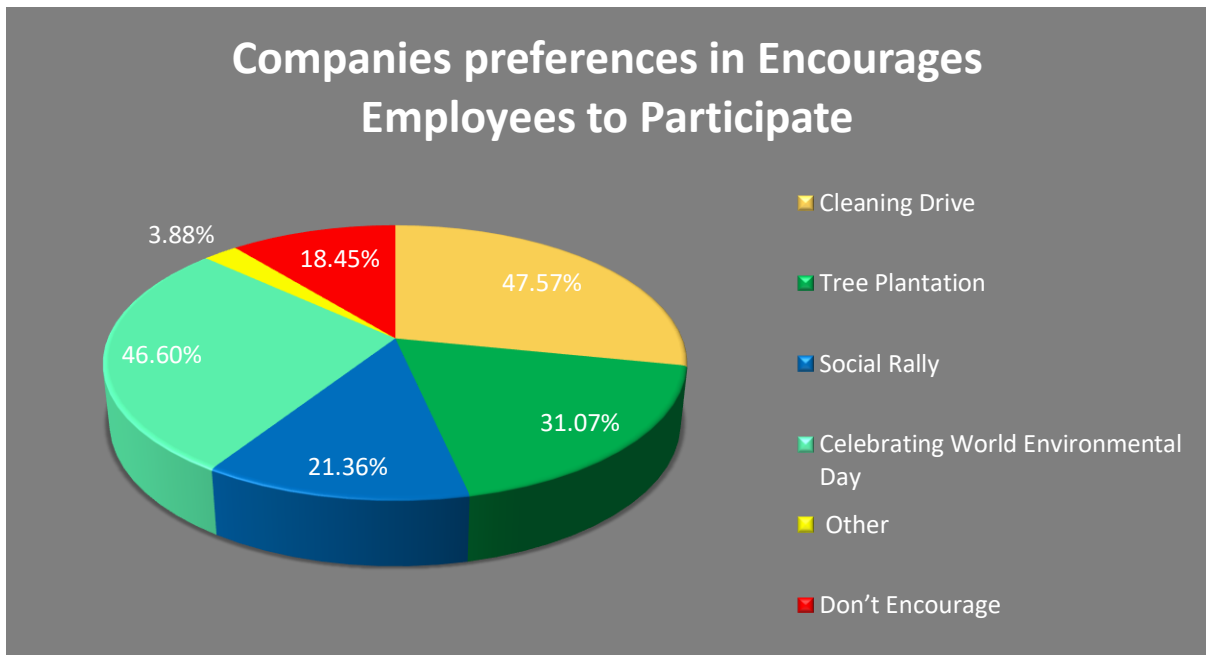
<b>Sector-wise Classification of Companies Encourages Employees to Participate in Social Activist</b>														
Group-Based on Sector / Categories	Cleaning drive		Tree Plantation		Social Rally		Celebrating World Environmental Day		Any Other		Not In Any		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Pharmaceutical	5	50	7	70	4	40	8	80	1	10	1	10	10	100
Electrical	2	50	–	–	–	–	4	100	–	–	–	–	4	100
Electronic	4	36.36	4	36.36	7	63.64	8	72.73	1	9.09	–	–	11	100
Chemical	6	40	3	20	–	–	5	33.33	–	–	6	40	15	100
Plastic	5	71.43	1	14.29	1	14.29	2	28.57	–	–	1	14.29	7	100
Engineering	6	33.33	2	11.11	5	27.78	5	27.78	2	11.11	7	38.89	18	100
Food & Beverage	7	63.64	6	54.55	3	27.27	7	63.64	–	–	–	–	11	100
Printing & Packaging	4	80	1	20	–	–	3	60	–	–	–	–	5	100
Iron & Steel	8	42.11	6	31.58	2	10.53	5	26.32	–	–	4	21.05	19	100
Textile	2	66.67	2	66.67	–	–	1	33.33	–	–	–	–	3	100
<b>Total</b>	<b>49</b>	<b>47.57</b>	<b>32</b>	<b>31.07</b>	<b>22</b>	<b>21.36</b>	<b>48</b>	<b>46.60</b>	<b>4</b>	<b>3.88</b>	<b>19</b>	<b>18.45</b>	<b>103</b>	<b>100</b>

Source: Primary Data.

Companies those encourage their employees to participate in celebrating world environmental day those top three sectors are electrical, pharmaceutical, and electronic with their respective percentage (100, 80, and 72.73). Similarly, companies which do not support & encourage their employees to participate in any social activities those top sectors are chemical, engineering, and iron & steel with their respective percentage (40, 38.89, and 21.05).

**Chart No: 10**

**Companies Preferences in Encourages Employees to Participate in Social Activist**



Source: Primary Data.

**4.3.5 CORPORATE ENVIRONMENTAL RESPONSIBILITY**

**4.3.5.1 Donation and Sponsorship**

The 42.72% of companies have provided donation and sponsorship out off, a total number of selected companies that can be observed through table no: 64. That highlight not most of the companies have provided sponsorship and donation related to environmental conservation and protection for NGO and another social activist. However, a group based on nationality shows significant differences that have observed regarding preferences towards providing donation and sponsorship between Indian and foreign companies, as 63.64% of foreign companies have provided sponsorship and donation in relation with environmental matters. Almost 26.60% differences have observed between Indian and foreign companies. Similarly, Chi-square test also highlights the same as P-value has come to 0.025 that is less than 95% confidences level value of 0.05 ( $0.025 < 0.05$ ). That says there are significant differences in preferences towards providing donation and sponsorship to NGO's towards environmental matters between Indian and foreign companies.

Similarly, a group based on ownership were significant differences could be observed in providing donation and sponsorship towards environmental matters as almost 36.72% of the variation could be seen between public and private companies. Where Public companies were seen dominating as 63.04% of them has been providing donation and sponsorship towards environmental matters. Equivalent result has seen in Chi-square test as P – value has come to 0.000 that is less than 95% confidences level value of 0.05 (0.000 < 0.05). This highlight there is significant differences in preferences towards providing donation and sponsorship towards environmental matters between public and private companies.

**Table No: 64**

<b>Companies Preferences Towards Donation and Sponsorship</b>										
Group-Based On		Gives Donation / Funds		No Such Activates are Supported		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	30	37.04	51	62.96	81	100	5.002	0.025	Significant Differences in preference as ( P < 0.05 )
	Foreign	14	63.64	8	36.36	22	100			
	Total	44	42.72	59	57.28	103	100			
Ownership	Public	29	63.04	17	36.96	46	100	14.033	0.000	Significant Differences in Preference as ( P < 0.05 )
	Private	15	26.32	42	73.68	57	100			
	Total	44	42.72	59	57.28	103	100			
Size	Large	31	50.82	30	49.18	61	100	4.012	0.045	Significant Differences in Preference as ( P < 0.05 )
	Medium	13	30.95	29	69.05	42	100			
	Total	44	42.72	59	57.28	103	100			

Source: Primary Data. (At 95% Confidences Level)

Similarly, a group based on size were significant differences could be observed in providing donation and sponsorship towards environmental matters as almost 19.87% of

the variation could be seen between large and medium companies. Where large companies were found dominating as 50.82% of them has providing donation and sponsorship towards environmental matters. Were Chi-square test also support the statement as P-value has come to 0.045 that is less than 95% confidences level value of 0.05 ( $0.045 < 0.05$ ), this support that there are significant differences in preferences towards providing donation and sponsorship with environmental matters between large and medium companies.

#### 4.3.5.2 Environmental Friendly Machinery Installed

**Table No: 65**

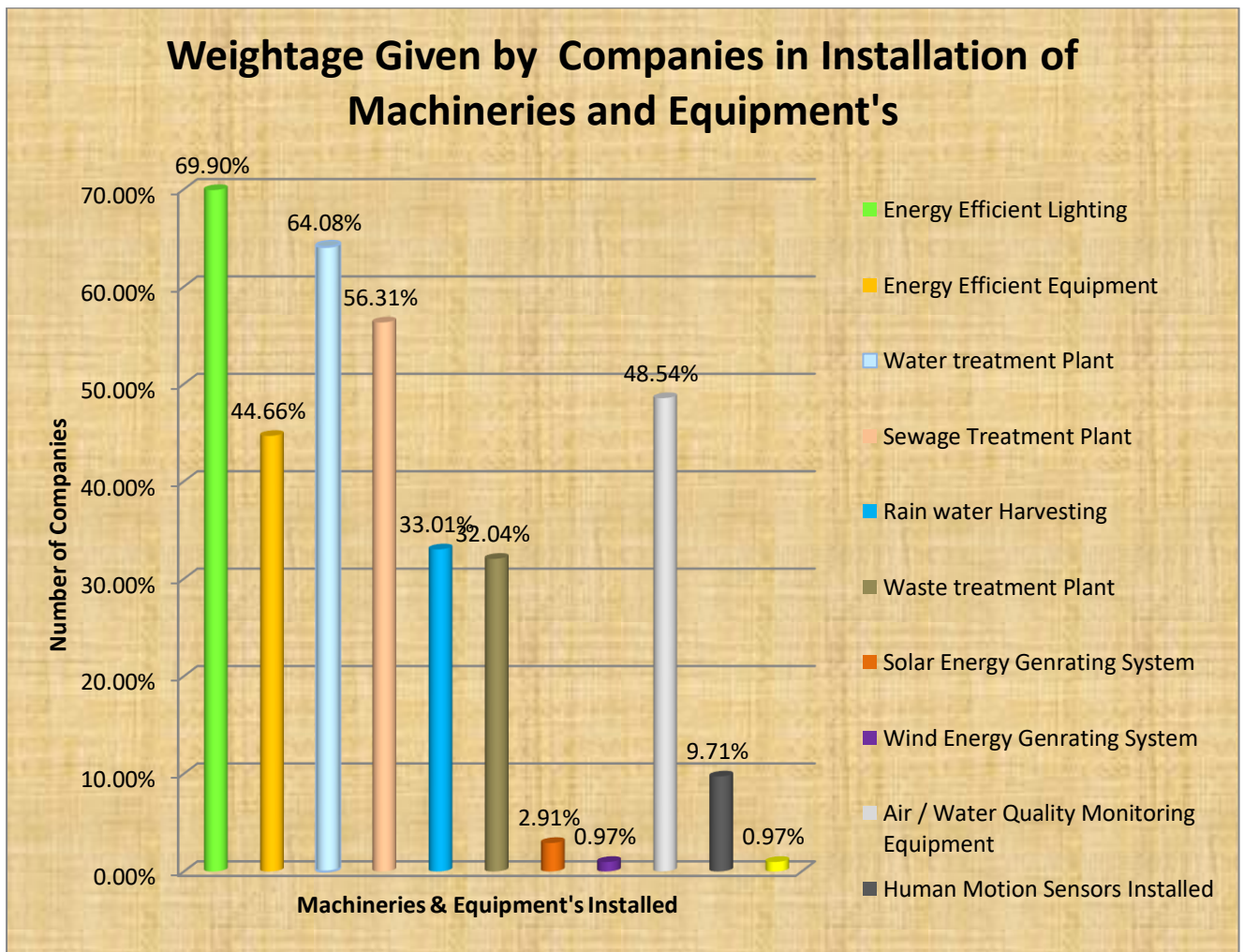
Sector-wise Classification of Machinery and Equipment's Installed by Companies											
Group-Based on Sector / Categories	Energy Efficient Lighting	Energy Efficient Equipment	Water Treatment Plant	Sewage Treatment Plant	Rainwater Harvesting	Waste Treatment Plant	Solar Energy Generating System	Wind Energy Generating System	Air / Water Quality Monitoring Equipment	Human Motion Sensors Installed	Other
	%	%	%	%	%	%	%	%	%	%	%
Pharmaceutical	80	80	100	80	50	70	0	0	50	30	0
Electrical	50	0	100	100	100	0	50	0	50	0	0
Electronic	100	63.64	54.55	81.82	54.55	18.18	0	0	72.73	18.18	0
Chemical	66.67	53.33	73.33	66.67	33.33	33.33	0	0	46.67	6.67	0
Plastic	85.71	28.57	57.14	42.86	0	14.29	0	0	28.57	0	0
Engineering	66.67	22.22	66.67	61.11	22.22	27.78	0	0	38.89	0	0
Food & Beverage	72.73	63.64	81.82	54.55	36.36	54.55	0	9.09	45.45	18.18	0
Printing & Packaging	80	40	80	40	20	40	0	0	20	0	0
Iron & Steel	42.11	36.84	31.58	21.05	21.05	21.05	0	0	57.89	5.26	5.26
Textile	100	33.33	0	33.33	33.33	33.33	33.33	0	66.67	33.33	0
Total	69.9	44.66	64.08	56.31	33.01	32.04	2.91	0.97	48.54	9.71	0.97

Source: Primary Data.

Energy efficient lighting installation has given first-priority by these top three sectors; those are electronic, textile, and plastic as a number off companies installed this machinery by (100, 100, and 85.71 %) respectively. For energy efficient equipment installation has given first-priority by these top three sectors pharmaceutical, electronic, food & beverage with their respective percentage (80, 63.64, and 63.64). Water treatment plant installation has given first-priority by these top three sectors pharmaceutical, electrical, food & beverage with their respective percentage (100, 100 and 81.82) that can witness in table no: 65.

**Chart No: 11**

**Weightage given by Companies in Installation of Machinery and Equipment's**



Source: Primary Data.



Similarly, sewage treatment plant installation has given first-priority by these top three sectors electrical, electronic, pharmaceutical with their respective percentage (100, 81.82, and 80). Rainwater harvesting installation has given first-priority by these top three sectors electrical, electronic, pharmaceutical with their respective percentage (100, 54.55, and 50). Waste treatment plant installation has given first-priority by these top three sectors pharmaceutical, food & beverage, a chemical with their respective percentage (70, 54.55, and 33.33). Only two sectors have installed a solar energy generating system that too by very few companies 50 and 33.33% of them in electrical and textile respectively. Similarly, the wind energy generating system has installed by only one sector of a company that is by food & beverages 9.09% of them. Human motion sensors installed by textile, pharmaceutical, food & beverage, and electronic sector companies.

#### **4.3.5.3 Participation in Social Activities**

The rate of participation of companies in social activities is about 64.08% that could observe in table no: 66. That highlight most of the companies participate and shows there concerns towards the social cause. Similarly, group-based no nationality shows no significant differences between Indian and foreign companies, even though foreign companies participation is higher regarding Indian companies, but there is hardly any variation of 11% between them. That has been further support by Chi-square test result as P- value has come to 0.340 that is more than 95% confidences level value of 0.05 ( $0.340 > 0.05$ ). These say that there are no significant differences between Indian and foreign companies when it comes to participation in social activities.

Whereas group based on ownership. Shows significant differences between public and private companies, as public companies are seen to be more participating in social activities which have observed through variation of 29.55% between them. Chi-square test also shows support further as P-value has come to 0.002 that is less than 95% confidences level value of 0.05 ( $0.002 < 0.05$ ). That says there is a significant difference when it has come to participate in social activities between public and private companies.

**Table No: 66**

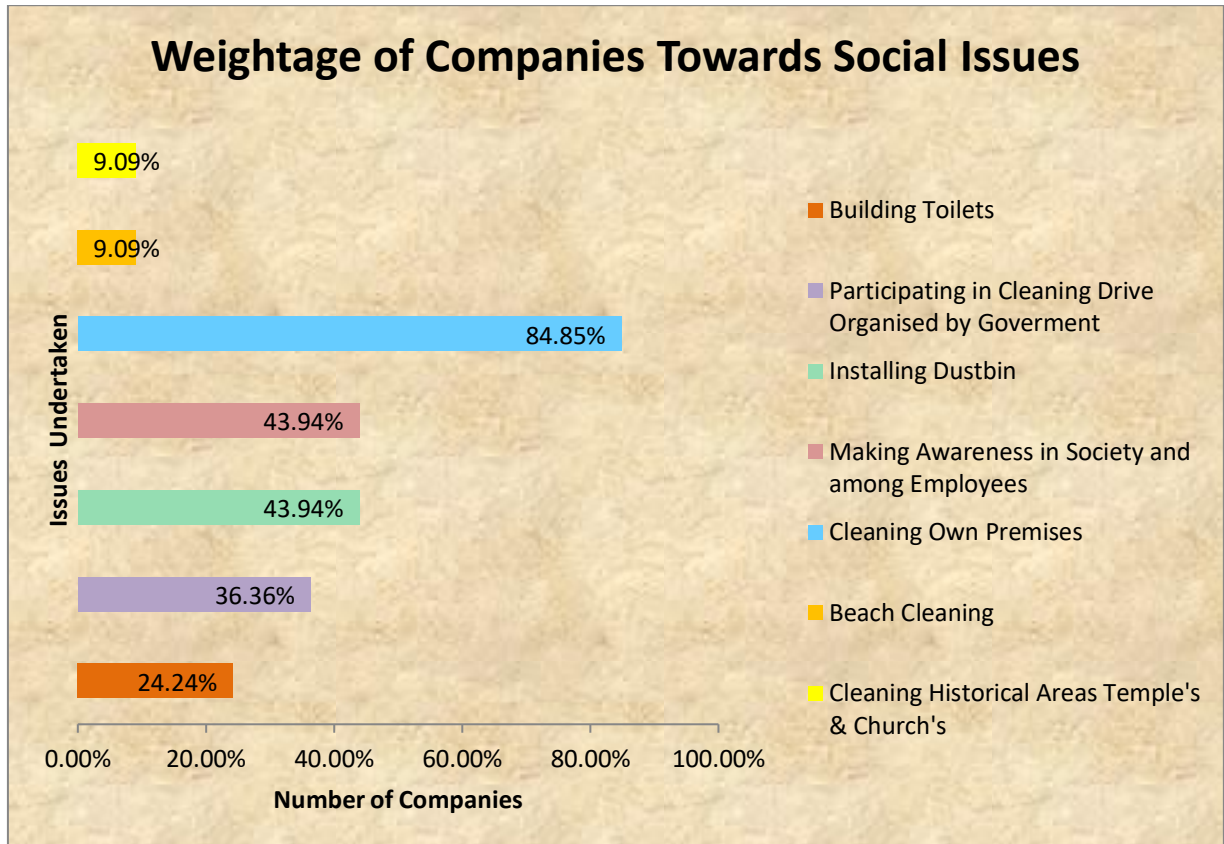
<b>Companies Preferences Towards Participation in Social Activities</b>										
Group-Based On		Participates in Social Activities		Not Involved in Social Activities		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	50	61.73	31	38.27	81	100	0.909	0.340	No Significant Differences in preference as ( P > 0.05 )
	Foreign	16	72.73	6	27.27	22	100			
	Total	66	64.08	37	35.92	103	100			
Ownership	Public	37	80.43	9	19.57	46	100	9.662	0.002	Significant Differences in Preference as ( P < 0.05 )
	Private	29	50.88	28	49.12	57	100			
	Total	66	64.08	37	35.92	103	100			
Size	Large	42	68.85	19	31.15	61	100	1.482	0.224	No Significant Differences in Preference as ( P > 0.05 )
	Medium	24	57.14	18	42.86	42	100			
	Total	66	64.08	37	35.92	103	100			

Source: Primary Data. (At 95% Confidences Level)

Likewise group base on size shows that there are no significant differences between large and medium companies regards to participation in social activities as there is hardly any variation of 11.71% have observed. Similarly, Chi-square test also shows the similar result as P-value has come to 0.224 that is more than 95% confidences level value of 0.05 (0.224 > 0.05). These say that there is no significant difference when it comes to participation in social activities between large and medium companies.

Chart No: 12

Weightage of Companies towards Social Issues



Source: Primary Data.

#### 4.3.5.4 Corporate Social Responsibility (CSR) Committee

Almost 56.31% of companies have framed corporate social responsibility committee that can witness in table no: 67. That is a good sign that says most of the companies looking positively towards building sustainable development. Where base on nationality it could be observed that there are no significant differences between Indian and foreign companies when it comes to having independent CSR committee. Even though foreign more companies have CSR committee as compare to Indian, this has further supported by Chi-square test as P- value has come to 0.080 that is more than 95% confidences value of 0.05 ( 0.080 > 0.05). These show that there are no significant differences between Indian and foreign companies when it comes to having a CSR committee.

**Table No: 67**

<b>Companies Preferences Towards Independent CSR Committee</b>										
Group-Based On		Independent CSR Committee		No CSR Committee		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
		F	%	F	%	F	%			
Nationality	Indian	42	51.85	39	48.15	81	100	3.065	0.080	No Significant Differences in preference as ( P > 0.05 )
	Foreign	16	72.73	6	27.27	22	100			
	Total	58	56.31	45	43.69	103	100			
Ownership	Public	36	78.26	10	21.74	46	100	16.279	0.000	Significant Differences in Preference as ( P < 0.05 )
	Private	22	38.60	35	61.40	57	100			
	Total	58	56.31	45	43.69	103	100			
Size	Large	44	72.13	17	27.87	61	100	15.219	0.000	Significant Differences in Preference as ( P < 0.05 )
	Medium	14	33.33	28	66.67	42	100			
	Total	58	56.31	45	43.69	103	100			

Source: Primary Data. (At 95% Confidences Level)

Whereas group based on ownership shows, there is a significant difference between public and private companies when it comes to having independent CSR committee. A variation of 39.66% have observed between them; Similar Chi-square test shows the result as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 (0.000 < 0.05). These say that there is a significant difference between public and private companies when it comes to having a CSR committee.

Likewise, a group based on size shows significant differences between large and medium companies when it comes to having a CSR committee. As a huge variation of 38.85% could observe between them, Chi-square test also supports the statement as P-value has come to 0.000. Which is less than 95% confidences value of 0.05 ( 0.000 < 0.05). These

say that there is a significant difference when it comes to having an independent CSR committee between large and medium companies.

#### **4.3.6 SUMMARY OF INTERPRETATION**

The analysis provides the evidence that positives measures have been taken by industries to prevent the environment from harmful causes, as all those parameters being selected for analysis most of them highlight that most of the companies have adopted those measures into their organization. The corporate sustainability initiatives have divided into three different sections, and these sections have judged base on parameters set under it.

The first section that is organization & management has judged based on five parameters set; these parameters are given score base on the number of companies carry out that particular measure. Where environmental goal has got 71.84 score which is the highest among all other parameters of organization and management, were vision and mission have got a score of 53.40 that can witness as per table no: 68. Similarly, an audit has obtained a score of 66.02, training to employees has got a score of 59.22. Were least score has been scored by awards as 8.74 the most-lowest score in all fourteen parameters set. Based on these five parameters the overall score is granted to the organization & management section that has got 51.84 scores. That also the lowest score in all three sections.

The second section that is organization and core business practices also being judged base on five different parameters set. Where stand towards climate change has got 52.43 scores, Waste management has got 99.03 score, which is the highest not only in this second section but infect in all three section, research and development have got 41.75 scores that is least score of the second section. Health and safety have got 91.26 scores, steps towards ecological conservation have got 85.20 scores, based on these five parameters the overall score have granted to the operations & core business practices section that has got 73.93 score which is the highest score compared to all three Section.

**Table No: 68**

<b>Positive Measures Taken by Industries to Prevent Environment from Harmful Causes (CSIs)</b>						
<b>Initiatives Taken</b>	<b>Score (%)</b>	<b>Initiatives Taken</b>	<b>Score (%)</b>	<b>Initiatives Taken</b>	<b>Score (%)</b>	
Environmental Goal	71.84	Stand towards Climate Change	52.43	Donation and Sponsorship	42.72	
Vision & Mission	53.40	Waste Management	99.03	Environmental Friendly Machinerics Installed	69.90	
Audit	66.02	Research and Development	41.75	Participation in Social activities	64.08	
Training to Employees	59.22	Health and Safety	91.26	CSR Committee	56.31	
Awards	8.74	Steps towards Ecological Conservation	85.20			
		1.Recycling Activities				90.29
		2.Cleaning Drives				83.50
		3.Tree Plantation				85.44
		4.Encourages Employees to Participate in social Activist				81.55
<b>Organisation &amp; Management</b>	<b>51.84</b>	<b>Operations &amp; Core Business Practices</b>	<b>73.93</b>	<b>Corporate Environmental Responsibility</b>	<b>58.25</b>	
<b>Corporate Sustainability Initiatives</b>			<b>61.34</b>			

Source: Primary Data.

The third section that is corporate environmental responsibility has judged based on the four different parameters set. Where donation and sponsorship have got 42.72 score that is the least score in the third section. Environmental friendly machinery installed has got 69.90 score which is the highest score in this section. Participation in social activities has got 64.08 scores. CSR committee has got 56.31 scores. Based on these four parameters the

overall score is granted to the corporate environmental responsibility section that has got 58.25 scores.

This highlight that operations & core business practices section has been carried out by most of the companies, followed by corporate environmental responsibility as well. Where most neglected section is organization & management were the least score has rewarded. Similarly, this highlights the overall score of a corporate sustainability initiative that has come to 61.34, these above evidence support in rejecting the null hypothesis of the study and accepting the alternate hypothesis of the study that says there are positive measures taken by industries to prevent the environment from harmful causes.

#### **4.3.7 INFERENCE**

The analysis and finding shows a clear picture how well 61.34% of companies have taken positive measures towards conservation & protection of environmental of Goa and to prevent from the harmful cause from their routine business activities. In the first section where they have scored least, is getting awards in which most of the companies failed drastically. It could be reasons that all companies cannot get awards as awards given to only those who have crossed the excellency benchmark. However, the score should have undoubtedly been more some around 30 to 40 mark. Other than this most of companies are doing well in other parameters of the first section. In fact, if we exclude the score of awards companies are doing even better than the third section as score comes up to 62.62 that is higher than a score of corporate environmental responsibility section.

Whereas the second section has been ruled out by the highest number of companies, This mite because those are core business practices, without implementing such measures any business cannot even think of running for a short period of the spell. As there is a high level of pressure right from the worker to external third parties like government, customers, suppliers, shareholders, and society. Even then score towards research and development has been seen drastically low as 41.75, especially Indian, private, and medium-sized companies hardly carry out R&D. Secondly, stand towards climate change also has been lacking behind after R&D. were it has observed that private companies are the one those are mostly lacking behind in taking a stand towards climate change.

The third section has second most preferred by most companies with the score of 58.25 if we ignore the awards from the first section which has got least score than corporate environmental responsibility section becomes the least neglected once. These indicate that corporate has to work not only on organization & management section, but they have to also work towards their corporate environmental responsibility section as well. Where donation and sponsorship had been most neglected parameters of the third section. This might be because most of the corporate said that they believe in taking initiatives on their own rather than, providing funds to third parties to take the initiative towards environmental conservation and protection on behalf of them.

These provide the evidence that except few parameters like awards, vision & mission, stand towards climate change, research, and development, donation, and sponsorship which has taken care but by least number of companies. All other parameters have been taken care of by a significant number of companies. These conclude that undoubtedly significant number of companies in Goa have taken a significant level of positive measures to prevent environment of Goa from harmful causes. That will support & lead to the sustainable all-round development of Goa.

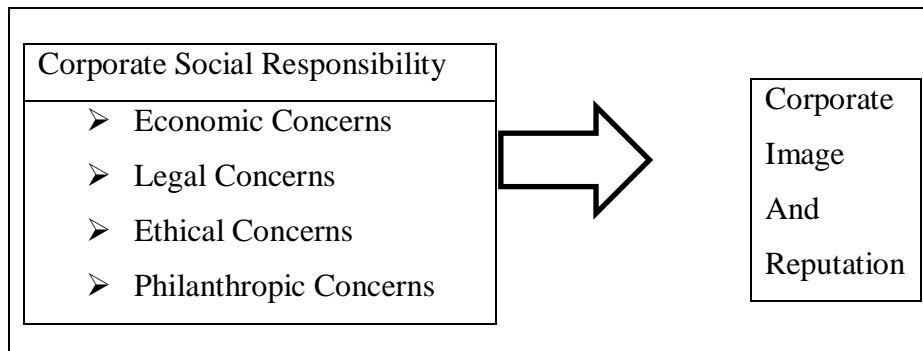
#### **4.4 ROLE OF ENVIRONMENTAL ACCOUNTING AND ETHICS IN BUILDING CORPORATE IMAGE.**

The theoretical framework of this research objective has adapted from Carroll's (1979) model. This model aims to see the influence of CSR programs (economic, legal, ethical, and philanthropic) on its corporate image and reputation. It supported the idea that numerous stakeholders will almost always favor a company that acts responsibly and has got wide of operational policies helpful to the local community and society at large. This study will largely concentrate on solely two aspects of Carroll model that is ethics - obligation to try and do what's right, honest, avoid harm. Philanthropic responsibilities – put aside funds for company social / community projects particularly environment protection. Based on the conceptual framework, hypotheses have developed as follows:



### Chart No: 13

#### Carroll's (1979) Model of Building Corporate Image and Reputation



Source: Adapted from (CARROLL, 1979)

#### 4.4.1 HYPOTHESIS:

4. **H<sub>0</sub>**: There is no significant role of environmental accounting and ethics in building corporate image.

##### Factors:

- High Reputation Firms
- Low Reputation Firms

#### 4.4.1.1 SUB – HYPOTHESIS:

1. **H<sub>0</sub>**: There is no relationship between company implementing environmental policy and building corporate image and reputation.
2. **H<sub>0</sub>**: There is no relationship between companies stand taken towards the environmental hazards and building corporate image and reputation.
3. **H<sub>0</sub>**: There is no relationship between a company having independent environmental management department and building corporate image and reputation.
4. **H<sub>0</sub>**: There is no relationship between making publicity & environmental awareness for the general public, employees and building corporate image and reputation.

5. H<sub>0</sub>: There is no relationship between company adopting voluntary iso norms & certificate and building corporate image and reputation.
6. H<sub>0</sub>: There is no relationship between company participating in social activities and, building corporate image and reputation.
7. H<sub>0</sub>: There is no relationship between company have corporate social responsibility committee and building corporate image and reputation.
8. H<sub>0</sub>: There is no relationship between company believe that its corporate image can be built after adopting environmental accounting & ethics with a high reputation company.

#### **4.4.2 ROLE OF ENVIRONMENTAL ACCOUNTING AND ITS RELATIONSHIP IN BUILDING CORPORATE IMAGE AND REPUTATION.**

To investigate, the role of environmental accounting and its relationship to building a corporate image. First, three null hypotheses have framed as mention above for the testing. The question had raised that company has implemented environmental policy, stand taken towards environment hazards, companies having independent environmental management department. Based on this question raised comparison has made with high reputation company and low reputation company. Derive at which company falls under what categories that is high reputation or low reputation. For that, it had considered as a company having turnover more than a hundred crores as high reputation firm and company with less than hundred crores as low reputation firms.

##### **4.4.2.1 Environmental Policy**

The first question had raised about the company have implemented environmental policy. The analysis has done between company implementing environmental policy and its impact on high reputation and low reputation Company. The analysis provides the result that there is a significant relationship between companies implementing environmental policy with high reputation of the company. As it could observe in table no: 69, a company

implementing environmental policy out of that 90.32% of those companies is falling under high reputation category.

**Table No: 69**

<b>Companies Preferences Towards Environmental Policy</b>						
Category of Companies	Implemented Environmental Policy		Not Implemented Environmental Policy		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	56	90.32	6	9.68	62	100
Low Reputation Companies	23	56.10	18	43.90	41	100
Total	79	76.70	24	23.30	103	100

Source: Primary Data.

Where similar result also could be observed in table no: 70, of Chi-square test as it also proves the same outcome at 95 % confidences level. As P-value is less than 0.05 that is 0.000 that means the null hypothesis got rejected, hence alternate hypothesis is accepted, that there is a relationship between company implementing environmental policy and building corporate image and reputation.

**Table No: 70**

<b>Chi-Square X<sup>2</sup> Tests - Environmental Policy</b>			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.176	1	.000
Continuity Correction	14.317	1	.000
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

#### **4.4.2.2 Stand Taken Towards Environmental Hazards.**

The second question had raised about company stands taken for environmental hazards. The study investigated if there is any relationship between low reputation and high reputation company and stand taken towards environmental hazards, as it could observe in table no: 71, that companies those have taken a stand towards environmental hazards. Out of that 62.90 % of companies fall into the category of high reputation firms. Similarly,

those companies have failed to take stand out of that 63.41 % of companies fall into the category of low reputation firms. This outcome confirms that company's stand taken towards environmental hazards is vital for companies reputation point of view.

**Table No: 71**

<b>Companies Stand Towards Environmental Hazards</b>						
Category of Companies	Stand Taken		Stand Not Taken		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	39	62.90	23	37.10	62	100
Low Reputation Companies	15	36.59	26	63.41	41	100
Total	54	52.43	49	47.57	103	100

Source: Primary Data

Where similar result could observe in table no: 72, of Chi-square test as well, where it shows that there is a significant relationship between those companies have taken stands towards environmental hazards with high reputation category of the company.

**Table No: 72**

<b>Chi-Square X<sup>2</sup> Tests - Environmental Hazards</b>			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.854	1	.009
Continuity Correction	5.839	1	.016
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

As P-value is less than 0.05 that comes to 0.009, which is much less than 0.05. These show that null hypothesis got rejected. Hence alternate hypothesis is accepted. That says there is a relationship between companies stand taken towards environment hazards and building corporate image and reputation.

#### **4.4.2.3 Environmental Management Department.**

The third question had raised about companies having independent environmental management department. The investigation was conducted to see whether there is any

relationship between companies having their independent environmental management department with high reputation or low reputation company, as it could witness in table no: 73, that companies those have an independent environmental management department. Out of 74.19% of the company fall into the category of high reputation firms, were almost 56.10% of companies those do not have independent environmental management department fall into low reputation category. This show cast the outcome of having independent environmental management department profoundly influencing the reputation of the company.

**Table No: 73**

<b>Companies Preferences Towards Independent Environmental Management Department</b>						
Category of Companies	Have Environmental Management Department		Don't Have Environmental Management Department		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	46	74.19	16	25.81	62	100
Low Reputation Companies	18	43.90	23	56.10	41	100
Total	64	62.14	39	37.86	103	100

Source: Primary Data.

**Table No: 74**

<b>Chi-Square X<sup>2</sup> Tests - Environmental Management Department</b>			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.625	1	.002
Continuity Correction	8.381	1	.004
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

The similar result could be observed in table no: 74, of Chi-Square test as it proves at 95% confidences level that says there is a significant positive relationship between companies having their independent environmental management department with high reputation company. As P-value is less than 0.05 that is 0.002, that is far lower hence null hypothesis have rejected and, the alternate hypothesis is accepted. That says there is a significant relationship between a company having independent environmental management department and building corporate image and reputation.

#### 4.4.3 ROLE OF ETHICS AND ITS RELATIONSHIP IN BUILDING CORPORATE IMAGE

To investigate the role of ethics, and its relationship towards building corporate image, another, four null hypotheses have framed as mention above for the testing. The question has raised that company was making Publicity & environmental awareness for general public & employees, adopting voluntary ISO norms & certification, participating in social activities, have corporate social responsibility committee. Their relation has tested to high reputation and low reputation company.

##### 4.4.3.1 Making publicity & environmental awareness for the general public

The investigation was carried out to find is there any relationship between company Making publicity & environmental awareness for the general public, employees and High reputation company or with low reputation company. Study reviles that there is a relationship between a company making publicity & environmental awareness with high reputations, as it could witness in table no: 75. That, those companies which are making publicity & environmental awareness for the general public, out of this 75.81% of companies fall into the category of high reputation firms. Were as companies those do not make any publicity & environmental awareness to general public almost 65.85% of companies come under low reputation companies.

**Table No: 75**

<b>Companies Preference Towards Publicity &amp; Environmental Awareness for General Public</b>						
Category of Companies	Making Publicity & Environmental Awareness		Not Making Publicity & Environmental Awareness		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	47	75.81	15	24.19	62	100
Low Reputation Companies	14	34.15	27	65.85	41	100
Total	61	59.22	42	40.78	103	100

Source: Primary Data

**Table No: 76**

<b>Chi-Square X<sup>2</sup> Tests - Publicity &amp; Environmental Awareness</b>			
	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	17.737	1	<b>.000</b>
Continuity Correction	16.054	1	.000
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

Where Chi-square test in table no: 76 also shows the similar result as P-value is less than 0.05 that is 0.000 which is much lesser than 0.05, so null hypothesis have rejected, hence alternate hypothesis is accepted. There is a relationship between making publicity & environmental awareness for the general public and building corporate image and reputation.

#### **4.4.3.2 Adopting Voluntary ISO Norms & Certification**

It has identified in an investigation that high reputation company tends to adopt ISO norms voluntarily as compared to the low reputation company, as it could observe in table no: 77 that, those companies which have ISO certificate. Out of 83.87% of the company fall into the category of high reputation firms. Were as companies those do not have ISO certificate almost 51.22% of companies come under Low reputation companies.

**Table No: 77**

<b>Companies Preference Towards ISO Certification</b>						
Category of Companies	Have ISO Certificate		Don't Have ISO certificate		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	52	83.87	10	16.13	62	100
Low Reputation Companies	20	48.78	21	51.22	41	100
Total	72	69.90	31	30.10	103	100

Source: Primary Data.

This fact has entirely proven because the Chi-Square test in table no: 78 also shows a significant result. As P-value is less than 0.05 that it has come to 0.000 which is less than P-value, hence null hypothesis have rejected and, the alternate hypothesis is accepted. That

says there is a significant relationship between company adopting the ISO certificates & norms and being high reputation company.

**Table No: 78**

<b>Chi-Square X<sup>2</sup> Tests - ISO Certification</b>			
	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	14.444	1	<b>.000</b>
Continuity Correction	12.825	1	.000
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

#### 4.4.3.3 Participating in Social Activities

The investigation was conducted to see whether there is any relationship between company participating in any social actives like Swachh Bharat Nital Goem Abhiyan and its impact on the corporate image. Where it could observe in table no: 79, that there is no significant relationship with company participating in any social activities, and its impact on the corporate image, as there is hardly some 5.15% of the variation between high and low reputation firms that can observe with those companies participating in social activities.

**Table No: 79**

<b>Companies Preferences Towards Participation in Social Activities</b>						
Category of Companies	Participate in Social Activities		Don't Participate in Social Activities		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	41	66.13	21	33.87	62	100
Low Reputation Companies	25	60.98	16	39.02	41	100
Total	66	64.08	37	35.92	103	100

Source: Primary Data.

Analysis highlights that there is no relationship between company participating in social activities and building a corporate image. As Chi-Square test in table no: 80, failed to reject (accepted) the null hypothesis, Hence accepted the sixth sub null-hypothesis that says there is no relationship between company participating in social activities and building corporate image and reputation. As P-value is more than 0.05 which has come to 0.594 that is much higher than 0.05 which proves by rejecting the alternate hypothesis.



**Table No: 80**

<b>Chi-Square X<sup>2</sup> Tests - Participating in Social Activities</b>			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.285	1	.594
Continuity Correction	.105	1	.746
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

#### **4.4.3.4 Corporate Social Responsibility Committee**

The study explores whether there is any relationship between a company having corporate social responsibility committee with building corporate image and reputation. As the investigation highlight that companies those have corporate social responsibility committee into place. Out of that 74.19 % of companies fall under high reputation company. Were precisely similar percentage can observe regarding those company do not have corporate social responsibility committee into place 70.73% fall under Low reputation firms that can witness through table no: 81. These show how much implementing corporate social responsibility committee into business activities is vital in building a corporate image.

**Table No: 81**

<b>Companies Preferences Towards Adopting Corporate Social Responsibility Committee</b>						
Category of Companies	Have Corporate Social Responsibility Committee		Don't Have Corporate Social Responsibility Committee		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	46	74.19	16	25.81	62	100
Low Reputation Companies	12	29.27	29	70.73	41	100
Total	58	56.31	45	43.69	103	100

Source: Primary Data.

Were this evidence get further support after Chi-square test used at 95 % confidences level. The result of Chi-square test shows results in table no: 82 that there is a significant relationship between high reputation firms, companies having implemented corporate

social responsibility committee in their firm as compared to low reputation firms. As P-value is less than 0.05 that has come to 0.000 that is lower than P-value. Hence the null hypothesis is said to be rejected, and the alternate hypothesis has accepted, that there is a relationship between companies have corporate social responsibility committee and building corporate image and reputation.

**Table No: 82**

<b>Chi-Square X<sup>2</sup> Tests - Corporate Social Responsibility Committee</b>			
	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	20.247	1	<b>.000</b>
Continuity Correction	18.462	1	.000
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

#### **4.4.4 COMPANIES PERCEPTIONS TOWARDS ADOPTING ENVIRONMENTAL ACCOUNTING AND ETHICS**

The investigation reveals that companies having high reputation almost all 93.55% companies are going with the option says that corporate image or reputation will undoubtedly Increase if they adopt ethics & environmental accounting. Those companies are having a low reputation that 61.98% companies are also going with the same option that can observe in table no: 83. On the other hand second option that corporate image or reputations have no impact after adopting ethics & environmental accounting. This option has selected by just 4.84% with high reputation companies and 31.70% by low reputation companies. Where 1.61% companies with high reputation and 7.32% with low reputation companies. Says that after adopting ethics & environmental accounting their corporate image or reputation will decrease.

**Table No: 83**

<b>Corporate Image/Goodwill can build after adopting Environmental Accounting</b>								
Category of Companies	Corporate Image / Goodwill will Surely Increase		Corporate Image / Goodwill will have no impact		Corporate Image / Goodwill will Decrease		Number of Companies	
	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage	Frequencies	Percentage
High Reputation Companies	58	93.55	3	4.84	1	1.61	62	100
Low Reputation Companies	25	60.98	13	31.70	3	7.32	41	100
Total	83	80.58	16	15.53	4	3.88	103	100

Source: Primary Data.

**Table No: 84**

<b>Chi-Square X<sup>2</sup> Tests - Corporate Image/Goodwill can build after adopting Environmental Accounting</b>			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.787	2	.000
Likelihood Ratio	16.963	2	.000
N of Valid Cases	103		

Source: Primary Data. (At 95% Confidences Level)

Chi-square test at 95% confidences level also suggests that there is a significant positive relationship between company perceptions towards, after adopting ethics & environmental accounting their corporate image will undoubtedly increase with high reputation companies. Companies which are saying that there is no impact on their image or reputation are those who have low reputation. As P-value is less than 0.05 that is 0.000 which can witness in table no: 84, that means null hypothesis have rejected, hence alternate hypothesis is accepted, that there is a relationship between Companies believes that its corporate image can build after adopting ethics & environmental responsibility with high reputation company.

#### 4.4.5 INFERENCE

The study has taken Carroll's (1979) model and his four factors as a baseline. Out of this four factors Economic concerns, Legal concerns, Ethical concerns, Philanthropic concerns only two factors has considered for this study. Those are Ethical concerns, and

Philanthropic concerns on the base of this factor eight sub-hypotheses are framed which has used for testing the relationship between companies adopting environmental accounting and ethical practices with building a corporate image.

Based on research findings, the following conclusions can put forward. First environmental accounting implication is also able to give a positive effect on building company image. As three out of three sub-hypothesis framed towards environmental perspective shows significant in companies adopting an environmental policy, stand taken towards global environmental hazed and having an independent environmental management department shows a positive relationship with the company having a high reputation.

The second ethical implication has able to give a positive effect on building company image. This statement has supported form the proven fact of the study. As four out of three sub-hypothesis framed towards ethical perspective shows significant in companies making publicity & environmental awareness for general public & employees, adopting voluntary ISO norms & certificates and having corporate social responsibility committee has a positive relationship with the company having a high reputation. There is no relationship between companies participating in social activities, with high reputation firms.

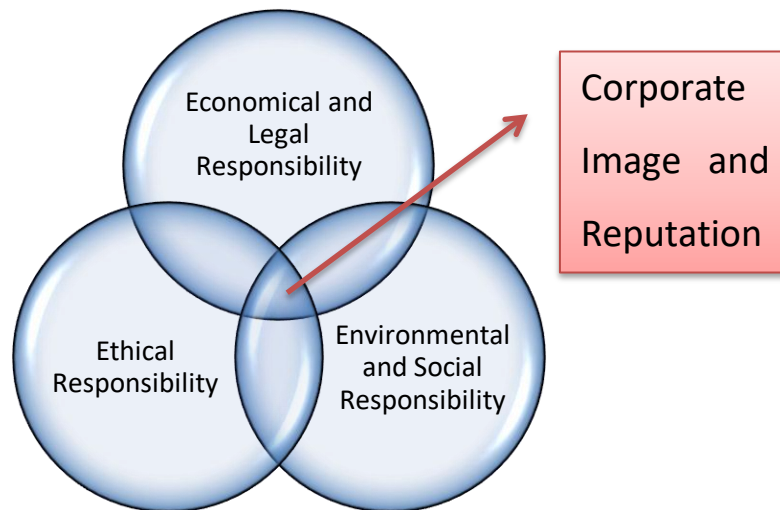
The third part of the investigation that says companies perceptions towards adopting environmental accounting & ethics, and its impact on building corporate image and reputation. Have a significant positive relationship with the company saying that corporate image and reputation will undoubtedly Increase if they adopt environmental accounting and ethics with high reputation company. Very few companies with low reputation say that even after adopting ethics and environmental responsibility. There will be no impact on their corporate image, or their corporate image will decrease.

The analysis provides ample evidence that all factor, which has considered as it will affect the corporate image and reputation. These have been disproving as eight out of seven Sub-hypothesis found to be having a significant relationship. Whereas one sub-hypothesis has no significant relationship, which highlights not all factor of ethics & environmental responsibility affect in building corporate image, but overall some element of factors combinable influence in building corporate image & reputations. Based on the same evidence and above investigation new model of building corporate image and reputation

has developed. The company must not only focus on factors like economics, legal but also take into consideration factors like ethics, environmental and social. Those are also becoming an essential factor, as some elements are profoundly influencing in building corporate image and reputation in globalized markets.

#### Chat No: 14

#### A new model of the Building Corporate Image and Reputation Process



Source: Developed

### 4.5 ROLE OF GOVERNMENT TOWARDS SUSTAINABLE ENVIRONMENTAL DEVELOPMENT

Investigate the role of government towards the sustainable environmental development of the business enterprise in Goa. To assess the same various governments' institution has been visited and the personal interview has conducted with government officials. Also, information has been collected through application letter and visiting their official websites and through an annual report. To identify the role played by the government towards sustainable environmental development one major null hypothesis has been framed.

#### 4.5.1 HYPOTHESIS

5. **H<sub>0</sub>:** There is no significant role of government towards sustainable environmental development in business enterprises in Goa.

#### **4.5.2 THE GOA STATE POLLUTION CONTROL BOARD (GSPCB)**

The Goa State Pollution Control Board (GSPCB) is a statutory board established on 01/07/1988 under the Water (Prevention & Control of Pollution) Act, 1974. Before to that, the former union territory Goa, Daman, and Diu, the central board of the prevention and control of water pollution was acting as the functions of the state board within Goa. The Central Pollution Control Board at Ponda-Goa established a division office for the purpose. The equivalent arrangement had continued until the constitution of the state board. In the meantime, the division office of the central board was transferred to Baroda on 4th April 1988, to restructure it as a West Zonal Office. All the critical records connecting to Goa had shifted to the Goa State Pollution Control Board on 12th September 1988. Goa State Pollution Control Board after structure established its headquarters at Bambolim in Goa Medical College Complex. The board presently situated at first floor in Dempo Tower at Patto Plaza, Panjim.

However the board is not a licensing authority, its clearance is critical for every industrial proposal at two stages.

**Stage – 1** The entrepreneurs once obtaining temporary registration from the Directorate of Industries and Mines in the case of small-scale companies and clearance of High Powered Co-ordination Committee (HPCC) in the case of large or medium scale companies, is compulsory to obtain clearance from the board prior taking any step to establish the plant. To acquire this clearance, the entrepreneurs should apply online his application in the approved form before establishing in the board office on any working day. The application fulfilling all the necessities shall be processed within the shortest probable period and in no case issue of consent to install / approval to operate shall be delayed by more than 45 days. The files received from Red category will be cleared by the technical committee each Monday, and chairman of the board will clear the Orange and Green category.

**Stage – 2** The consent to establish issued by the board will be valid up to the functioning of the plant or three years from the date of issue, whichever is earlier. The industrialist should submit his application for consent to operate in the board office at least 30 days before the beginning of the production, in a given format online. The request for approval should accompany comprising a copy of the consent to establish and set fees as mentioned

in the approval form along with all the obligatory accompaniments. The request for agreement to operate also shall be processed as in the case of approval to establish.

It will be in the interest of entrepreneurs to work together with the pollution control board in carrying out its function to retain the quality of the environment of the state.

#### **4.5.2.1 Monitoring Network for Air and Water Quality**

The Goa State Pollution Control Board monitors the air, and water quality under the Central Pollution Control Board funded projects National Air Monitoring Programme (NAMP) and National Water Monitoring Programme (NWMP). The NAMP projects covers 16 air quality observing locations within the state of Goa and the NWMP project covers 49 water quality checking locations within the state of Goa. The details of the project have specified as beneath.

##### **4.5.2.1.1 National Air Monitoring Programme (NAMP)**

These are associated on-going activity funded by the Central Pollution Control Board, New Delhi under the National Air Monitoring Programme (NAMP). Under this programme, the board continued to monitor the ambient air quality at 16 locations within the state of Goa. The following are the 16 stations under the NAMP project.

1. Panjim, near GSPCB office
2. Vasco Town, near Electricity Department
3. Near Fire Brigade Station, MPT
4. Assanora
5. Bicholim
6. Honda
7. Codli
8. Amona
9. Usgao
10. Curchorem
11. Sanguem

12. Tilamol-Quepem
13. Margao town
14. Mapusa town
15. Ponda Town
16. Kundaim Industrial Estate

#### **4.5.2.1.2 National Water Quality Monitoring Programme (NWMP)**

The Goa State Pollution Control Board monitors water quality at 52 locations all over Goa under the Central Pollution Control Board sponsored project NWMP. The water bodies monitored comprise rivers, wells, canals, lake, reservoir, and creek. Among the rivers, the estuarine rivers as well the sweet water rivers which form a part of the network for water intake points for water treatment plants for public water supply have been covered. Groundwater sources (well water) located inside the industrial estates are also a part of this programme. The 52 locations covered under this programme are distributed all over Goa. Such that 29 stations located within the north district and 23 located within the south district. Where this 52 location again bifurcated into two groups based on monitoring frequencies, i.e., (i) 46 locations which monitored monthly and (ii) 6 locations (i.e., Bore wells) monitored half yearly.

#### **4.5.2.2 Implementation of Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008**

The Hazardous Waste (Management & Handling) Rules were notified by the Ministry of Environment & Forests in the year 1989 underneath the provisions of the Environment Protection Act, 1986. Later the rules were amended within the years 2000 and 2003 and afterward, they modified it as the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules in the year 2008. The board grants authorizations to companies producing and handling hazardous wastes. The (GSPCB) Goa State Pollution Control Board has determined 866 industrial units that are generating hazardous waste in Goa up-to April 2014. During the year under report, 335 units have been granted authorization (new/renewals) under the Hazardous Waste (Management & Handling) Rules, 2008.



**Table No: 85**

<b>Hazardous Waste Generated within the State of Goa.</b>			
<b>Categories of Waste</b>	<b>Years</b>		
	<b>2012-13</b>	<b>2013-14</b>	<b>2014- 15</b>
Incinerated (Pharmaceutical) Waste (MT)	28566.122 MT	33618.03 MT	16705.9438 MT
Oil Filters / Empty Tins (Nos)	293 Nos	2181 Nos	9947 Nos
Landfill Waste (MT)	5513.676 MT	2529.299 MT	3345.665 MT
Recyclable Waste (MT)	2473.5493 MT	1830.791 MT	1873.83 MT
Discarded Empty cans/tins (Nos)	7883 Nos	41212 Nos	37339 Nos

Source: Annual Report of Goa State Pollution Control Board.

**Chart No: 15**

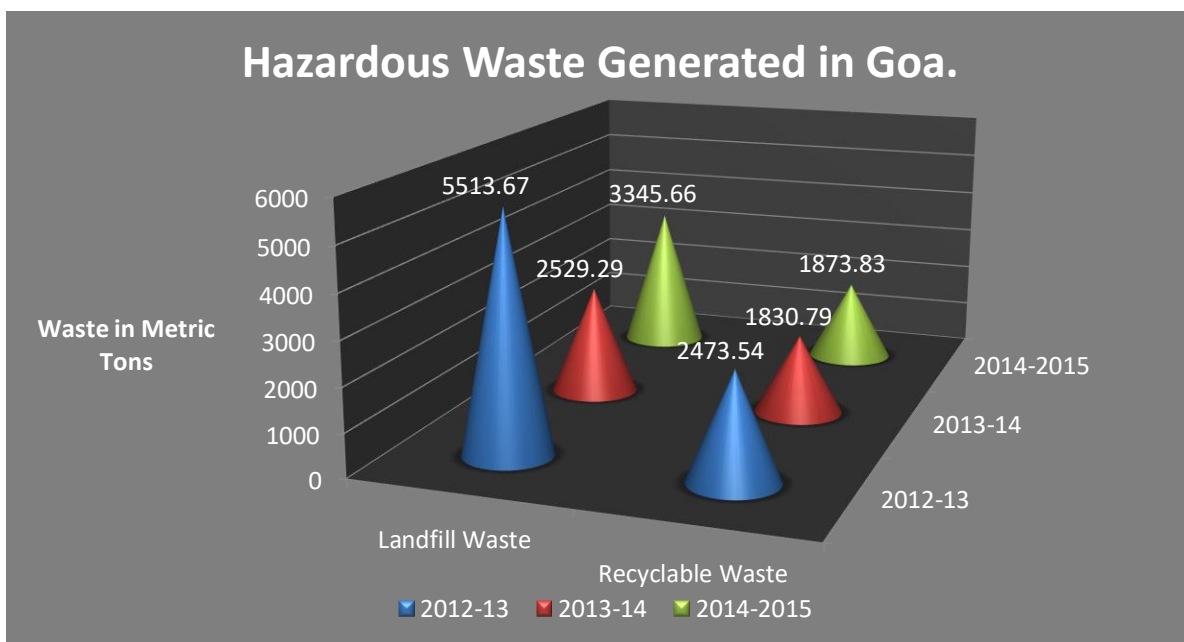
**Hazardous Incinerated (Pharmaceutical) Wastes Generated in Goa**



Source: Annual Report of Goa State Pollution Control Board.

**Chart No: 16**

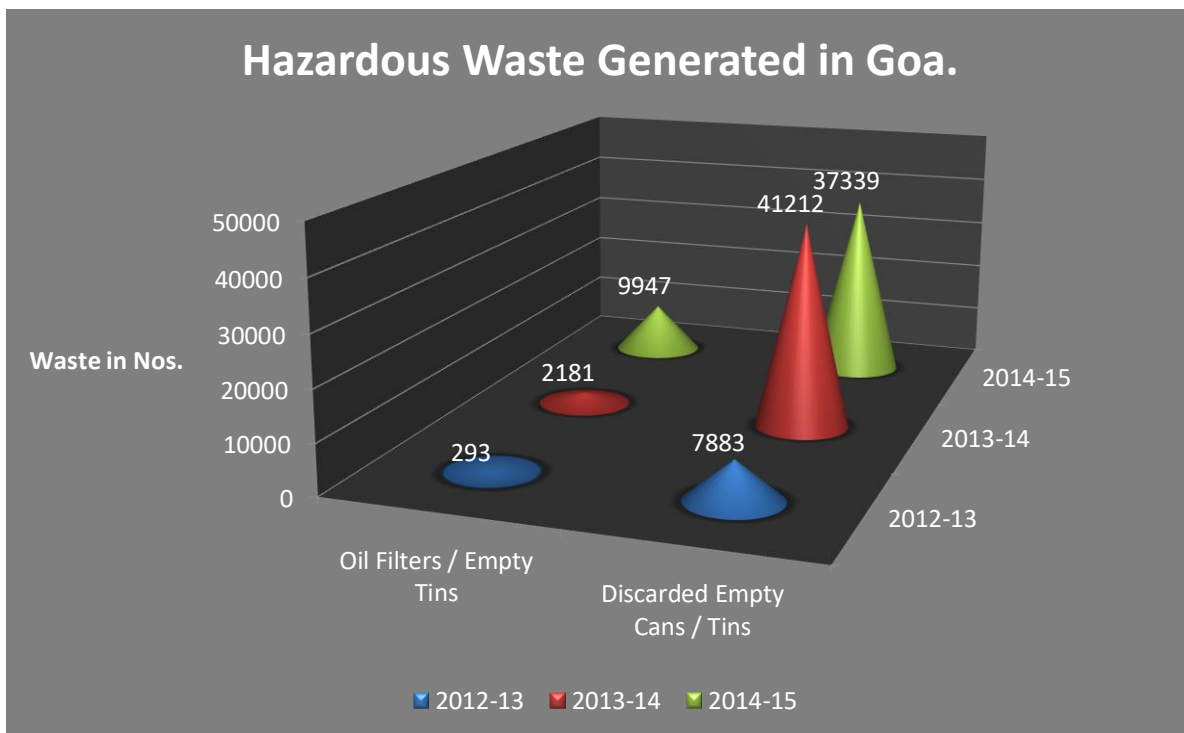
**Hazardous-Land Fill and Recyclable Wastes Generated in Goa**



Source: Annual Report of Goa State Pollution Control Board.

**Chart No: 17**

**Hazardous Oil Filters and Discarded Empty Cans/Tins Wastes Generated in Goa**



Source: Annual Report of Goa State Pollution Control Board.

Where hazardous waste like Incinerated (Pharmaceutical) waste has increased in the year 2013-14 as compared to the previous year 2012-13, but there is a definite decrease in the year 2014-15 also can be noticed as per table no: 85. Hazardous waste like Landfill Waste & Recyclable waste shows a decreasing trend as the year passed out except in the year 2014-15 increase in landfill waste has seen but it still less as compared to a 2012-13 year. However, a substantial increasing trend can observe as years passed out in both the hazardous waste that is in Oil Filters / Empty Tins & Discarded Empty Cans / Tins.

#### **4.5.2.3 Implementation of Plastics Waste (Management & Handling) Rules, 2011**

There are twenty-one units involved in the manufacture of plastic bags and containers in the state. Out of the 21 units, 18 units have got approval and 08 units have obtained registration under Plastic Waste (Management & Handling) Rules 2011. Two units are not in operation. The Government of Goa through the High-Level Task Force (HLTF) established to provide directions and implement various measures as announced in the budget speech, 2012-13, towards resolving the solid waste management problems affecting the state of Goa. The government has taken clear-cut decision to phase out the plastic from domestic use. Accordingly, the government has decided to implement banning the manufacturing, sale, and use of plastic strictly, having a thickness less than 40 microns. Bags which do not have the name of the manufacturer, thickness details and registration number printed on them as per the provisions of the Plastic Rules 2011 and Goa Non-Biodegradable Garbage (Control) Act, 1996. A drive for this purpose has already commenced on 22<sup>nd</sup> April 2013 on the occasion of Earth Day all over Goa including in and around the beaches of Goa.

#### **4.5.2.4 Action Taken for Violations of the Water, Air, and Environment (Protection) Act.**

The board while granting-approval to operate under the Water Act and Air Act stipulates specific conditions for compliance by the various industries to control the level of pollution. The industrial units have to submit regular monitoring report comprising the stack analysis reports, water reports, for effective implementation of the measures adopted by them.

**Table No: 86**

<b>Number of Notices Issued by the (GSPCB) Yearly</b>			
<b>Type of Notices</b>	<b>2013-14</b>	<b>2014-2015</b>	<b>2015-16</b>
Show Cause Notices	2025 Units	1045 Units	1824 Units
Close and Suspension Notices	101 Units	514 Units	56 Units
<b>Total</b>	<b>2126</b>	<b>1559</b>	<b>1880</b>

Source: Annual Report of Goa State Pollution Control Board.

The board also conducts inspections of the industrial units to monitor the compliance, and wherever non-compliance has reported. The show cause notice, directions are issued to the concerned industry. Further, it has also noted that several small-scale units are operating without obtaining permission to operate. As mandatory under the Air Act and the Water Act, in such cases, the board has issued show cause notices to all such units. Those have not satisfied with the conditions specified in the approval order and functioning without obtaining approval to operate off the board. Board has asked them to apply again for permission for the further functioning of their unit. Table no: 86 also highlights there is decreasing trend in notices issued by GSPCB.

#### **4.5.2.4.1 Complaint Mechanism**

The Goa State Pollution Control Board receives several complaints on various subject matters. For scrutinize and study all such complaints, a complaint committee has been established involving of Scientist "C," Senior Law Officer and the Environmental Engineer. The complaints so received are examined to authenticate whether the grievances alleged by the complainants are within the purview of the Water Act, Air Act or the rules notified under the Environmental (Protection) Act.

After scrutinizing the said complaints, it has noted that specific numbers of complaints do not come within the purview of the board. Thus all such complaints are forwarded to the concerned departments for instigating suitable action in the matter with the copy endorsed to the complainant. The complaints wherein the grievances were regarding air and water pollution, the same have scrutinized and wherever violations has observed GSPCB has instigated appropriate action. Where table no: 87 show there is an increasing trend in a

complaint received from the year 2013 – 2016 as in the year 2015-16 the figure has gone up by 109 more compliant as compared to previous year.

**Table No: 87**

<b>Complaint Received by GSPCB</b>	
<b>Year</b>	<b>Number of Complaints Received by (GSPCB)</b>
<b>2013-14</b>	281
<b>2014-15</b>	300
<b>2015-16</b>	409

Source: Annual Report of Goa State Pollution Control Board.

#### **4.5.2.4.2 Criminal Complaints / FIR's filed by Goa State Pollution Control Board (GSPCB) for Violating Act.**

GSPCB files criminal complaints against those companies which violate the environmental laws and norms, only after giving showcase notice to the companies, if law-breaker does not react to the showcase notice FIR's being filed on that violator so the law can take its action. It can observe in table no: 88 FIR's filed by GSPCB is an increasing trend as in the year 2013-14 there were three FIR's filed in next year it increased to four and in the year 2015-16 their rate of firs registered has almost doubled as eight criminal fir's had filed by GSPCB. These may because of increasing number of violator's complaint received in the year 2015-16.

**Table No: 88**

<b>FIR'S Filed by GSPCB</b>	
<b>Year</b>	<b>Number of Complaints / FIR'S Filed by (GSPCB)</b>
<b>2013-14</b>	03
<b>2014-15</b>	04
<b>2015-16</b>	08

Source: Annual Report of Goa State Pollution Control Board.

#### 4.5.2.5 World Environment Day

World Environment Day (WED), celebrated on 5th June every single year by GSPCB to pledge positive environmental action, United Nation' chief vehicle for encouraging global awareness and action for the environment. It is the people's day for doing something constructive for the environment, electrifying individual action into a united power that creates a positive impact on the environment

The well – being of humankind, the environment, and the working of the economy, eventually depend upon the responsible management of the planet's natural resource. The evidence is building that individuals are consuming far more natural resource than what the planet can sustainably provide.

#### 4.5.2.5.1 Best Environmental Practices Award

Table No: 89

Award For Best Environmental Practices by (GSPCB)						
Year	1 <sup>st</sup> Place		2 <sup>nd</sup> Place		3 <sup>rd</sup> Place	
	Industries	Hotel	Industries	Hotel	Industries	Hotel
2013-14	-Nill-	Hotel Leela Goa.	-Nill-	Royal Orchid Beach.	-Nill-	Hotel Fidalgo.
2014-15	MRF Ltd.	-Nill-	Zuari Agro Chemical Ltd.	-Nill-	-Nill-	-Nill-
2015-16	Glenmarks Generic Limited, Colvale IDC, Bardez Goa.	Kenilworth Resort and Spa, Utorda, Salcete Goa	Nestle India Pvt Ltd. Usgao IDC, Ponda Goa.	Park Prime Hotels, Panjim Goa.	Encube Ethicals Pvt Ltd. Madkaim IDC, Ponda Goa.	-Nill-

Source: Annual Report of Goa State Pollution Control Board.

Every single year best environmental practices contest takes place for the industries and hotels, on occasion of World Environment Day, where industries/units are adopting the best environmental practice. Concerning to “Food use: Sustainable Lifecycle” and its measurable benefits. Were in the top six selected units are allowed to give a brief presentation about several steps undertaken by them towards environmental conservation. Based on their best environmental conservation practices & measures adopted by those units, top three practices are selected and have rewarded by the award for best environmental practices. Where table no: 89 depicts all the places and year wise winner of the best environmental practices award.

#### 4.5.2.5.2 Environmental Quiz Competition

Similarly, theme-based quiz competition has been carried out by GSPCB every single yearly based on environmental issues. On occasion of celebration World Environment Day, teams have invited from various industries and government department of Goa. Where out of 20 participating teams top three teams were rewarded with a prize for sharing their knowledge and views to the present public about environmental issues. Where table no: 90 shows the details of places and year wise winner of quiz completion organized by GSPCB on the environment.

**Table No: 90**

<b>Winner of the Environmental Quiz Competition</b>			
<b>Year</b>	<b>1<sup>st</sup> Prize</b>	<b>2<sup>nd</sup> Prize</b>	<b>3<sup>rd</sup> Prize</b>
<b>2013-14</b>	Glenmark Generic Ltd.	Sesa Goa Ltd	Radisson Blu Resort
<b>2014-15</b>	Goa State Pollution Control Board (GSPCB)	MRF Limited	Sesa Sterlite
<b>2015-16</b>	Forest Department	Nestle India Ltd	Goa State Infrastructure Development Corporation

Source: Annual Report of Goa State Pollution Control Board.

These are some of the essential activities highlighted by GSPCB Goa State Pollution Control Board from their annual report. Those activities show casting in what way government is playing its role towards sustainable environmental development in business enterprises in Goa, through one of the branches of government like GSPCB. This evidence supports in rejecting the null hypothesis and accepting the alternate hypothesis of the study.

#### **4.5.3 THE DIRECTORATE OF INDUSTRIES TRADE AND COMMERCE. (DITC)**

During pre-liberation time work associated with the promotion and regulation of companies in Goa, was watched after by "Direção de Economia" (Directorate of Economic Services) that involved public works, land survey, industries/companies & mines, civil supplies and weight & measures. Post-liberation, the Directorate of Industries & Mines was divided from the above Directorate of Economic Services and started working independently. Historically Goa was a rural economy with a solid mining base. Now, Goa has changed into a fast-growing industrial sector. In the year 2002, government notice no 23/1/87-GA & C dated 06.9.2002 the directorate of industries & mines had further divided into two headquarters: i) Directorate of Industries, Trade & Commerce ii) Directorate of Mines & Geology.

The Directorate of Industries, Trade, and Commerce (DITC) is accountable for the advancement, expansion, and regulation of micro, small and medium enterprises/industries in the state of Goa. Besides this, DITC additionally plays a crucial role in facilitating and coordinating activities associated with industrial development. Goa was historically a rural economy with a strong mining base. Now Goa with several developments has slowly transformed into a fast-growing industrial center. DITC is involved with policy planning, putting in place guidelines, an organizational framework and execution of both state and central government-sponsored schemes. DITC's mission is to generate economic growth through accelerated industrial development, also constantly working towards generating sustainable employment opportunities mainly for the people of Goa. Even at this stage Directorate of Industries, Trade, and Commerce enthusiastically encourages environmentally friendly industrial development. Facilitating and synergizing the state and private sector to create an atmosphere in which present industry can grow and expand, and new industries can hold root in the comparative market segment and even flourish in the



globalized market. DITC administrative bearers who will guide entrepreneurs who wish to set up units in the industrial or service sector and will also deliver information about several schemes of the Government of Goa and the Government of India which has implemented through DITC.

An industry has to register with Directorate of Industries Trade & Commerce Udyog Bhavan Panjim Goa, under the following acts.

1. The Industries (Development & Regulation) Act, 1951 which came into force on 31st October 1951.
2. Goa Micro Small & Medium Enterprises Development Rules, 2007 under section 30, read with sub-section (3) of section 21 of MSMED Act 2006.
3. Khadi: Village and Industries Board function under GDDKVIB Act 1965 and Rules of 1967.
4. The Goa Industrial Development Act, 1965 the Goa Industrial Development Corporation Allotment Regulation 2014, Goa Industrial Development Corporation Transfer and Sublease Regulation 2014.
5. Goa Investment Promotion Act, 2014 (Board).

#### **4.5.3.1 Goa State Financial Incentives to the Industries for Certification and Patenting Scheme, 2003**

This scheme may call the “GOA STATE FINANCIAL INCENTIVES TO THE INDUSTRIES FOR CERTIFICATION AND PATENTING SCHEME, 2003”. It shall come into force from the date of publication in the Goa government official gazette, and shall remain in force up to 31<sup>st</sup> March 2008. Same has renewed again and had into force till date March 2017. Units which acquire Indian Standard Institute & International Standard Organization certification or some other international certification or patent right on products or processes, have to be especially encouraged. Such units provide a benchmark of superiority and serve as a model for others to rival. Hence, this scheme is announced for industrial units to deliver financial motivations for achieving the benchmark of excellence.

The objective of the schemes is first to encourage the industrial units to achieve national and international certification and patent rights to uphold mandatory standards of quality of products/processes. Second to give a boost to the industrial units so they will accomplish the standard of superiority and serve as a role model for others to emulate, third to promote healthy qualitative industrial growth in the state of Goa.

The eligibility criteria are such that units which achieve standard from Indian institution, international standard organization certifications or some other national/international certifications for quality standards or patent right on product or processes are qualified to avail financial encouragements under this scheme. On condition that the industrial unit is under the category of small/medium and large-scale industry or service company falling under the list of Green/Orange category, the facility is accessible only after permanent registration and all units existing or new are eligible.

The quantum of assistance which is provided by DITC, under this scheme financial support/subsidy to the extent of Rs.2 lakhs or the actual expenses incurred whichever is less will approved per unit. Under the scheme, the financial encouragement can avail once in a lifetime of the unit, irrespective of modification in ownership/structure or product. The procedure for applying is so that, the eligible unit shall apply in the specified proforma to the director, Directorate of Industries, Trade, and Commerce along with the documentary proof to show that the unit has achieved Indian Standard Institute/International Standard Organization or patent right or any other international certification.

#### **4.5.3.1.1 Number of Industries Availed Benefits**

This highlight Director of Industries Trade and Commerce (DITC) has taken initiative support those companies which are complying with international organization level standard in their firms like ISO 14001, 9001, which are known for environmental conservation & protection and quality of the product. Reimbursement has been done to those companies those have obtained Indian standard institute/international standard organization or any international certification. The table no: 91 show all details number of beneficiaries of Certification and Patenting Scheme, 2003 year wise where it can notice that in the year 2013-14 maximum 25 corporate availed the benefits of the schemes. These have been done to encourage more companies to adopt international standard into their

firm in a similar manner. Above evidence support, that null hypothesis should get rejected, and accept the alternate hypothesis of the study.

**Table No: 91**

<b>Beneficiaries of Certification and Patenting Scheme, 2003</b>	
<b>Years</b>	<b>Number of Industries</b>
<b>2009-10</b>	07
<b>2011-12</b>	14
<b>2012-13</b>	13
<b>2013-14</b>	25
<b>2014-15</b>	06

Source: As per Data Received from (DITC)

#### **4.5.4 INVESTMENT PROMOTION BOARD (IPB)**

The Investment Promotion Board is the nodal authority for investments in Goa, which meet any/all of the below criteria:

1. Investment upwards of Rs. 5 crore
2. Area requirement equal to or above 3000 sq. meters
3. Classified under the Red or Orange category as per Goa State Pollution Control Board guidelines
4. Investments less than or equal to Rs. 5 crores and not meeting any of the criteria above can approach a devoted subcommittee controlled by the concerned minister in charge to be set up within the Investment Promotion Board that will serve as an organizer for investments of value less than or equal to Rs 5 crore

The goal of the Investment Promotion Board (IPB) is to be associate aspirational investment destination, by creating the business a pleasure, for best in class product manufacturing, knowledge-based, tourism, entertainment and different service industries whereas improving the environmental and social indicators of the state. Similarly, the mission of the (IPB) for economic development includes

1. Environmentally sustainable industrial development need to safeguarded while accelerating investment in the state.

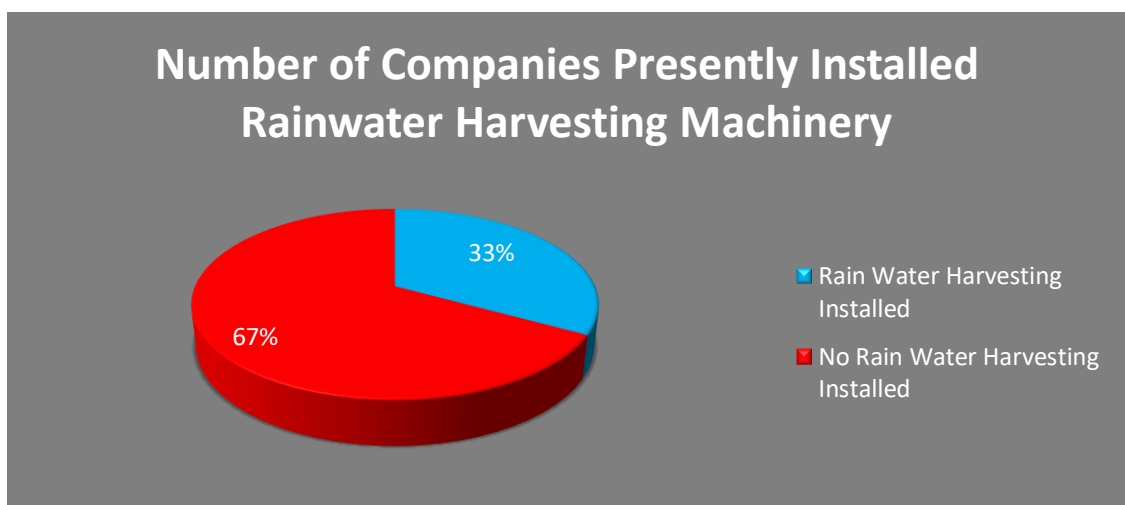
2. The sustainable employment for the public of Goa, without impacting cultural identity.
3. Existing industry in Goa to be competitive.
4. Infrastructure enablers to be available and reliable.
5. Even governance structure that is transparent, seamless and pro-active.

#### 4.5.4.1 Rainwater Harvesting

The IPB proposes to put particular stress on rainwater harvesting by companies, particularly those on plateaus, to safeguard sustainable development in the state. Rainwater harvesting requires making mandated for all industries. The government realizes that, based on the topography of the site of the industrial unit, it may not be practicable for all industrial units to set up rainwater harvesting facilities. Sizeable central rainwater harvesting amenities are planned to be set-up by the government or an entity preferred by it. Units incompetent to meet their obligations of rainwater harvesting will need to build financial contributions towards the set-up, operations & maintenance of this facility in the position of their rainwater harvesting obligations. Units those are unable to build their private rainwater harvesting plant, they need to divert their rainwater to sizeable central rainwater build by the government.

**Chart No: 18**

#### **Companies Installed Rainwater Harvesting Machinery**



Source: Primary Data.

The chart no: 18 shows that current status of the rainwater harvesting mechanism of companies which highlight why the government of Goa wishes to make rainwater harvesting mandatory for all companies. As hardly 33% companies have installed rainwater harvesting mechanism voluntarily, where almost 67% companies failed to install rainwater harvesting machinery. Hence we believe the government has taken the right decision for ensuring sustainable development within the state.

#### **4.5.4.2 Environment-Friendly Incentives**

Goa's beautiful and varied environment has to preserve. Whereas industrial activity is essential for economic development and job creation, the IPB is clear that this will not be at the cost of the environment. Along with specific thrust on encouraging environmentally conscious industry segments, the government is keen to encourage investments by existing and new units in environmentally friendly initiatives asunder.

##### **4.5.4.2.1 Water & Energy Audit**

Reimbursement of 25% of the cost of water and energy audit by a recognized institution/consultant

##### **4.5.4.2.2 Water & Energy Conservation Equipment**

The reimbursement facilities up to 25% of the cost of water and energy conservation equipment, subject to a cap of Rs. 100,000 per unit

##### **4.5.4.2.3 Renewable Energy**

Reduction of 100% in electricity duty for units installing renewable power generation equipment subject to the unit meeting at least 25% of its power requirement from renewable sources.

These incentives of DITC & IPB will undoubtedly attract more industries to adopt environmental friendly measures Like water and energy audit, renewable energy, water & energy conservation equipment, ISO certification. These will help the government to take one more step ahead in conservation and protection of the environmental heritage of Goa.

The above sign highlights that government has taken a right foot forward when it comes to environmental protection and sustainable development but still, there is a long way to go ahead with it how effectively government work and implement on it that has to be looked up. This evidence proves that null hypothesis should get rejected and alternate hypothesis should get accepted of the study.

#### **4.5.5 INSPECTORATE OF FACTORIES AND BOILERS (IFB)**

Till the year 1983, the enforcement of the Factories Act 1948 and the Indian Boilers Act 1923 has administrated by the Factory Inspector functioning underneath the authority of Commissioner Labour and Employment. In the year 1983 Inspectorate of Factories and Boilers was divided from the office of Commission Labour and Employment and established as a special entity with Inspectorate of Factories and Boilers being the capable public authority to enforce the legislation. Afterward with the enactment of Environment (Protection) Act 1986, the power to implement bound provisions underneath the Environment (Protection) Act 1986 vested with the CIF&B.

Goa is currently emerging as a crucial center for studies in industrial safety, occupational health, and pollution control management. The Institute for Safety, Occupational Health, and Environment. Started by the Government of Goa at the cost of about 1.5 crore rupees ( as on March 1994) are a one of the most extraordinary training facility on safety, occupational health, and pollution control, and it is creating a positive contribution to industries in Goa.

The institute that is the only one of its kind in India under the sponsorship of the state government was designed initially to conduct non-academic courses ranging from one day to ten days' time. In recent times the facilities have been upgraded to conduct industry-need, job orientating courses like as post-graduate studies in industrial safety, pollution control technology and occupational health. The institute covers a wide range of topics right from fire-fighting safety, the advanced safety, the industrial safety, & general safety, and even first aid, occupational health, industrial hygiene and so on. The tailor-made programmes, to suit the requirement of individual industries also are undertaken. The beneficiaries comprise industries, both private and public sector undertakings, state government organizations, technical institutions, colleges. The most important objective of

the department is that the implementation and enforcement of the Factories Act, 1948 and the rules thereunder, the Indian Boilers Act 1923, and bound provisions of the Environment (Protection) Act 1986.

#### **4.5.5.1 Training**

Department of Inspectorate of Factories & Boiler within the state of Goa has placed a lot of stress on the implementation of provisions regarding occupational safety health and environment, through the Institute for safety, occupational health, and environment instead of enforcing punitive action. In the field of safety, health, and environment the Inspectorate of Factories and Boiler (IFB) have engendered incredible developments and is the leading state in the country. The training courses in fire-fighting, safety, first-aid, for the organizational, supervisors, and workers are well accepted from the industries and serve to decrease the accidents, render timely support and save lives. The students and lecturers of several colleges and polytechnics undergoing training courses have benefited through receiving inputs on safety, health, and environment. To improve safety on roads, whereas transporting hazardous chemicals, certificate training has held for the drivers in association with the R.T.O office of the state Directorate of Transport. The students are now able to see the demonstration of occupational health & industrial hygiene equipment's and even able to see the operation of the unique mobile occupational health and industrial hygiene laboratories.

#### **4.5.5.2 Courses Offered**

The IFB provides both academic courses as well as non-academic courses for industrial units and other interested parties, towards Health Occupation, Safety, and Environment.

##### **4.5.5.2.1 Academic Courses**

- ✓ Associate Fellow of Industrial Health

##### **4.5.5.2.2 Non-Academic Courses**

- ✓ Five – Day Course Programme in First Aid.
- ✓ Three – Day Course Programme on Safety for Technical Students.

- ✓ Three – Day Course Training in Safety in Transportation of Hazardous Goods by Road for Tanker Drivers.
- ✓ Two – Day Course Programme on Occupational Safety & Health for Nursing Students.
- ✓ One – Day Refresher Course on Safety in Transportation of Hazardous Goods by Road for Tanker Drivers, 1 – Day training in Defensive Driving Skills for Drivers in a team up with ROT.
- ✓ One – Day Educational Course programme on Safety for College Students.
- ✓ In Plant Programme on Safety & Fire Fighting (1 Or 2 Day).
- ✓ Programme on Emergency Preparedness (Community programmes).
- ✓ Publicity Programmes, Including Safety Week.
- ✓ Three – Months Certificate Course on A.F.I.H. for MBBS Doctors affiliated to DGFASLI.
- ✓ One – Day Specialized Course on “OHSAS 18001”.
- ✓ One – Day Special Programme on Safety Audit & Statutory Requirement in Pressure vessels & Lifting Machines.
- ✓ Course on Safety in Operation and Maintenance of Boilers.
- ✓ Storage Handling, and Transportation of Hazardous Chemicals.
- ✓ Course-related to Legislation on Safety & Environment.
- ✓ Noise and Ventilation Course.

#### **4.5.5.3 Admissions Process**

The admission process for academic courses has advertised in the press and applications are invited. The application should send within the prescribed enrolment forms. They are accessible along with the prospectus, at the Institute office, on payment of the prescribed fee. For non-academic courses, those interested must contact the programme officer of the Institute for details of the courses and, consequently, decide their area of interest. The institute will enroll candidates and conduct classes as per the convenience of the industries.

#### **4.5.5.4 Courses/ Training Programme Conducted**

There are altogether five different courses conducted base on a some of the days by IFB. Where details highlighted in table no: 92, as in the year 2012-13 total, 45 different courses



have held were 1210 different participant attended the programme. In the year 2013-14 number of courses conducted is 40 where a some of participants attended were 1144. Whereas in the year 2015-16 total 45 courses were conducted where the highest number of participant attended the programme that is by 1312. All together in five consecutive years, 202 courses had conducted by IFB where 5468 participants participated in the programme.

**Table No: 92**

<b>Number of Courses/ Training Programme Conducted by IFB</b>						
<b>Year From April - March</b>		<b>Programme</b>				
		<b>1 – Day</b>	<b>2 – Day</b>	<b>3 – Day</b>	<b>5 – Day</b>	<b>Total</b>
<b>2012-13</b>	No. of Courses	19	13	03	10	45
	No. of Participant	584	334	65	227	1210
<b>2013-14</b>	No. of Courses	23	08	01	08	40
	No. of Participant	765	212	20	147	1144
<b>2014-15</b>	No. of Courses	30	04	04	05	43
	No. of Participant	724	135	95	79	1033
<b>2015-16</b>	No. of Courses	29	08	05	03	45
	No. of Participant	830	285	149	48	1312
<b>April 2016 to Jan 2017</b>	No. of Courses	11	04	14	Nil	29
	No. of Participant	327	94	348	Nil	769
<b>Grand Total</b>	No. of Courses	112	37	27	26	202
	No. of Participant	3230	1060	677	501	5468

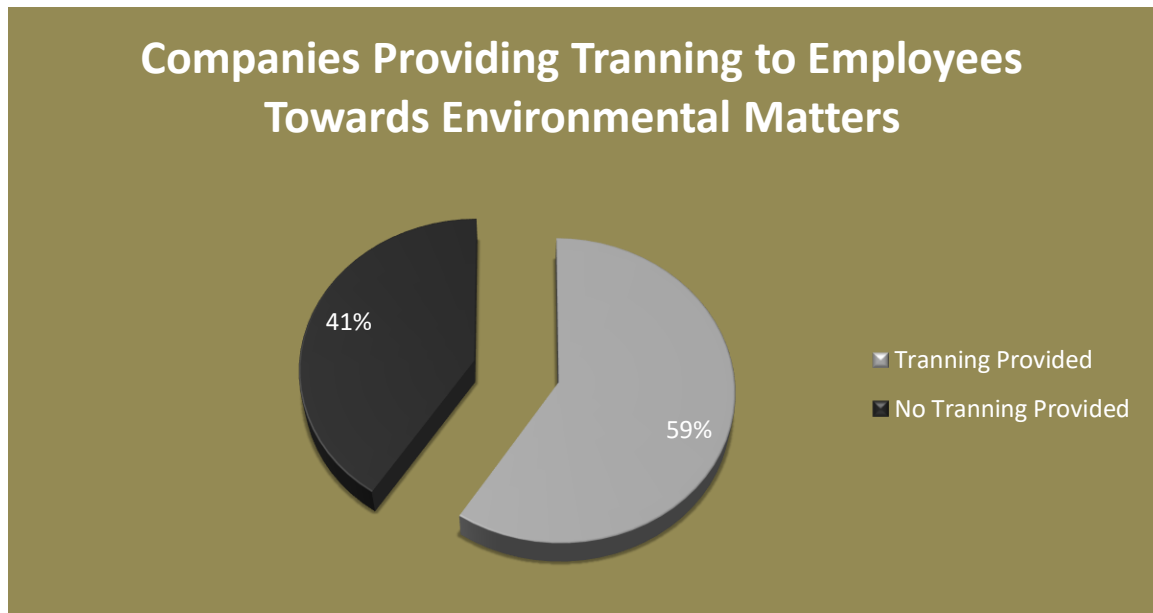
Source: As per Data Received from Inspectorate of Factories and Boilers.

#### 4.5.5.5 Companies Providing Employees Training and Education Towards Environmental Matters.

The Pie chart no: 19 gives clear pictures that almost 60 % of companies do provide the training to their employee towards environmental matters. Which highlights not only companies will for sustainable environmental development. These also highlight work that has done by Inspectorate of Factory and Boiler. How much they are concern about providing training to employees related to environmental matters for sustainable development.

**Chart No: 19**

**Companies Providing Training to Employees towards Environmental Matters**



Source: Primary Data.

Certainly, Inspectorate of Factory and Boiler is doing well in terms number of training and courses conducted by them every year. Towards safety, occupational health, and environment for industries, state government Institutions, technical institutes, colleges. They also adopt the rule “Precaution is Better than Cure” that highlights their attitude towards safety and environmental protection. Even though there is no special course governed towards pollution control & environmental protection, they have clubbed environment topic into occupation health and safety. This evidence suggests that null hypothesis should get rejected and accept the alternate hypothesis of the study.

#### **4.5.6 THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE (MOEFCC)**

The Ministry of Environment, Forest and Climate Change (MOEFCC) is that the nodal agency within the administrative structure of the central government for the planning, promotion, coordination, and supervision the enforcement of India's environmental and forestry policies and programmes.

The primary issues of the ministry are the enforcement of policies and programmes linking to the conservation of the country's natural resources that including its lakes and rivers, its biodiversity, forests, and wildlife, safeguarding the welfare of animals, and the prevention and reduction of pollution. Whereas implementing these policies and programmes, the ministry has guided by the principle of sustainable development and enrichment of human well-being.

The ministry additionally serves as the nodal agency within the country for the United Nations Environment Programme (UNEP), South Asia Co-operative Environment Programme (SACEP), and International Centre for Integrated Mountain Development (ICIMOD) for the follow-up of the United Nations Conference on Environment and Development (UNCED). The ministry additionally entrusted with issues linking to multilateral bodies such as the Commission on Sustainable Development (CSD), Global Environment Facility (GEF). Moreover, of regional bodies like South Asian Association for Regional Co-operation (SAARC) and Economic and Social Council for Asia and Pacific (ESCAP) on problems relating to the environment.

The broad objectives of the Ministry are:

1. Conservation and survey of flora, fauna, wildlife, and forests
2. Control and Prevention of pollution
3. Afforestation and rejuvenation of degraded areas
4. Protection of environment and
5. Safeguarding the welfare of animals

These above objectives are well-supported by a group of legislative and regulatory measures, aimed toward the preservation, conservation, and protection of the environment. Apart from the legislative account, The National Conservation Strategy and Policy Statement on Environment and Development 1992, Policy Statement on Abatement of Pollution 1992, National Forest Policy 1988, and The National Environment Policy 2006, also guide the ministry's work.

#### 4.5.6.1 National Award

The Government of India in the Ministry of Environment and Forests on the 26<sup>th</sup> August 1992. The central government had set to institute a scheme of "National Awards" to inspire industries and operations to adopt essential steps for prevention of pollution and choose a lot of cleaner technology into their everyday activities for the protection of the environment.

##### 4.5.6.1.1 National Award for Prevention of Pollution

**Table No: 93**

<b>National Award for Prevention of Pollution by MOEFCC</b>											
<b>Sr.no</b>	<b>Category</b>	<b>Descriptions</b>									
1.	Name of Award	National Award for Prevention of Pollution.									
2.	Division Dealing with the Award	Control of Pollution Division.									
3.	Year when the award had instituted	1992.									
4.	Number of Categories in which the award has given	Awards numbering up to eighteen (18) are provided each year, one award in each of the identified category of highly polluting industries. These industries have identified as: <table border="1"> <tbody> <tr> <td>1. Sugar</td> <td>2. Fertilizer</td> <td>3. Cement</td> </tr> <tr> <td>4. Fermentation and Distillery</td> <td>5. Aluminium</td> <td>6. Petro-Chemicals</td> </tr> <tr> <td>7. Thermal Power</td> <td>8. Caustic Soda</td> <td>9. Oil Refinery</td> </tr> </tbody> </table>	1. Sugar	2. Fertilizer	3. Cement	4. Fermentation and Distillery	5. Aluminium	6. Petro-Chemicals	7. Thermal Power	8. Caustic Soda	9. Oil Refinery
1. Sugar	2. Fertilizer	3. Cement									
4. Fermentation and Distillery	5. Aluminium	6. Petro-Chemicals									
7. Thermal Power	8. Caustic Soda	9. Oil Refinery									

		<table border="1"> <tr> <td>10. Sulphuric Acid</td> <td>11. Tanneries</td> <td>12. Copper Smelting</td> </tr> <tr> <td>13. Zinc Smelting</td> <td>14. Iron and Steel</td> <td>15. Pulp and Paper</td> </tr> <tr> <td>16. Dye and Dye Intermediates</td> <td>17. Pesticides</td> <td>18. Pharmaceuticals</td> </tr> </table> <p>Awards numbering up to five (5) will be given each year to small-scale industries in the following categories:</p> <table border="1"> <tr> <td>1. Tanneries</td> <td>2. Pulp and Paper</td> </tr> <tr> <td>3. Dye and Dye Intermediates</td> <td>4. Pesticides</td> </tr> <tr> <td>5. Pharmaceuticals</td> <td></td> </tr> </table>	10. Sulphuric Acid	11. Tanneries	12. Copper Smelting	13. Zinc Smelting	14. Iron and Steel	15. Pulp and Paper	16. Dye and Dye Intermediates	17. Pesticides	18. Pharmaceuticals	1. Tanneries	2. Pulp and Paper	3. Dye and Dye Intermediates	4. Pesticides	5. Pharmaceuticals	
10. Sulphuric Acid	11. Tanneries	12. Copper Smelting															
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1. Tanneries	2. Pulp and Paper																
3. Dye and Dye Intermediates	4. Pesticides																
5. Pharmaceuticals																	
5.	Eligibility Criteria	<ol style="list-style-type: none"> <li>1. Success in defining environmental pollution needs meeting pollution prevention goals and overall improvements to the quality of air, water, and land.</li> <li>2. The soundness of approach, scientific design, and cost-effectiveness.</li> <li>3. Abatement including reduction, reuse, recycling or any beneficial use of waste generated, substantial and steady reduction in the effluents and emissions in the year.</li> <li>4. Reduction of risk to the community living in the locality of the company handling hazardous chemicals.</li> <li>5. Any other identifiable specific and significant contribution towards the manufacture of environmentally friendly products and development and use of environmentally sound technologies.</li> </ol>															
6.	Contents of the Award	<ol style="list-style-type: none"> <li>1. A Trophy</li> <li>2. A Citation</li> <li>3. Rupees One Lakh</li> </ol>															
7.	The periodicity of the award	Annual.															

Source: Based on (MOEFCC) Official Website.

The award name as National Award for Prevention of Pollution, department control of pollution deals with it. The award has given to eighteen different identified category of highly polluting industries each year, and five different awards have given to small-scale industries. Where in the year 1992 award had instituted, the eligibility criteria have discussed in table no: 93 in details. The award comprises of a trophy, citation, rupees one lakh which is given by MOEFCC.

#### 4.5.6.1.2 Rajiv Gandhi Environmental Award for Clean Technology

**Table No: 94**

<b>Rajiv Gandhi Environmental Award for Clean Technology MOEFCC</b>																				
<b>Sr.no</b>	<b>Category</b>	<b>Descriptions</b>																		
1.	Name of Award	Rajiv Gandhi Environmental Award for Clean Technology.																		
2.	Division Dealing with the Award	Control of Clean Technology Division.																		
3.	Year when the award had instituted	1992.																		
4.	Number of Categories in which the award has given	<p>Awards numbering up to eighteen (18) are provided each year, one award in each of the identified category of highly polluting industries. These industries have identified as:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>1. Sugar</td> <td>2. Fertilizer</td> <td>3. Cement</td> </tr> <tr> <td>4. Fermentation and Distillery</td> <td>5. Aluminium</td> <td>6. Petro-Chemicals</td> </tr> <tr> <td>7. Thermal Power</td> <td>8. Caustic Soda</td> <td>9. Oil Refinery</td> </tr> <tr> <td>10. Sulphuric Acid</td> <td>11. Tanneries</td> <td>12. Copper Smelting</td> </tr> <tr> <td>13. Zinc Smelting</td> <td>14. Iron and Steel</td> <td>15. Pulp and Paper</td> </tr> <tr> <td>16. Dye and Dye Intermediates</td> <td>17. Pesticides</td> <td>18. Pharmaceuticals</td> </tr> </tbody> </table> <p>Awards numbering up to five (5) will be given each year to small-scale industries in the following categories:</p>	1. Sugar	2. Fertilizer	3. Cement	4. Fermentation and Distillery	5. Aluminium	6. Petro-Chemicals	7. Thermal Power	8. Caustic Soda	9. Oil Refinery	10. Sulphuric Acid	11. Tanneries	12. Copper Smelting	13. Zinc Smelting	14. Iron and Steel	15. Pulp and Paper	16. Dye and Dye Intermediates	17. Pesticides	18. Pharmaceuticals
1. Sugar	2. Fertilizer	3. Cement																		
4. Fermentation and Distillery	5. Aluminium	6. Petro-Chemicals																		
7. Thermal Power	8. Caustic Soda	9. Oil Refinery																		
10. Sulphuric Acid	11. Tanneries	12. Copper Smelting																		
13. Zinc Smelting	14. Iron and Steel	15. Pulp and Paper																		
16. Dye and Dye Intermediates	17. Pesticides	18. Pharmaceuticals																		

		1. Tanneries	2. Pulp and Paper
		3. Dye and Dye Intermediates	4. Pesticides
		5. Pharmaceuticals	
5.	Eligibility Criteria	<ol style="list-style-type: none"> <li>1. Pollution prevention aims at improving the quality of water, similarly soil, and air through conservation of Mother natural, natural resources and by preventing the generation of pollutants through feasible and cost-effective measures.</li> <li>2. The activities can include new technologies that save energy or other resources, product reformulation or substitution to use fewer polluting materials, and modified or new processes which reduce pollution.</li> </ol>	
6.	Contents of the Award	<ol style="list-style-type: none"> <li>1. A Trophy</li> <li>2. A Citation</li> <li>3. Rupees Two Lakh</li> </ol>	
7.	The periodicity of the award	Annual.	

Source: Based on (MOEFCC) Official Website.

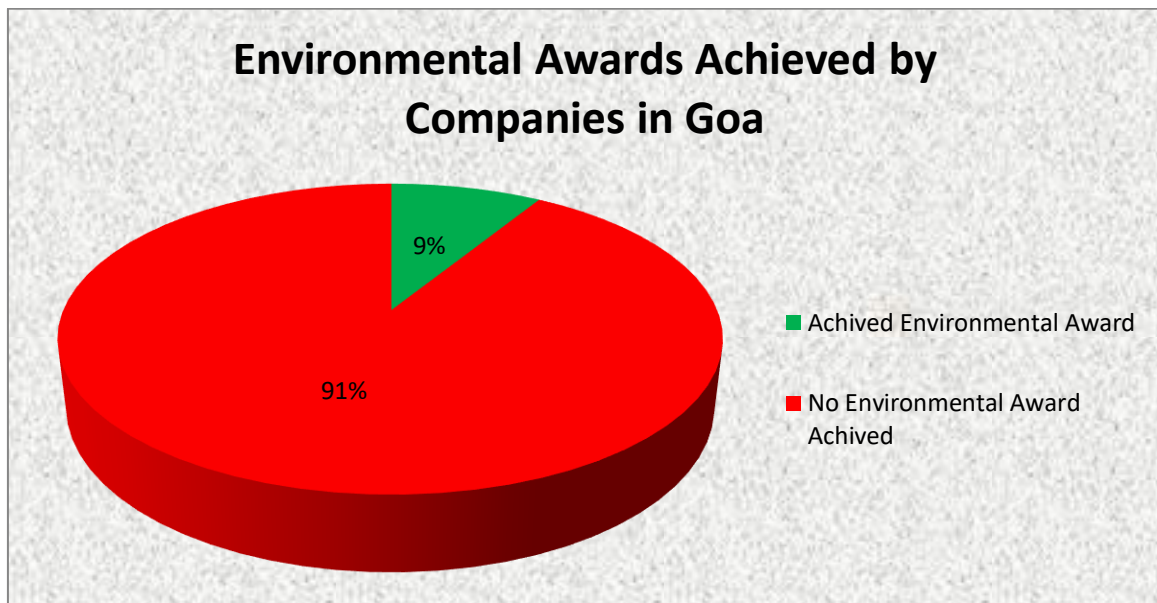
The award name as Rajiv Gandhi Environmental Award for Clean Technology, department control of clean technology division deals with it. The award has given to eighteen different identified category of highly polluting industries each year, and five different awards have given to small-scale industries. Where in the year 1992 award had instituted, the eligibility criteria have discussed in table no: 94 in details. The award comprises of a trophy, citation, rupees two lakh which is given by MOEFCC.

#### **4.5.6.2 Environmental Awards Achieved by Companies in Goa.**

The Pie chart no: 20 displays the number of companies has been putting their efforts in adoption of environmentally friendly technology, process, and measures taken towards pollution control. Even the portion of environmental award achieved is bound to be less as the award awarded to only one of the best companies. Still, the percentage of companies was expected in 20 to 30 % range and not within 10% as they were told to mention details of companies' whole life span if they had received any environmental award.

**Chart No: 20**

**Environmental Awards Achieved by Companies in Goa**



Source: Primary Data.

These highlights that Ministry of Environmental and Forest of India also have taken measures in boosting those companies which are adopting pollution control measures and technology, as well as attacking or showing the path to those companies which are lacking behind regarding environmental protection and conservation process. MOEFCC is also governing the various rules and regulation related to the environment. This evidence support that null hypothesis should get rejected and accept the alternate hypothesis of the study.

**4.5.7 SUMMARY OF INTERPRETATION**

The analysis reviles that role performed by Goa State Pollution Control Board (GSPCB) is equivalent to expectation, as they have managed to regulate all the activities, right from providing environmental clearances certification, imposing various laws, monitoring the various laws, levying fines and penalties against violation of various environmental laws and regulation. They also performed well as per role granted by Government of Goa and Government of India. As this evidences supported in rejecting the null hypothesis and accepting the alternate hypothesis



Analysis reveals the role played by Directorate of Industries Trade and Commerce (DTIC) is equivalent to expectation, as they have managed to register industries under various laws. They are also providing various schemes related to environmental management system adoption through ISO certification like ISO 14001, where reimbursement has done off the cost incurred for the adoption of ISO certification. This evidence also supports in rejecting the null hypothesis and accepting the alternate hypothesis of the study.

Study reveals the role played by Inspectorate of Factory and Boiler (IFB) is equivalent to expectation, as they have managed to implement various laws and regulation. They are also doing excellent work regarding, providing academic as well as non-academic courses and training to industries worker and employees toward occupation safety health and environment. This evidence also supports firmly in rejecting the null hypothesis and accepting the alternative hypothesis of the study.

Examination reveals the role performed by Ministry of Environment, Forest and Climate Change (MOEFCC) are managing almost all the activities all over India right from registration of industries, providing environmental clearances certification, enforcing various environmental laws, and regulation. Monitoring various laws implemented, levying fines and penalties to those companies failed in compliances with various laws. Also supporting and encouraging companies those have outperformed in environmental activities of their units through granting schemes and awards for becoming environmental – friendly companies. These are substantial evidence those are also supporting to rejecting the null hypothesis and accepting the alternate hypothesis of the study.

Based on above research evidence, the following results can put forward. As almost all the factors selected for the study support in rejecting the null hypothesis and accepting the alternate hypothesis of the study. Hence the null hypothesis is rejected and accepted the alternate hypothesis of the research study, which says there is a significant role of government towards sustainable environmental development in business enterprises in Goa.

#### **4.5.8 INFERENCE**

The investigation shows the role played by the different government institution of our country regarding environmental protection conservation and sustainable development. Though right from registration of industries, providing environmental clearances certification, enforcing various environmental laws, and regulation. Tracking on companies to see how well they have implemented laws, as well as taking legal action. Levying fines and penalties to those companies failed in compliances with various laws. Also supporting and encouraging companies those have outperformed in environmental activities of their units through granting schemes and awards for becoming environmental – friendly companies. As well as providing training to employees of the various company with matters like environmental, safety, occupation, and health.

Goa State Pollution Control Board (GSPCB) plays the role of providing environmental clearances certification, imposing various laws, monitoring the various laws, levying fines and penalties against violation of various environmental laws and regulation. Even though GSPCB have been working well on the role which they have provided as per the Goa State Government and Government of India, there are many steps could have been taken by GSPCB for further supporting environmental protection and sustainable development. Independent air and water monitoring committee should have been set in every industrial estate separately in the state of Goa. That would have given the fair picture of which Industrial estate is doing well regarding controlling pollution as compared to another industrial estate. Further research could have conducted. Why that particular industrial estate is performing well. A similar result could have been implemented by the other industrial estate as well. Similarly base on the best environmental practices adopted by those companies that have achieved by best environmental practices awardees. All such practices should have been listed out have been given exposure through reporting to all other companies, they should have given a time frame to implement such best environmental practice, as well as provided some grant or benefits to attract more companies to implement such best environmental practices.

Directorate of Industries and Trade and Commerce (DITC) play the role of right from registration of industries, categorizing them bases of their working areas Like Red, Orange, Green categories of industries. Also supporting and encouraging companies those

have outperformed in environmental activities through granting schemes. Even though, (DITIC) have performed well in the role which they have provided by the Government of Goa and Government of India. Still, they could have worked out on the specialized environmental schemes. Similar to what they have (Goa State Financial Incentives to the Industries/Companies for Certification and Patenting Scheme, 2003) where they provide reimbursement. Specialized environmental – friendly scheme could have developed like companies those adopt ISO 14001 or even adopt environmental friendly technology installed should have given reimbursement, particular focus point should have been on Orange and Red categories companies implementing it. Similarly, special schemes should have formulated on renewable energy for attracting more industries for the adoption of renewable energy like solar, wind, tidal, biofuel, geothermal.

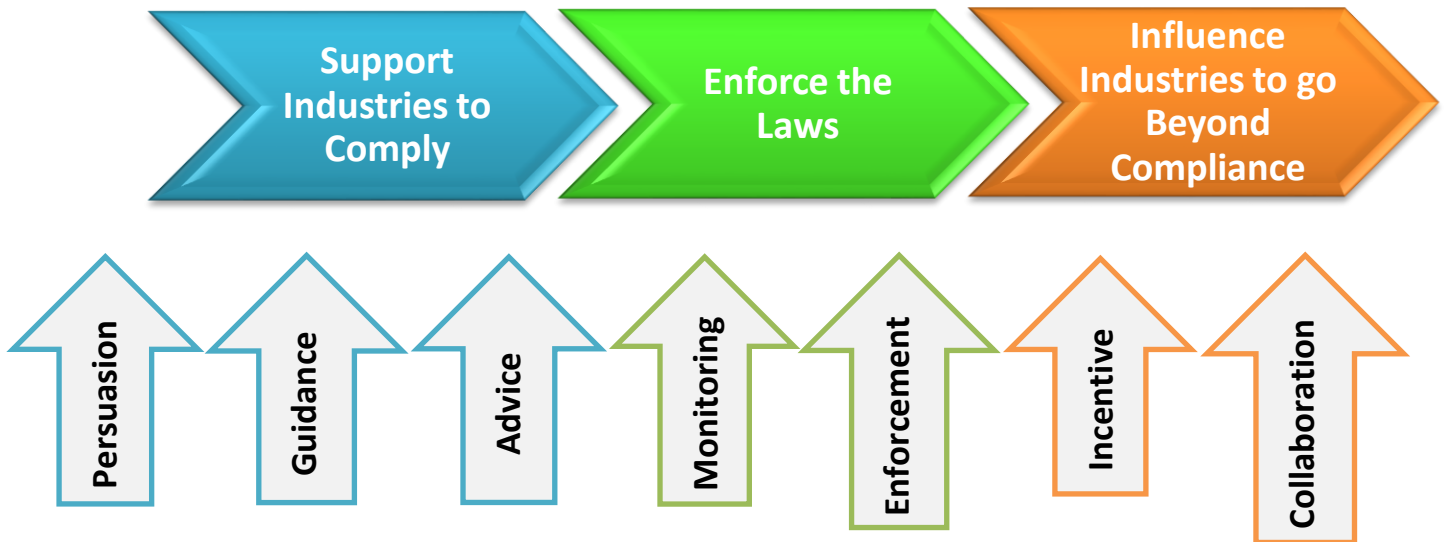
Inspectorate of Factories and Boilers (IFB) plays the role of implementation of various laws, as well as inspection of factories and boiler regularly, also provide academic as well as non-academic courses and training to employees of the various companies with matters like environmental, safety, occupation, and health. Even though, (IFB) has performed his role well that is provided by Governmental of Goa and Government of India. Still, improvement could have done on non-academic courses as there is no specialized course towards environmental pollution control, conservation, and adoption of non-renewable and renewable resource, highlighting the vital role of environment in the survival of human–being. Even the two-day, three-day and five-day course should have conducted more as compared to the one-day course. The course should have been made mandatory for companies falling under Orange and Red categories, every five years this course should have been made compulsory.

Ministry of Environment, Forest and Climate Change (MOEFCC) Played a crucial role right from registration of industries, providing environmental clearances certification, enforcing various environmental laws, and regulation. Implementation of laws, legal action, levying fines and penalties to those companies failed in compliances with various laws. Also supporting and encouraging companies those have outperformed in environmental activities of their units through granting schemes and awards for becoming environmental – friendly companies. Even though they are performing their role well that is provided by the government of India, there is ample scope for improvement that also has witnessed through results. For example, the specialized committee should have formed

which will look after schemes; environmental awards should have granted to each state of those companies those are outperforming in environmental activities.

**Chart No: 21**

**Model Showing Role Played by Government towards Sustainable Environmental Development in Business Enterprises of Goa**



Source: Developed.

**4.6 PRE AND POST EFFECTS OF COMPANIES ACT, 2013 (CORPORATE SOCIAL RESPONSIBILITY) POLICY RULES 2014.**

To find information regarding pre & post effect of Companies Act 2013. The period of the study has considered from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2016, four years. Were, the study will start from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2014 with regards to pre-effect. Information regarding post effect has been collected from 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016, As companies (Corporate Social Responsibility) Policy Rules. 2014 has come into force on the 1st day of April 2014 onwards. This period will give fair justices to both the side of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices. Help us to draw accurate analysis & conclusion on it.

#### **4.6.1 HYPOTHESIS:**

6. **H<sub>0</sub>:** There is no positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

##### Factors:

- Pre Effect
- Post Effect

##### Variables:

- Corporate Social Responsibility Committee formed before or newly formed to meet the requirement of new Company Act 2013.
- Number of Directors consisting of the Committee
- Percentage of Profit being spend towards Environmental Activities
- The amount of Capital Investment / Expenditure Company spends in every financial year towards Environmental Equipment and Facilities.
- What bases the amount allotted is calculated by companies
- On what bases the Director's report / Annual report has prepared

#### **4.6.2 CORPORATE SOCIAL RESPONSIBILITY COMMITTEE FORMED BEFORE OR NEWLY FORMED TO MEET THE REQUIREMENT OF NEW COMPANY ACT 2013.**

Almost 56.31% of companies have framed corporate social responsibility committee. That is a positive sign that says most of the companies looking positively towards building sustainable development. Where base on nationality it could be observed that there are no significant differences between Indian and foreign companies when it comes to having independent CSR committee, even though slightly more foreign companies have CSR committee as compare to Indian companies. These statements have further supported by Chi-square test as P-value has come to 0.080 that is more than 95% confidences value of 0.05 ( $0.080 > 0.05$ ) that can observe from table no: 95. These show that there are no significant differences between Indian and foreign companies when it comes to having a

CSR committee. That also highlights that there is no discrimination has been done by both foreign and Indian companies when it comes to implementing independent CSR committee into their business organization.

**Table No: 95**

<b>Companies Having Independent CSR Committee</b>										
Group-Based On		Independent CSR Committee		No CSR Committee		Number of Companies		Pearson Chi-Square Test		Result
								Value (X <sup>2</sup> )	Significant ( P – Value)	
Nationality	Indian	42	51.85	39	48.15	81	100	3.065	0.080	No Significant Differences in preference as ( P > 0.05 )
	Foreign	16	72.73	6	27.27	22	100			
	Total	58	56.31	45	43.69	103	100			
Ownership	Public	36	78.26	10	21.74	46	100	16.279	0.000	Significant Differences in Preference as ( P < 0.05 )
	Private	22	38.60	35	61.40	57	100			
	Total	58	56.31	45	43.69	103	100			
Size	Large	44	72.13	17	27.87	61	100	15.219	0.000	Significant Differences in Preference as ( P < 0.05 )
	Medium	14	33.33	28	66.67	42	100			
	Total	58	56.31	45	43.69	103	100			

Source: Primary Data. (At 95% Confidences Level)

Whereas group based on ownership shows, there is a significant difference between public and private companies when it comes to having independent CSR committee. Because the variation of 39.66% could witness between them in implementing CSR committee, Similar Chi-square test shows the similar result as P-value has come to 0.000 that is less than 95% confidences level value of 0.05 (0.000 < 0.05). These say that there is a significant difference between private and public companies when it comes to having a CSR

committee. Were it could witness that public companies seen to be dominating in have independent CSR committee as compared to the private companies.

Similarly, group-based on size shows significant differences between large and medium companies when it comes to having an independent CSR committee, as a huge variation of 38.85% could observe between them. Where Chi-square test also supports the statement as P-value has come to 0.000, that is less than 95% confidences value of 0.05 ( $0.000 < 0.05$ ). These say that there is a significant difference when it comes to having an independent CSR committee between large and medium companies. Were it could observe that most of the medium size companies had ignored the implementation of independent CSR committee into their organization as compared to the large size companies.

Group-Based on nationality shows the result when it comes to implementation of CSR committee there are no significant differences between foreign and Indian companies. When it comes to identification of CSR committee in which particular year it was formed, it had observed that those companies which say that they have independent CSR committee out of those hardly 35.71% of Indian companies had framed committee before Company Act 2013 came into force. Were other 64.29% of Indian companies had framed CSR committee after the enforcement of Company Act 2013 that is within two years 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016 that can observe from table no: 96. This support that there is a positive effect of Company Act 2013 in the implementation of CSR committee into their organization.

Group-based on ownership shows a result that there is a significant difference between public and private companies when it comes to implementation of CSR committee meanwhile public companies found having upper hand as compared to the private. However, when it comes to identification of CSR committee in which particular year it was framed both sectors found to be going neck to neck as hardly 50 and 40.91% of public and private companies respective had framed committee before Company Act 2013 came into force. Were other 50 and 59.09% of public and private companies had framed CSR committee after the enforcement of Company Act 2013 that is within two years 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016. This support that there is a positive effect of Company Act 2013 in the implementation of CSR committee into their organization.

**Table No: 96**

<b>CSR Committee formed before or newly created</b>										
<b>Group-Based On</b>	<b>Before Company Act 2013</b>				<b>After Company Act 2013</b>				<b>Number of Companies</b>	
	Before Financial Year 1st April 2013 to 31st March 2014		In Financial Year 1st April 2013 to 31st March 2014		In Financial Year 1st April 2014 to 31st March 2015		In Financial Year 1st April 2015 to 31st March 2016			
<b>Nationality</b>	F	%	F	%	F	%	F	%	F	%
Indian	12	28.57	3	7.14	22	52.38	5	11.91	42	100
Foreign	12	75	-	-	4	25	-	-	16	100
<b>Total</b>	<b>24</b>	<b>41.38</b>	<b>3</b>	<b>5.17</b>	<b>26</b>	<b>44.83</b>	<b>5</b>	<b>8.62</b>	<b>58</b>	<b>100</b>
<b>Ownership</b>										
Public	17	47.22	1	2.78	16	44.44	2	5.56	36	100
Private	7	31.82	2	9.09	10	45.45	3	13.64	22	100
<b>Total</b>	<b>24</b>	<b>41.38</b>	<b>3</b>	<b>5.17</b>	<b>26</b>	<b>44.83</b>	<b>5</b>	<b>8.62</b>	<b>58</b>	<b>100</b>
<b>Size</b>										
Large	16	36.36	3	6.82	23	52.27	2	4.55	44	100
Medium	8	57.14	-	-	3	21.43	3	21.43	14	100
<b>Total</b>	<b>24</b>	<b>41.38</b>	<b>3</b>	<b>5.17</b>	<b>26</b>	<b>44.83</b>	<b>5</b>	<b>8.62</b>	<b>58</b>	<b>100</b>
<b>Clubbed Percentage</b>	46.55%				53.45%				100%	

Source: Primary Data.

Similarly, group-based on the size of the company shows a result that there is a significant difference between large and medium companies when it comes to implementation of independent CSR committee, were large companies found having upper hand as compared to the medium size companies. However, when it comes to identification of CSR committee in which particular year it was framed, both sectors found to be going neck to neck as 43.18, and 57.14% of large and medium companies respectively had framed committee before Company Act 2013 came into force. Were other 56.82 and 42.86% of large and medium companies had framed CSR committee after the enforcement of Company Act 2013 that is within two years 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016. This support that there is a positive effect of company Act 2013 in the implementation of CSR committee into their organization.

The clubbed percentage provide further evidence that before enforcement of Company Act 2013 hardly 46.55% of companies overall had framed CSR committee that too in so many years cumulatively. However, after enforcement of Company act 2013, the percentage of



implementing CSR committee has not only risen to 53.45%, but it has surpassed the few decade percentages within two consecutive years that is 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016. These highlights that corporate social responsibility committee has been newly formed by most of the companies to meet the requirement of new Company Act 2013. This above evidence firmly supports in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.3 DIRECTORS CONSISTING IN COMMITTEE**

There was no specification about the company having independent CSR committee neither there was any specification about numbers of directors should consist of the CSR committee before the Company Act 2013. Hence, the proportion of one and two directors seen to be higher in the before financial year 1<sup>st</sup> April to 2012 to 31<sup>st</sup> March 2013 that 39.66% & 41.38% respectively that indicate most of the companies those had CSR committee comprise of one or two directors. Were as on other-side hardly very few percentages of companies had three, four, five, six and above directors. Similarly, in financial year 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2013 the proportion of one and two directors comprising CSR committee is 32.76% & 48.28% respectively, Whereas on other-side hardly few percentages of companies had three, four, five, six and above directors that can witness through table no: 97.

In financial year 1<sup>st</sup> April 2013 to 31<sup>st</sup> March 2014, it could be seen slight change were those companies having two directors had shifted to three directors, As the decrease in the percentage of two directors can observe. Similarly, fall in the percentage of one director also could be witnessed but, it is not huge in the ratio as compared to two director's percentage ratio. This Shift might look like it has occurred before enforcement of Company Act 2013. However, this shift could be because of awareness of Company Act 2013, which companies' might knew that it would get enforces on them to do the same if they do not do voluntarily from next financial year onwards.

**Table No: 97**

<b>Number of Directors Comprising in CSR Committee in Particular Financial Year</b>														
Financial Years	One Director in Committee		Two Directors in Committee		Three Directors in Committee		Four Directors in Committee		Five Directors in Committee		Six & Above Directors in Committee		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Before Financial Year 1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013	23	39.66	24	41.38	4	6.90	1	1.72	1	1.72	5	8.62	58	100
In 1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013	19	32.76	28	48.28	4	6.90	1	1.72	1	1.72	5	8.62	58	100
1 <sup>st</sup> April 2013 to 31 <sup>st</sup> March 2014	10	17.24	4	6.90	28	48.28	8	13.79	1	1.72	7	12.07	58	100
1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2015	5	8.62	4	6.90	20	34.48	20	34.48	2	3.45	7	12.07	58	100
1 <sup>st</sup> April 2015 to 31 <sup>st</sup> March 2016	2	3.45	2	3.45	24	41.38	15	25.86	8	13.79	7	12.07	58	100

Source: Primary Data.

In financial year 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2015, it could observe that companies had made the apparent shift from one or two directors preferences. Because as per Company Act 2013 enforcement were it has said that corporate social responsibility committee of the board consisting of three or more directors, out of that at least one director has to be an independent director. Similarly, the percentage of companies having CSR committee with three and four was highest with 34.48% & 34.48% respectively in this financial year, and also the percentage of six and more directors was also seen to increase.

Similarly in financial year 1<sup>st</sup> April 2015 to 31<sup>st</sup> March 2016 after clear-cut direction towards numbers of directors a CSR committee should have, specified in company Act 2013. The percentage of companies is presently having one and two directors come down drastically to less than 5%. Whereas on the other-side percentage of three, four, five and six and above directors has increased to 41.38%, 25.86%, 13.79, 12.07% respectively. After enforcement as compared to the before enforcement of Company Act 2013, this

above analysis through the light that most of the companies those have CSR committee into place in their organization. Those companies recently have increased the number of directors into their CSR committee to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.4 PERCENTAGE OF PROFIT BEING SPEND TOWARDS ENVIRONMENTAL ACTIVITIES**

To analysis, the differences in the percentage of profit spent by companies in prior and after Company Act 2013 towards environmental activities. The test of normality was run to identify whether data is normally distributed or not normally distributed. So based on that which test is suitable for data could be determined with the help of it, either parametric test or non-parametric test to be used for analysis.

For that purpose, two different normality that is Kolmogorov-Smirnov and Shapiro-Wilk Test have been run on sample data before to identify whether sample data is normally distributed or not normally distributed. Where Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test rejects the null hypothesis that says sample data is normally distributed and accept the alternate hypothesis that says sample data has not normally distributed. As P-value of both the pre and post financial years is less than confidences level of 95% (0.05), that has come 0.000 & 0.000 of pre and post respectively, which is less than 0.05 ( $0.000 & 0.000 < 0.05$ ) that can discover from table no: 98. Hence, the non-parametric test is used to compare the percentage of profit spent by companies in prior, and after the Company Act, 2013 had introduced towards environmental activities.

As data is not normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) Normality Test, hence we have used Wilcoxon Signed Rank Test, which is a non-parametric test. To study the percentage of profit spent by companies towards environmental activities in prior and after the Company Act, 2013 had introduced.

**Table No: 98**

<b>K-S and S-W Test for Percentage of Profit spend towards Environmental Activities</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.350	82	0.000	0.350	82	0.000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.221	82	0.000	0.658	82	0.000

Source: Primary Data. (At 95% Confidences Level)

Where mean shows that percentage of profit being spend by the companies every financial year prior Company Act 2013 was on an average close to one percent, as the mean value has come to 1.1418 that can observe from table no: 99. Whereas the percentage of profit spent towards environmental activities has increased by 0.6762 and it has reached close to two percent because the mean value has come to 1.8180 after the Company Act 2013 had enforced. Similarly median has come 1.0000 in the financial year before Company Act 2013 enforcement that has come less than after enforcement financial year were median has come to 1.7500 which is higher by 0.7500 than a financial year before the introduction of Company Act 2013.

**Table No: 99**

<b>Wilcoxon Signed Rank Test for Percentage of Profit Spend Towards Environmental Activities in Pre and Post Period</b>								
Financial Years		N	Mean	Median	Range	Std. Deviation	Wilcoxon Signed Ranks Test	P-Value
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	82	1.1418	1.0000	14.90	1.69397	Z = - 6.307	0.0000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	83	1.8180	1.7500	12.35	1.55171		

Source: Primary Data. (At 95% Confidences Level)

Where Wilcoxon Signed Rank Test also support the evidence that there is a significant difference in the percentage of profit spent by companies in pre and post financial years, as P-value of has come to 0.0000 that is less than 95% confidences level of 0.05 ( $0.0000 < 0.05$ ). These above evidence highlight that most of the companies those have CSR committee into place in their organization, those companies recently have increased the percentage of profit being spend towards environmental activities from one percent to two percent to meet the requirement of new Company Act 2013. That says any company which is fall in the bracket of Companies (Corporate Social Responsibility) Policy Rules, 2014 has to spend at least two percent of the profit of their average net profit for last three financial years on CSR activities. Hence, these above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.5 THE AMOUNT OF CAPITAL INVESTMENT/ EXPENDITURE COMPANY SPENDS IN EVERY FINANCIAL YEAR TOWARDS ENVIRONMENTAL EQUIPMENT AND FACILITIES.**

To analysis amount spends as capital investment/expenditure towards environmental equipment six variables have identified in which companies were investing prior and after the Company Act 2013 as follows:

1. Energy Conservation
2. Improved material and other-resource handling
3. Recycling of waste material and water
4. Time to time repairs & maintenances
5. Research and Development
6. Other Control Measure

Before analysis said outcome to identify which test will be best suitable either parametric or non-parametric tests for each variable that will generate the effective outcome. For that purpose, two different normality tests that are Kolmogorov-Smirnov and Shapiro-Wilk

have been run on sample data before to identify whether sample data has normally distributed or not normally distributed.

#### 4.6.5.1 Energy Conservation

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test rejects the null hypothesis that says sample data is normally distributed and accept the alternate hypothesis that says sample data has not normally distributed. As P-value of both the pre and post financial years is less than confidences level of 95% (0.05), that has come 0.000 & 0.000 of pre and post respectively, which is less than 0.05 (0.000 & 0.000 < 0.05) that can scrutinize in table no: 100. Hence, the non-parametric test is used to compare capital investment/expenditure made towards energy conservation.

**Table No: 100**

<b>K-S and S-W Test for Energy Conservation</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.275	28	0.000	0.678	28	0.000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.309	28	0.000	0.788	28	0.000

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, Hence we have used Wilcoxon Signed Rank Test, which is a non-parametric test, to study capital investment/expenditure made towards energy conservation by companies in prior and after the Company Act, 2013 had enforced.

As P-value has come to 0.0001 as per the Wilcoxon Signed ranks test that is less than 95% confidences level of 0.05 (0.0001 < 0.05) that can witness in table no: 101. That says there is a significant difference in investment pattern towards energy conservation by companies in financial year prior and after Company Act 2013 had enforced. Where mean outcome support the statement because the mean of pre Company Act 2013 financial years has come to 4.3761 which is less than post Company Act 2013 financial year that has come to

6.4123, this indicates that companies have been investing much more in energy conservation after the introduction of Company Act 2013.

**Table No: 101**

<b>Wilcoxon Signed Rank Test for Percentage of Profit Spend Towards Energy Conservation in Pre and Post Period</b>									
Financial Years		N	Mean	Median	Range	Std. Deviation	Mean Rank	Wilcoxon Signed Ranks Test	P-Value
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	28	4.3761	2.0000	24.72	5.39226	1.00	Z = - 3.989	0.0001
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	28	6.4123	4.0625	24.78	5.89257	11.50		

Source: Primary Data. (At 95% Confidences Level)

Similarly median also indicates the same as the median value has come prior, as 2.0000 where after it has increased and come up to 4.0625. Even the mean rank has been less in pre-financial years that to 1.00, were in the post-financial year it has come to 11.50. These indeed indicate that most of the companies those have CSR committee into place in their organization, those companies recently have increased the capital investment/expenditure in energy conservation activities to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.5.2 Improved Material and Other Resource Handling**

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test fails to rejects the null hypothesis that says sample data has normally distributed, and hence we accept the null hypothesis that says sample data has normally distributed. As P-value of both the pre and post financial years is more than confidences level of 95% (0.05), that has come 0.200 & 0.200 in Kolmogorov- Smirnov test and 0.084 & 0.197 in Shapiro Wilk test of pre and post respectively, which is more than 0.05 (0.200 & 0.200 > 0.05, 0.084 & 0.197 > 0.05)

that can witness from table no: 102. Hence, the parametric test is used to compare capital investment/expenditure made towards improved material and other-resource handling.

**Table No: 102**

<b>K-S and S-W Test for Improved Material &amp; Other Resource</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.230	7	0.200	0.832	7	0.084
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.230	7	0.200	0.873	7	0.197

Source: Primary Data. (At 95% Confidences Level)

As the data is normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, hence we have used paired sample T-Test, which is a parametric test, to compare capital investment/expenditure made towards improved material and other-resource handling by companies in prior and after the Company Act 2013 enforcement.

**Table No: 103**

<b>Paired Sample T-Test for Percentage of Profit Spend Towards Improved Material &amp; Other Resource in Pre and Post Period</b>							
Financial Years		Mean	N	Std. Deviation	T - Value	df	Sig. (2-tailed)
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	4.8214	7	3.91768	- 2.062	6.000	0.085
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	7.4464	7	6.00775			

Source: Primary Data. (At 95% Confidences Level)

Paired sample T-Test shows the result that there is no significant difference between pre and posts financial years capital investment/expenditure made by companies towards improved material and other-resource handling. As significant value has come to 0.085 that is more than 95% confidences level value of 0.05 ( $0.085 > 0.05$ ) that can observe from table no: 103, this indicates that enforcement of Company Act 2013 has not impacted on



capital investment/expenditure pattern of improved material and other-resource handling of companies. The above evidence support that we have failed to reject the null hypothesis in this particular variable. As evidence support in accepting the null hypothesis of the study that says there is no positive effect of Companies Act, 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### 4.6.5.3 Recycling of Waste Material and Water

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test rejects the null hypothesis that says sample data is normally distributed and accept the alternate hypothesis that says sample data has not normally distributed. As P-value of both the pre and post financial years is less than confidences level of 95% (0.05), that has come 0.000 & 0.000 of pre and post respectively, which is less than 0.05 (0.000 & 0.000 < 0.05) that can perceive from table no: 104. Hence, the non-parametric test is used to compare capital investment/expenditure made towards recycling of waste material and water.

**Table No: 104**

<b>K-S and S-W Test for Recycling of Waste Material and Water</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.167	77	0.000	0.742	77	0.000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.183	77	0.000	0.652	77	0.000

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, hence we have used Wilcoxon Signed Rank Test. Which is a non-parametric test, to study capital investment/expenditure made towards recycling of waste material and water by companies in prior and after the Company Act, 2013 had enforced.

**Table No: 105**

<b>Wilcoxon Signed Rank Test for Percentage of Profit Spend Towards Recycling of Waste Material and Water in Pre and Post Period</b>									
Financial Years		N	Mean	Median	Range	Std. Deviation	Mean Rank	Wilcoxon Signed Ranks Test	P-Value
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	7	4.8214	5.0000	9.00	3.91768	0.00	Z = - 2.032	0.0422
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	7	7.4464	5.0000	15.50	6.00775	3.00		

Source: Primary Data. (At 95% Confidences Level)

As Wilcoxon signed ranks, the test shows a result that there is a significant difference between pre and post financial years capital investment/expenditure made by companies towards recycling of waste material and water. Because P-value has come to 0.0422 that is less than 95% confidences value of 0.05 ( $0.0422 < 0.05$ ) that can observe in table no: 105, that indicates a pattern of investment in the recycling of waste material and water has seen to be in increasing tread after the enforcement of Company Act 2013. As mean has come to 4.8214 of pre-financial years that is low as compared to the post-financial years.

Similarly, mean rank also was equivalent to 0.00 in pre-financial years, wherein post-financial years Mean rank was 3.00 that is higher than before the Company Act 2013. These suggest that most of the companies those have CSR committee into place in their organization, those companies recently have increased the capital investment/expenditure on recycling of waste material and water to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.5.4 Repairs & Maintenances**

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test rejects the null hypothesis that says sample data is normally distributed and accept the alternate hypothesis that says sample data has not normally distributed. As P-value of both the pre and post financial

years is less than confidences level of 95% (0.05), that has come 0.000 & 0.000 of pre and post respectively, which is less than 0.05 (0.000 & 0.000 < 0.05), that can perceive through table no: 106. Hence, the non-parametric test is used to compare capital investment/expenditure made towards time to time repairs & maintenances.

**Table No: 106**

<b>K-S and S-W Test for Repairs &amp; Maintenances</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.159	79	0.000	0.794	79	0.000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.143	79	0.000	0.794	79	0.000

Source: Primary Data. (At 95% Confidences Level)

As data is not normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, hence we have used Wilcoxon Signed Rank Test. That is a non-parametric test, to study capital investment/expenditure made towards time to time repairs & maintenances by companies prior and after the Company Act 2013 had enforced.

**Table No: 107**

<b>Wilcoxon Signed Rank Test for Percentage of Profit Spend Towards Repairs &amp; Maintenances in Pre and Post Period</b>									
Financial Years		N	Mean	Median	Range	Std. Deviation	Mean Rank	Wilcoxon Signed Ranks Test	P-Value
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	80	14.9338	11.7500	79.65	13.15546	28.60	Z = - 5.847	0.0000
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	79	17.6226	17.2500	79.68	13.65074	31.75		

Source: Primary Data. (At 95% Confidences Level)

As P-value has come to 0.0000 as per the Wilcoxon Signed ranks test that is less than 95% confidences level value of 0.05 (0.0000 < 0.05) that can observe from table no: 107. That

says there is a significant difference in investment pattern towards time to time repairs & maintenances by companies in financial year prior and after enforcement of Company Act 2013. Where mean outcome support the statement because the mean of pre-financial years has come to 14.9338 which is less than a post-financial year that has come to 17.6226, this indicates that companies have been investing much more in time to time repairs & maintenances after the introduction of Company Act 2013.

Likewise median also indicates the same as the median value has come in prior, as 11.7500 where after it has increased and come up to 17.2500. Even the mean rank has been less in pre-financial years that is 28.60, were in the post-financial year it has come to 31.75. These indeed prove that most of the companies those have CSR committee into place in their organization, those companies recently have increased the capital investment/expenditure in time to time repairs & maintenances to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.5.5 Research and Development**

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test fails to reject the null hypothesis that says sample data has normally distributed, and hence we accept the null hypothesis that says sample data has normally distributed. As P-value of both the pre and post financial years is more than 95% confidences level value of (0.05), that has come 0.025 & 0.200 in Kolmogorov- Smirnov test and 0.202 & 0.904 in Shapiro Wilk test of pre and post respectively, which is more than 0.05 ( $0.025 & 0.200 > 0.05$ ,  $0.202 & 0.904 > 0.05$ ) that can witness through table no: 108. Hence, the parametric test is used to compare capital investment/expenditure made towards research and development.

As data is normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, Hence we have used paired sample T-Test, which is a parametric test, to compare capital investment/expenditure made towards research and development by companies in prior and after the Company Act 2013 enforcement.

**Table No: 108**

<b>K-S and S-W Test for Research and Development</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.222	17	0.025	0.928	17	0.202
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.118	17	0.200	0.975	17	0.904

Source: Primary Data. (At 95% Confidences Level)

The paired sample T-test shows the out that there is a significant difference between pre and post financial years capital investment/expenditure made by companies towards research and development. As significant value has come to 0.004 that is lower than 95% confidences level value of 0.05 ( $0.004 < 0.05$ ) that can observe from table no: 109, that symbolizes proportion of investment made towards research and development after the enforcement seen to be into an increasing trend by companies.

**Table No: 109**

<b>Paired Sample T-Test for Percentage of Profit Spend Towards Research and Development in Pre and Post Period</b>							
Financial Years		Mean	N	Std. Deviation	T - Value	df	Sig. (2-tailed)
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	16.6765	17	8.85463	-3.350	16.000	0.004
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	20.5270	17	10.17749			

Source: Primary Data. (At 95% Confidences Level)

This statement further being supported by the mean value that has come to 16.6765 of pre-financial years that is lower than post-financial years that has come to 20.5270. These strongly says that most of the companies those have CSR committee into place in their organization, those companies recently have increased the capital investment/expenditure in research and development to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013

(Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### 4.6.5.6 Other Control Measure

Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) both test fails to rejects the null hypothesis that says sample data has normally distributed, and hence we accept the null hypothesis that says sample data has normally distributed. As P-value of both the pre and post financial years is more than 95% confidences level value of (0.05), that has come 0.147 & 0.145 in Kolmogorov- Smirnov test and 0.119 & 0.051 in Shapiro Wilk test of pre and post respectively, which is more than 0.05 (0.147 & 0.145 > 0.05, 0.119 & 0.051 > 0.05) that can observe through table no: 110. Hence, the parametric test is used to compare capital investment/expenditure made towards other-control measure.

**Table No: 110**

<b>K-S and S-W Test for Other Control Measure</b>							
Financial Years		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	0.282	6	0.147	.835	6	0.119
Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	0.283	6	0.145	.793	6	0.051

Source: Primary Data. (At 95% Confidences Level)

As data is normally distributed based on Kolmogorov-Smirnov (K-S) and Shapiro Wilk (S-W) normality test, Hence we have used paired sample T-Test, which is a parametric test, to compare capital investment/expenditure made towards other-control measure by companies in prior and after the Company Act 2013 enforcement.

The paired sample T-test shows the out that there is a significant difference between pre and post financial years capital investment/expenditure made by companies towards other-control measure. As significant value has come to 0.040 that is less than 95% confidences level value of 0.05 (0.040 < 0.05) that can witness from table no: 111, this symbolizes

proportion of investment made by companies towards other-control measure after the enforcement seen to be in the higher side.

**Table No: 111**

<b>Paired Sample T-Test for Percentage of Profit Spend Towards Other Control Measure in Pre and Post Period</b>							
Financial Years		Mean	N	Std. Deviation	T - Value	df	Sig. (2-tailed)
Pre	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2014	2.4167	6	1.42009	-2.759	5.000	0.040
	Post	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2016	3.5833	6			

Source: Primary Data. (At 95% Confidences Level)

This statement further being supported by the mean value that has come to 2.4167 of pre-financial years that is lesser than post-financial years that has come to 3.5833. These strongly says that most of the companies those have CSR committee into place in their organization, those companies recently have increased the capital investment/expenditure in other-control measure to meet the requirement of new Company Act 2013. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

The analysis shows a result that amount spends as capital investment/expenditure towards environmental equipment to assess the same six variables had identified. The analysis was carried out with the help of either Wilcoxon Signed Ranks test or Paired Sample T-test, it could observe that five of this variable supports in rejecting the null hypothesis of the study were one variable fails to reject the null hypothesis.

#### **4.6.6 THE CALCULATION OF AMOUNT ALLOTTED TOWARDS CSR**

The analysis highlights that Indian companies as well as foreign companies most of them were calculating and spending the amount based on their voluntary bases towards spending on CSR activities, as there was no said direction on what amount to spend, in any manner they were calculating before Company Act 2013 specification. As a percentage of those

companies which were calculating amount on voluntary bases was 81.48% & 90.91% of both Indian and foreign companies respectively found to be very high as compared to other acts and rules of accounting that can perceive from table no: 112. That was solitary because there was no such clear-cut specification about amount to be spent on CSR activities in any acts and rules of accounting prior-enforcement of Company Act 2013. Similarly, it can observe that after the introduction of Company Act 2013. The percentage of voluntary calculation towards CSR activities seen to be in decreasing trend was amount spend towards CSR activities now witnessed to be calculated based on Company Act 2013 specification, as 64.20% & 54.55% of Indian and foreign companies does follow the format of Companies (Corporate Social Responsibility) Policy Rules, 2014.

**Table No: 112**

**Pre and Post Calculation of CSR Amount**

Group-Based on Nationality	As per Company Act 1956		As per Company Act 2013		As Per Indian Accounting Standard		As per International Financial Reporting Standard		As Per Generally Accepted Accounting Principles		On Voluntary Basis		Number of Companies	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Before 1 <sup>st</sup> April 2014														
Indian	10	12.35	-	-	6	7.41	1	1.23	6	7.41	66	81.48	81	100
Foreign	-	-	-	-	-	-	-	-	5	22.73	20	90.91	22	100
Total	10	9.71	-	-	6	5.83	1	0.97	11	10.68	86	83.5	103	100
After 1 <sup>st</sup> April 2014														
Indian	1	1.23	52	64.20	2	2.47	-	-	5	6.17	48	59.26	81	100
Foreign	-	-	12	54.55	-	-	-	-	5	22.73	11	50	22	100
Total	1	0.97	64	62.14	2	1.94	-	-	10	9.71	59	57.28	103	100

Source: Primary Data.

These strongly says that most of the companies those have CSR committee into place in their organization, those companies recently have shifted calculation of the amount to be spent towards CSR activities to meet the requirement of new Company Act 2013. Hence the above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (CSR) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.



#### 4.6.7 THE DIRECTORS /ANNUAL REPORT

The analyses suggest that prior Company Act 2013 enforcement it can be seen that Indian Accounting Standards had dominantly followed by 67.96% of companies in preparing annual report/directors report. Similarly Generally Accepted Accounting Principles was second most adopted by almost 32% of companies that can witness through table no: 113. Whereas after enforcement of Company Act 2013. It is most weighted Act that has taken for references in preparing annual report/directors report as almost 80% of companies follows it. Similarly, it can observe that Indian Accounting Standards is not completely neglected by companies as 64.08% of companies also take it as references while preparing an annual report.

**Table No: 113**

Companies Preferences in Preparing Directors/Annual Report								
Rules and Regulation	PRE				POST			
	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013		1 <sup>st</sup> April 2013 to 31 <sup>st</sup> March 2014		1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2015		1 <sup>st</sup> April to 2015 to 31 <sup>st</sup> March 2016	
	F	%	F	%	F	%	F	%
As per Company Act 1956	29	28.16	29	28.16	2	1.94	0	0
As per Company Act 2013	-	-	-	-	80	77.67	82	79.61
As per Indian Accounting Standard	70	67.96	70	67.96	66	64.08	66	64.08
As per International Financial Reporting Standard	16	15.53	16	15.53	16	15.53	16	15.53
As per Generally Accepted Accounting Principles	33	32.04	32	31.07	35	33.98	34	33.01
As per Voluntary Process / Method	14	13.59	14	13.59	14	13.59	14	13.59

Source: Primary Data.

This result provides us with ample evidence that says absolutely Company Act 2013 has made a tremendous impact on companies annual report preparation. These above evidence support in rejecting the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.8 SUMMARY OF INTERPRETATION**

The analysis provides a clear picture that Companies (Corporate Social Responsibility) Policy Rules 2014 has taken absolutely a full charge of providing clyster clear direction to companies towards their CSR activities. As six different variables were identified to analysis the pre and post effect of Company Act 2013, in those entire six variables, it has found that Company Act 2013 has made a positive impact on companies CSR Policy. That is because corporate social responsibility committee was newly formed by most of the companies to meet the requirement of new Company Act 2013. That says every company is having a net worth of rupees five hundred crores or more, or turnover of rupees one thousand crores or more or a net profit of rupees five crores or more during any financial year will have to constitute a corporate social responsibility committee.

Similarly, most of the companies recently have increased the number of directors into their CSR committee as CSR policy 2014 has stated that corporate social responsibility committee of the board must consist of three or more directors, out of which at least one director shall be an independent director. Companies also recently have increased the percentage of profit being spend towards environmental activities from one percent to two percent to meet the requirement CSR policy 2014. That says the company has to spend at least two percent of the average net profit of the company for last three financial years. Similarly, as Company Act 2013 has delivered clyster clear direction towards the minimum amount each company needs to spend towards CSR activities hence the calculation of amount spent by most of the companies has been done based on Company Act 2013. Similarly, most of the companies also taking Company Act 2013 as references in preparing directors report / annual report as it has stated in CSR policy 2014 that CSR policy of company must disclose in given format in board's report and on the company's website.

These are some of the reason Company Act 2013 has made a significant effect on companies CSR policies. As all these above evidence support in rejecting the null hypothesis of the study. We reject the null hypothesis and accepting the alternative hypothesis of the study that says there is a positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

#### **4.6.9 INFERENCE**

The analysis and finding put forwards that corporate environmental accounting and ethical practices carry out by business enterprises in Goa has been affected positively through the introduction of Company Act 2013 and enforcement of (Corporate Social Responsibility) Policy Rules 2014. Form the above evidence and finding it can put forward that this rule given now a pakka path for those companies which were involved before as well in CSR activities as those companies were seen to be heading their CSR activities on the kutcha path before the introduction of this rule. Similarly, this rule has given the regulatory bodies direction towards what they expect from the companies through CSR activities and what companies are doing through CSR activities in reality. That can be easily identified now through company's annual report as disclosure of CSR activities of companies now being made mandatory. Those high-profit earnings companies which were escaping earlier and not spending any of their profits towards society for sustainable development, as per (Corporate Social Responsibility) Policy Rules 2014 now those companies have to spend a fair amount towards the development of society compulsorily. These are some of the ways Company Act 2013 (Corporate Social Responsibility) Policy Rules 2014 has played the significant role in organizing, enforcing, leading, controlling, and monitoring the CSR activities of the companies. The mandatory enforcement of Corporate Social Responsibility Policy Rules 2014 has also brought to an end to the traditional views of Indian people, as peoples were to look towards government agencies as if whole and soul mate for their development. These views of people of India may have certainly changed as people's expectations are now also increased from corporates. Corporates are also considered equivalently responsible for sustainable development.

#### **4.7 COMPANIES OPINION ON ENVIRONMENTAL ACCOUNTING**

Companies opinion towards environmental accounting has evaluated with the help of based on their reason they give for preparing and not accounting into their corporate house. Similarly the importance of environmental cost information in decision-making & routine operations in their organization. Companies' opinion about introducing environmental accounting and ethical practices, based on their key reasons provide to them has rated with five star/point scales.

#### 4.7.1 COMPANIES VIEW TOWARDS PREPARING ENVIRONMENTAL ACCOUNTING

Companies view has judged towards essential reasons behind implementing environmental accounting in their organization with the help of a five-point Likert scale, and this view has further utilized for rating these critical reasons behind preparing an environmental accounting.

**Table No: 114**

Companies View Towards Preparing Environmental Accounting										
Star	Companies View	Reasons For Preparing Environmental Accounting								
		Number of Companies View in Percentage (%)								
		a	b	c	d	e	f	g	h	i
1	Completely Disagree	6.25	3.13	4.69	10.94	3.13	1.56	1.56	12.5	1.56
2	Somewhat Disagree	1.56	1.56	10.94	15.63	1.56	-	1.56	14.06	-
3	Neither Agree nor Disagree	4.69	9.38	28.13	26.56	14.06	-	-	31.25	1.56
4	Somewhat Agree	62.5	57.81	40.62	39.06	54.69	20.31	42.19	28.13	42.19
5	Completely Agree	25	28.12	15.62	7.81	26.56	78.13	54.69	14.06	54.69
Total		100	100	100	100	100	100	100	100	100

Source: Primary Data.

The analysis of the study conveys that some of the reasons behind implementing environmental accounting are like provides better estimates of total cost of producing a product help management in decision – making, improves pricing of the product, increase profitability, gives a competitive advantage. Has been awarded a rating of four-star, as most of the companies somewhat agree that this reason has played a significant decisive role in implementing environmental accounting in their organization. Similarly, reasons like help in complying with environmental laws, looks towards as a social cause, helps in building corporate image/goodwill. For this three reasons has awarded a rating of five stars, as most of the companies completely agree, that this three reason has played a significant decisive role in implementing environmental accounting in their organization. Also, reasons the increasing internal and external pressure on the organization. Has awarded three stars, as most of the companies neither agree nor disagree this convey that

this reason has not played a significant role in implementing environmental accounting as compared to other reasons.

**Table No: 115**

<b>Rating For Reasons Towards Preparing Environmental Accounting (EA)</b>	
<b>Reasons Behind Preparing Environmental Accounting (EA)</b>	<b>Rating</b>
	Based on Company View
a. Provides better estimates of total cost of producing a product.	☆ ☆ ☆ ★ ☆
b. Helps management in decision – making.	☆ ☆ ☆ ★ ☆
c. It improves pricing of the product.	☆ ☆ ☆ ★ ☆
d. Increase profitability.	☆ ☆ ☆ ★ ☆
e. It gives a competitive advantage.	☆ ☆ ☆ ★ ☆
f. Helps in complying with environmental laws.	☆ ☆ ☆ ☆ ★
g. looking towards it, as a social cause.	☆ ☆ ☆ ☆ ★
h. Increasing Internal and external pressure on the organization	☆ ☆ ★ ☆ ☆
i. It helps in Building Corporate Image / Goodwill.	☆ ☆ ☆ ☆ ★

Source: Primary Data.

#### **4.7.2 COMPANIES VIEW TOWARDS NOT PREPARING ENVIRONMENTAL ACCOUNTING**

Companies view has judged towards essential reasons behind not implementing environmental accounting in their organization with the help of a five-point Likert scale, and this view has further utilized for rating this critical reasons behind not preparing an environmental accounting. The analysis of the study portrays that some of the reasons behind not implementing environmental accounting are like expensive, no accounting standards or guidelines. Has been awarded a rating of four-star, as most of the companies somewhat agree that this reason has played a significant decisive role in the failure of implementing environmental accounting in their organization. Similarly, reasons like time-consuming, difficulty in measuring environmental benefits, difficulty in measuring environmental costs, For this three reasons has awarded a rating of five stars, as most of the companies completely agree, that this three reason has played a significant decisive

role behind not implementing environmental accounting in their organization. The reasons like not required by law, do not want to involve in social issues. Has awarded three stars, as most of the companies neither agree nor disagree this convey that this two reason has not played a significant role in not implementing environmental accounting as compared to other reasons.

**Table No: 116**

<b>Companies View Towards Not Preparing (EA)</b>								
<b>Star</b>	<b>Companies View</b>	<b>Reasons Behind Not Preparing Environmental Accounting</b>						
		<b>Number of Companies View in Percentage (%)</b>						
		a	b	c	d	e	f	g
1	Completely Disagree	-	-	-	2.56	-	-	23.08
2	Somewhat Disagree	5.13	2.57	5.12	2.56	2.56	5.13	17.95
3	Neither Agree nor Disagree	10.26	7.69	41.03	10.27	15.38	15.38	25.64
4	Somewhat Agree	43.59	43.59	35.90	58.97	28.21	25.64	20.51
5	Completely Agree	41.02	46.15	17.95	25.64	53.85	53.85	12.82
<b>Total</b>		100	100	100	100	100	100	100

Source: Primary Data.

**Table No: 117**

<b>Rating For Reasons Towards Not Preparing Environmental Accounting</b>	
<b>Reasons Behind Not Preparing Environmental Accounting</b>	<b>Rating</b>
	<b>Based on Company View</b>
a. Expensive	☆ ☆ ☆ ★ ☆
b. Time-consuming	☆ ☆ ☆ ☆ ★
c. Not required by Law	☆ ☆ ★ ☆ ☆
d. No accounting standards or guidelines	☆ ☆ ☆ ★ ☆
e. Difficulty in measuring environmental costs	☆ ☆ ☆ ☆ ★
f. Difficulty in measuring environmental benefits	☆ ☆ ☆ ☆ ★
g. Do not want to involve in social issues	☆ ☆ ★ ☆ ☆

Source: Primary Data.

#### 4.7.3 COMPANIES VIEW TOWARDS IMPORTANCE OF ENVIRONMENTAL COST INFORMATION IN DECISION-MAKING & ROUTINE OPERATIONS.

Companies view has judged towards the importance of environmental cost information in decision-making & routine operations in their organization with the help of a five-point Likert scale, and this view has further utilized for rating this essential vital reasons behind the utilization of environmental cost information in decision-making & routine operations.

**Table No: 118**

<b>Companies View Towards Importance of Environmental Cost Information in Decision-Making &amp; Routine Operations</b>							
<b>Star</b>	<b>Companies View</b>	<b>Important Reasons behind Utilisation of Environmental Cost Information in decision-making &amp; routine operations</b>					
		<b>Number of Companies View in Percentage (%)</b>					
		<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>e</b>	<b>f</b>
1	Completely Disagree	-	0.98	1.96	-	-	4.90
2	Somewhat Disagree	3.92	3.92	4.90	5.88	0.98	2.94
3	Neither Agree nor Disagree	12.74	15.69	19.61	5.88	15.69	7.84
4	Somewhat Agree	62.75	58.82	53.92	47.06	52.94	40.20
5	Completely Agree	20.59	20.59	19.61	41.18	30.39	44.12
<b>Total</b>		100	100	100	100	100	100

Source: Primary Data.

The analysis of the study provided evidence that some of the critical reasons behind the utilization of environmental cost information in decision-making & routine operations. Were like an appraisal of investment for environmental risks, evaluation of the environmental performance of a company, planning cost reduction, designing various processes using environmentally friendly technologies. Assessing environmental impact of a company's projects has been awarded a rating of four-star, as most of the companies somewhat agree that this is the critical reasons that have played a significant role in the utilization of environmental cost information in decision-making & routine operations. Similarly, the reason that gets the comparative advantage in the market with an environmentally friendly product. For this reason has awarded a rating of five stars, as most of the companies completely agree, that this is one of the essential reason that has

played a significant role behind the utilization of environmental cost information in decision-making & routine operations.

**Table No: 119**

<b>Rating For Reasons Towards Utilisation of Environmental Cost Information in decision-making &amp; routine operations</b>	
<b>Reasons behind Utilisation of Environmental Cost Information in decision-making &amp; routine operations</b>	<b>Rating</b>
	Based on Company View
a. Appraisal of investment for environmental risks	☆ ☆ ☆ ★ ☆
b. Evaluation of environmental performance of a company	☆ ☆ ☆ ★ ☆
c. Planning cost reduction	☆ ☆ ☆ ★ ☆
d. Assessing environmental impact of a company's projects	☆ ☆ ☆ ★ ☆
e. Designing various processes using environmentally friendly technologies	☆ ☆ ☆ ★ ☆
f. Get the comparative advantage in the market with an environmentally friendly product	☆ ☆ ☆ ☆ ★

Source: Primary Data.

#### **4.7.4 COMPANIES VIEW TOWARDS ENVIRONMENT ACCOUNTING & REPORTING KEY TO SUCCESS**

The analysis of the study conveys that most crucial first key for success that helped corporates in smooth carrying out environmental accounting and reporting practices was due to establishment and implementation of the environmental management system which was agreed by 88.52% of companies. Were second most crucial key to success was due to various laws rules and regulation governing their company that is agreed by 75.41% of companies. The third key to success is conducting a regular environmental audit because 70.49% of companies agree that. The fourth key to success was to keeping a positive attitude & looking towards as a social cause which is agreed 65.57% of companies. The fifth key to success was an investment in greener process and technology that is agreed by 62.30% of companies. Were strong government support have agreed by least numbers of companies that only by 22.95% of them those consider it as the key of success which, helped corporates in smooth implementation and carrying out environmental accounting and reporting practices.



#### **4.7.5 COMPANIES VIEW TOWARDS ENVIRONMENT ACCOUNTING & REPORTING KEY REASONS FOR FAILURES**

The analysis of the study conveys that most crucial first key for failures that did not help corporate in the smooth running of environmental accounting and reporting was confused policies on corporate environment disclosures that is agreed by 90.24% of companies. Second crucial equivalent reason towards failure was laxity in a regulation that is agreed by 85.37% of companies. Thirdly important reason behind the failure is identified as fear of damage to goodwill if perceived to be less socially responsible due to a lesser amount of disclosure that is agreed by 41.16% of companies. The fourth key reason behind the failure has rectified that is poor ethical decision making which is agreed by 31.71% of companies. Were as the least critical reason for failure has been considered as an increased cost of disclosure that is agreed by least number of companies that is by 29.27% of them accepts that this particular vital reasons led to failure in the smooth running of environmental accounting and reporting practices.

#### **4.7.6 COMPANIES' OPINION ABOUT INTRODUCING ENVIRONMENTAL ACCOUNTING AND ETHICAL PRACTICES.**

The analysis of the study conveys that first most crucial preferred opinion of corporates is towards making the rules, regulations, and acts governing the same should be made more clear, that has accepted and agreed by 80.39% of companies. Second most preferred opinion of companies that government should make environmental audit mandatory for governing the same, which has been agreed by 64.71% of companies. Third most preferred opinion of companies that government should develop better schemes in-order to promote the same, which has been agreed by 63.73% of companies. Fourth preferred opinion has given to equivalent weight-age to two different opinions that to the first government should announce better rewards/recognition for those companies who follow these practices; secondly, companies should have given the freedom to decide their amount and purpose of social contribution. Both this opinion has been greed by 52.94% of companies. Were the least weight-age has given to opinion that is companies will not able to implement it, as the aim of corporates are generating profit, were hardly 17.65% of companies agreed towards introducing environmental accounting and ethical practices.

## **4.8 SUMMARY OF CHAPTER**

The data analysis and hypothesis testing chapter have provided in-depth detail interpretation, inferences, and hypothesis testing with the help of various statistical tools and techniques as discussed in third research methodology chapter. Those are best suitable for the collected data and analyzing the said objectives of the study. This chapter also has come out with various facts and approaches, covering diverse techniques, usages and application of the statistical model for better forecasting, evaluating data. With the help of this precise and appropriate analysis, we were able to generate reliable finding, meaningful conclusion, a valuable suggestion for the corporates, regulatory authorities and government. The further chapter also discusses the contribution made by a researcher in this subject area and different opportunity available for future researcher henceforth in environmental accounting and ethical practices.

## **CHAPTER – V**

### **FINDING, CONCLUSION, AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

This chapter provides a concluding discussion, recommendation, and areas of opportunity for the future research. It also focuses on summarising together empirical finding, and other evidence raised in the earlier chapter of the thesis.

#### **5.2 SUMMARY OF FINDING**

The first objective was to investigate which are the different factors that could be influencing the level of corporate environmental disclosure practice of business enterprises in Goa. To analysis, the same one major hypothesis had framed. Were the analysis & finding of this hypothesis convey that Factor like nationality (Indian/foreign), where foreign companies have outperformed regarding Environmental Disclosure Index (EDI) score. For this one of the reasons for foreign companies doing well in EDI score could be because the kind of business culture and ethical attitude of foreign companies have generated towards natural environment through their country culture, laws, rules and regulation, the similar attitude they might be followed in India as well.

Also, factor likes ownership (public/private). Public companies have outperformed regarding Environmental Disclosure Index (EDI) score. That could be because public companies are more frequently have to deal with third parties like a shareholder, financial institution. Hence they have more pressures for external parties to perform well regarding environmental accounting and disclosure practices. If they do not show the respect towards the environment, they might have a fear of losing these third parties. That is one of the reasons public companies doing well in EDI score.

Likewise factor (large/medium), large size companies have outperformed regarding Environmental Disclosure Index (EDI) score. As large companies have more funds and

workforce as compared to the medium size companies, hence they have more funds and workforce allocation towards their environmental impact assessment and management of their company. These have led to the reason for large companies to doing well in Environmental Disclosure Index (EDI) score.

Similarly, it has observed that factor-like (sectors or categories) in which companies fall into, has taken a vital role in Environmental Disclosure Index (EDI) score. As significant variation observed in a sector like pharmaceutical, electronic, food & beverages and chemical. Where pharmaceutical, electronic, food & beverages fall into green categories as per Director of Industries Trade and Commerce of Goa. Hence they are less likely to affect environment harmfully, that why they are more liberal in the account and disclosing all the environmental activities of the business. Whereas chemical falls into red categories, hence if they want to survive in a state like Goa they have to look carefully on their economic actives of business, so they do not have any adverse impact on the environment of Goa. As they have extreme pressure from society, government and NGO to follow up with their environmental impact, this may be some of the reason behind pharmaceutical, electronic, food & beverages and chemical companies are doing well as compared to other sectors or categories in Environmental Disclosure Index (EDI) score.

However, factor likes age where no differences have identified between newly formed and old age companies EDI score. These could be because at present days for any business entrepreneur who is looking for a start-up has to go through all the legal requirement process which applies to all anciently formed companies, where there is no distinction between old and new has been made by government authorities when it comes to the applicability of various environmental laws. These may be one of the substantial reasons why age factor has not affected in a variation of companies Environmental Disclosure Index (EDI) score.

These highlights that excluding age all other factors like nationality, ownership, size, and sector or category are, highly influencing level of corporate environmental disclosure practice of business enterprises in Goa. Where this evidences related to the factor like size are in congruence with the findings of (Koushik Kumar Dutta 2012) were he researched if there is any correlation between the size of the selected company and Environmental Disclosure Index (EDI). Findings from the research revealed that financial strength is the

root-cause, behindhand the better practice of environmental accounting and reporting. Similarly (Henri and Journeault 2008) researched if there is any associated of environmental performance indicators (EPIs) with size, and ownership of Canadian manufacturing firms. The finding of the research put forwards that there is a significant positive association between larger firms and public firms with environmental performances indicators.

Where (Joshi, Suwaidan and Kumar 2011) researched if there is any associate relationship between environmental disclosure practices of Indian industrial and factors influencing the level of environmental disclosure. The result of research support level of corporate environmental disclosure has significantly positively associated with Firm Size (Size). However, factor like Age of the company (AGE), and Foreign Operations (FO), is not positively associated with the level of corporate environmental disclosure, whereas our study finding is partially in line as well as contradicting with them. Because a factor like size and age are in line with them shows a similar result, where a factor like size shows positive relation and age shows no significant relation with the level of corporate environmental disclosure. However, the study finding contradicts with factor foreign operation/nationality. Where their result conclude that factor foreign operation has no significant positive association with level of corporate environmental disclosure, where we found in our study that nationality factor has a significant positive association in influencing the level of corporate environmental disclosure practice of business enterprises in Goa.

The second objective was to assess the extent of legal compliance of business firm on environmental accounting and disclosure practices. To analysis, the same one primary hypothesis had framed. Were the analysis & finding of this hypothesis portray that attitude or preference does vary in the extent of legal compliance of business firm towards environmental accounting and disclosure practices between different groups of companies in Goa.

As it could observe that groups like public, large, company implementing environmental accounting, pharmaceutical, electrical, electronic, chemical, plastic, engineering, and food & beverages sector/categories are doing well in the factor of the extent of ISO certification compliance. Also, factor like adopting the various laws and acts governing their company.

Which is influenced by almost all group selected where groups like foreign, public, large, implementing environmental accounting, sector/categories like pharmaceutical, food & beverage, iron and steel are some group of companies doing well in the extent of adopting the various laws and acts governing their company compliance.

Also, factor like the company has to pay any fine or penalty with regards to environmental matters. That has influenced by some of the groups like foreign, public, implementing environmental accounting, pharmaceutical, electrical, electronic, engineering, food & beverage, printing & packaging, and textile sector/categories are some groups of companies doing well in the extent of the have to pay any fine or penalty compliance.

As even though there are significant differences which could witness regarding the extent of legal compliance between various groups of companies. Whereas regarding the approach of most of the companies towards legal compliance seems to be like companies are willing to do the right thing, companies also try too much but don't always succeed this is the two categories of ATO model under most of the companies fall. Whereas very few companies which are falling into other two categories of ATO model that are companies do not want to comply, or companies have decided not to comply. These justify that most of the companies are having a positive attitude towards legal compliances. They are willing to do the right things towards environmental protection & conservation. Still, there is a fear which has generated due to a small portion of companies; those do not have a positive attitude towards legal compliances. As they are escaping from legal compliances, they might send the wrong message to those positively looking companies which may lead to shrinking of positively looking companies' proportion. That may eventually lead to the destruction of the natural environment.

The third objective was to evaluate the measures taken by industries to prevent from harmful causes to the environment of Goa. To analysis, the same one primary hypothesis was framed saying that there are no positive measures taken by industries to prevent the environment from harmful causes.

Were the analysis & finding of this hypothesis portray that almost 61.34% of companies have taken positive measures towards conservation & protection of environmental of Goa and to prevent from the harmful cause from their routine business activities. In the first

section where they have scored least in getting awards, in which most of the companies failed drastically. It could be reasons that all companies cannot get awards as awards given to only those who have crossed the excellency benchmark. However, the score should have been undoubtedly more, some around 30 to 40 mark. Other than this most of companies are doing well in other parameters of the first section. In fact, if we exclude the score of awards companies are doing even better than the third section as score comes up to 62.62 that is higher than a score of corporate environmental responsibility section.

Whereas the second section has been ruled out by the highest number of companies, This mite because those are core business practices, Without implementing such measures any business cannot even think of running for a short period of the spell. As there is a high level of pressure right from the worker to external third parties like government, customers, suppliers, shareholders, and society. Even then score towards research and development has been seen drastically low as 41.75, mainly Indian, private, and medium-sized companies hardly carry out R&D. Secondly, stand towards climate change also has been lacking behind after R&D. Where it could observe that private companies are the one those are mostly lacking behind in taking a stand towards climate change.

The third section has second most preferred by most companies with the score of 58.25 if we ignore the awards from the first section which has got least score than corporate environmental responsibility section becomes the least neglected once. These indicate that corporate has to work not only on organization & management section, but they have to also work towards their corporate environmental responsibility section as well. Were donation and sponsorship are most neglected parameters of the third section. This mite because most of the corporate said that they believe in taking initiatives on their own rather than, providing funds to third parties to take the initiative towards environmental conservation and protection on behalf of them.

These provide the evidence that except few parameters like awards, vision & mission, stand towards climate change, research & development, donation and sponsorship which are taken care but by least number of companies. All other parameters have been taken care of by a significant number of companies. These conclude that undoubtedly substantial number of companies in Goa have taken a significant level of positive measures to prevent environment of Goa from harmful causes. That will support & lead in the sustainable all-

round development of Goa. Were this evidences related to the study are in congruence with the findings of (Jose and Saraf 2013). Were they concluded that disclosures on CSR finances and donations were nearly non-existent.

The fourth objective was to examine the role of environmental accounting and ethics in building a corporate image. To analysis, the same one major hypothesis was framed saying that there is no significant role of environmental accounting and ethics in building a corporate image.

Were the analysis & finding of this hypothesis convey that environmental accounting implication is capable of giving a significant positive effect on building company image. As three out of three sub-hypotheses framed towards environmental perspective shows significant, in companies adopting an environmental policy, stand taken towards global environmental hazed, and having an independent environmental management department shows a positive relationship with the company having a high reputation.

Ethical implication is capable of giving a positive effect on building company image. As four sub-hypothesis framed towards ethical perspective, three hypotheses show significant relation, in companies making publicity & environmental awareness for general public & employees, adopting voluntary ISO norms & certificates, and having corporate social responsibility committee has a positive relationship with the company having a high reputation. Were it has also observed that there is no significant positive relation between companies participating in social activities, with high reputation firms.

Companies' perceptions towards adopting environmental accounting & ethics, and its impact on building corporate image and reputation, have a significant positive relationship with the company saying that corporate image and reputation will undoubtedly increase if they adopt environmental accounting and ethics with high reputation company. Very few companies with low reputation say that even after adopting ethics and environmental responsibility. There will be no impact on their corporate image, or their corporate image will decrease.

The analysis provides evidence that all factor, which had, consider as it will affect the corporate image and reputation. These have been disproving as eight out of seven



hypothesis found to be having a significant relationship. One hypothesis found having no significant relationship in building a corporate image. That highlights not all factor of ethics & environmental responsibility affect in building corporate image, but overall some element of factors combinable influence in building corporate image & reputations. Hence company must not only focus on factors like economic, legal but also take into consideration factors like ethical, environmental and social responsibility. Those are also becoming an essential factor, as some elements are profoundly influencing in building corporate image and reputation in present globalized markets. However, while the findings in this study are consistent with prior studies by (Iqbal, et al. October 2013) were they concluded environmental accounting implementation effect on environmental information disclosure, environmental information disclosure effect on company value/image.

The fifth objective was to study the role of government towards sustainable environmental development in business enterprises in Goa. To evaluate the same one primary hypothesis was framed saying that there is no significant role of government towards sustainable environmental development in business enterprises in Goa. Were the analysis & finding of this hypothesis convey that government has played a significant decisive role towards sustainable environmental development in business enterprises in Goa, at the same time there are endless opportunities for improvement which also has observed that can tackle in the near-future by Government of Goa and India.

The examination shows the role played by the different government institution of our country regarding environmental protection conservation and sustainable development. That is right through registration of industries, providing environmental clearances certification, enforcing various environmental laws, and regulation. Tracking on companies to see how well they have implemented laws, as well as taking legal action. Levying fines and penalties to those companies failed in compliances with various laws. Also supporting and encouraging companies those have outperformed in environmental activities of their units through granting schemes and awards for becoming environmental – friendly companies. As well as providing training to employees of the various company with matters like environmental, safety, occupation, and health.

Goa State Pollution Control Board (GSPCB) plays the role of Providing environmental clearances certification, imposing various laws, monitoring the various laws, levying fines

and penalties against violation of various environmental laws and regulation. Even though GSPCB have been working well on the role which they have provided as per the Goa State Government and Government of India, there are many steps could have been taken by GSPCB of further supporting environmental protection and sustainable development. Independent air and water monitoring committee should have been set in every industrial estate separately in the state of Goa. That would have given the fair picture of which industrial estate is doing well regarding controlling pollution as compared to the other industrial estate. Further research could have conducted. Why that particular industrial estate is performing well. A similar result could have been implemented by the other industrial estate as well. Similarly base on the best environmental practices adopted by those companies that have achieved by best environmental practices awardees. All such practices should have been listed out have been given exposure through reporting to all other companies, they should have given a time frame to implement such best environmental practice, as well as provided some grant or benefits to attract more companies to implement such best environmental practices.

Directorate of Industries and Trade and Commerce (DITC) Play the role of right from registration of industries, categorizing them bases of their working areas like red, orange, green categories of industries. Also supporting and encouraging companies those have outperformed in environmental activities through granting schemes. Even though, (DITC) have performed well in the role which they have provided by the Government of Goa and Government of India. Still, they could have worked out on the specialized environmental schemes. Similar to what they have (Goa State Financial Incentives to the Industries / Companies for Certification and Patenting Scheme, 2003) where they provide reimbursement. Specialized environmental – friendly scheme could have developed like companies those adopt ISO 14001 or even foster environmental friendly technology installed should have given reimbursement, particular focus point should have been on orange and red categories companies implementing it. Similarly, special schemes should have formulated on renewable energy for attracting more industries for the adoption of renewable energy like solar, wind, tidal.

Inspectorate of Factories and Boilers (IFB) plays the role of implementation of various laws, as well as inspection of factories and boiler regularly, also provide academic as well as non-academic courses and training to employees of the various companies with matters

like environmental, safety, occupation, and health. Even though, (IFB) has performed his role well that is provided by Governmental of Goa and Government of India. Still, improvement could have done on non-academic courses as there is no specialized course towards environmental pollution control, conservation, and adoption of non-renewable and renewable resource, highlighting the critical role of environment in the survival of human-being. Even the two-day, three-day and five-day course should have conducted more as compared to the one-day course. The course should have been made mandatory for companies falling under orange and red categories, every five years this course should have been made compulsory.

Ministry of Environment, Forest and Climate Change (MOEFCC) play an important role right from registration of industries, providing environmental clearances certification, enforcing various environmental laws, and regulation. Implementation of laws, legal action, levying fines and penalties to those companies failed in compliances with various laws. Also supporting and encouraging companies those have outperformed in environmental activities of their units through granting schemes and awards for becoming environmental – friendly companies. Even though they are performing their role well that is provided by Government of India, the specialized committee should have formed which will look after schemes; environmental awards should have granted to each state of those companies those are outperforming in environmental activities.

The sixth objective was to analysis pre, and post effects of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa. To evaluate the same one primary hypothesis was framed that says there is no positive effect of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises in Goa.

The analysis & finding of this hypothesis portrays that corporate environmental accounting and ethical practices carried out by business enterprises in Goa has been affected positively through the introduction of Company Act 2013 and enforcement of (Corporate Social Responsibility) Policy Rules 2014. Those companies which were involved in CSR activities even before enforcement of Company Act 2013(Corporate Social Responsibility) Policy Rules 2014. For them, this rules has become the pakka path as till now they were

heading there CSR activities on the kutch path. In fact, this rule has become the backbone for CSR activities because it not only serves those corporates who are carrying out these CSR activities but also to the regulatory bodies. As regulatory bodies now have a specific direction towards what they expect from the companies through their CSR activities and what companies genuinely are doing through CSR activities. That can be easily traced now through company's annual report by this regulatory body. As disclosure of CSR activities of companies now being made mandatory. Those high-profit earnings companies which were escaping earlier and not spending any of their profits towards society for sustainable development, as per corporate social responsibility policy rules 2014 now those companies have to spend a fair amount towards the development of society compulsorily. These are some of the ways corporate social responsibility policy rules 2014 has played the significant role in organizing, enforcing, leading, controlling, and monitoring the CSR activities of the companies.

The mandatory enforcement of corporate social responsibility policy rules 2014 has also brought to an end to the traditional views of Indian people, as peoples are to look towards government agencies as if whole and soul mate for their development. These views of people of India have entirely changed as people's expectations are now also increased from corporates. Corporates are also considered equivalently responsible for sustainable development.

However, the findings of this study are in line with prior studies by (Verma & Kumar, 2014) researched to investigate the expenditure pattern of corporates towards CSR activities in the period of voluntary spending and based on the results, assess whether attachment of such a provision in the act was necessary or not. Where the analysis of their study showed that the CSR spending has been very-low as a percentage of revenue and profits during the stage of voluntary spending, the results also suggest that spending on environment and pollution control is not on the priority list of companies. Whereas authors concluded based on their finding, the insertion of this provision is an appropriate step by the regulators for making corporates more socially responsible.

### 5.3 CONCLUSION

In today world conserving and protecting the natural environment has become the core agenda of the whole world. As rightly said by (S.Radha 2004) in her research article that a major challenge for this 21<sup>st</sup> century is not the creation of wealth, but the management of health. Several countries, nation, corporates, social activities, government and societies at large are slowly realizing the destruction that they have made to the natural environment and their responsibility now onwards in conserving and protecting the natural environment; they also have started taking significant positive steps towards its. The main culprit behind the ultimate-destruction of the natural environment is rapidly growing hazardous industrialization for the sake of development. Now onwards it up to the people to decide at what extent they need this development at the cost of destruction of the natural environment. At this point, environmental accounting and ethical practices will play a significant role in conserving and protecting the natural environment. As environmental accounting will become useful and sometimes even necessary tool to learn more about the influences of environmental input/output of a company's activities on its bottom line and on the natural environment. Environmental accounting and reporting have been seen taking place in recent past. These were not seen few past decades before were corporates were hardly used to account and report their environmental activities. Were corporates usually reported their environmental activities in the past as a footnote in their annual report. However, in today's world environmental accounting and reporting has become a vital part of financial reporting.

This statement backed by sufficient evidence in the study as most foreign, public and large companies found having high Environmental Disclosure Index (EDI) score. Similarly, it has also observed that Indian, private, medium companies seen having less EDI score. These convey that factor like nationality, ownership, size does affect the level of environmental disclosure practices. This need to be looked form both side were on one side some companies are performing better as mentioned, which is a good sign for environmental accounting and reporting for near future, on other side were some companies those found not up to the mark. This side portrays that these companies are not taking environmental accounting and reporting as serious as they should have taken it. This evidence portrays that environmental accounting and reporting should be made

mandatory for all the section even for small and cottage industries. Special attention should have given towards Indian, private, medium, small and cottage industries because it should not happen where on one side, some corporates giving their full efforts in preserving the natural environment. Moreover, on other-side, some corporates are getting free hands towards the destruction of the natural environment, just for the sake of doing a lesser amount of destruction. This aspect has to be tackled by regulators and government by introducing environmental accounting and reporting mandatory for all companies irrespective of nationality, ownership, size, age, and sector.

As we found in the finding that there are very few companies with attitude or preferences as categories in ATO model that is where company do not want to comply and have decided not to comply well in advances as per their business philosophy. Such type of attitude and preference should completely-eliminate through applying similar compliances strategies as provide in ATO model by the various regulatory authorities of legal compliances. As each attitude and preference has to be handled separately like companies which are willing to do the right thing towards legal compliance. The producers and other-process towards fulfilling legal compliances should be made more clear and easy to worked on it. Similarly, companies which are trying hard to comply but they do not always get success in doing it, for such companies, regulatory authorities should frame and help desk where all their queries would solve with quickness and perfection. Companies which don't want to comply with such type of companies regulatory authorities should discourage through leaving hefty tax penalties, fines, suspension of licenses, such kind of hashed penalties must levy. Similarly, companies which have attitude or preferences where they have decided they will not comply at any case. Regulatory authorities should make use of full force of laws to see that companies with such type of philosophy get such a setback, through which they will never recover back (terminating the licenses, blacklisting, taking legal action against such ideology, even harsher). The outcome of such setback should create fear in the minds of other companies which have similar attitude or preference towards legal compliance. That will force them to change their business philosophy or inclination toward environmental legal compliance.

Corporate Sustainability Initiatives Index score put forwards that most of the companies are doing well in parameters identified for section operation and core business practice, where other two section index scores that are of organization & management and

environmental responsibility were found low as compared to operation and core business practice. Whereas overall CSI index score represents that there are a significant number of the measure has been taken by corporates, but there are still many parameters which have found to be having very-low CSI index score. Like awards, vision & mission, stand towards climate change, research, and development, donation, and sponsorship. In these areas, corporates have to take sufficient level of initiatives as these parameters are equivalently crucial in environmental protection and sustainable development.

As we observed some corporates tries to overshadow the environmental accounting and reporting practices or tries to escape from legal compliances regarding environmental or becoming less proactive in-regard to taking positive corporate sustainable initiatives, this irresponsible action will defiantly lead to hampering their corporate image and reputation. As the evidence portray that not all factor of ethics & environmental responsibility affect in building corporate image, But overall some element of factors combinable influence in building corporate image & reputations. These convey that company must not only focus on factors like economics, legal but also take into consideration factors like ethical, environmental and social. As these are the factors, those have found in an investigation that is highly influencing in building corporate image and reputation in today's globalized markets. Hence there is significant need to tackle this factor as gracefull as other economic factors have been taken care off by the corporates.

The significant role has been played by various government agencies that have observed as per finding of the study. Still, there are many steps could have been taken by GSPCB of further supporting environmental protection and sustainable development. One of the steps could be the implementation of independent air, and water monitoring mechanism & committee should have been set in every industrial estate separately in the state of Goa. DITC could have worked out on the specialized environmental schemes. Similar to what they have (Goa State Financial Incentives to the Industries / Companies for Certification and Patenting Scheme, 2003) where they provide reimbursement. IFB need to stress on specialized non-academic course towards environmental pollution control, conservation. The specialized committee should have formed which will look after. MOEFCC should have framed specialized committee which will monitor the adverse impact of corporates on the environment for each state independently.

The introduction and enforcement of corporate social responsibility policy rule 2014 have created a blueprint for everyone right from the regulator, government, social activities (NGO), customers, shareholders, stakeholders, society, and most importantly for corporates. This blueprint will lead the CSR activities of corporates in the right direction as before they were voluntary carried out and there was no proper way head. This CSR policy rule 2014 has not only specified the amount that is mandatory for corporates to spend towards CSR activities but also clarified the which all companies has to contribute compulsorily towards CSR activities. These two critical clauses have brought those companies which were escaping earlier or either spending lesser amount towards CSR activities. This statement has strongly sported through evidence. As the number of companies found to be framed CSR committees, as well as the percentage of profit being, spend towards CSR activities have observed towards increasing trend after enforcement of the Company Act 2013 (Corporate Social Responsibility policy rule 2014) in the study. This increasing trend will definitely, and should benefit the overall societal development as well as for environmental sustainability.

## **5.4 RECOMMENDATION**

Based on the findings of this empirical research study, the following recommendations have outlined that may be useful to the stakeholders, like accountants, auditors, investors, financial analyst, company management, lobby groups, community members, government, and the regulatory bodies responsible for setting standards.

- ❖ Environmental accounting and reporting found to be a useful tool in better environmental management as well as in building corporate image and reputation; hence it must be made mandatory for all business enterprises irrespective of factors like nationality, ownership, size, age and categories/sector.
- ❖ Companies must have independent environmental management department that will look after all the activities of the organization that damages the environment.
- ❖ Every company must have their separate code of environmental ethics in place that should indicate the attitude of reporting companies towards environment and society at large. Like environmental goals, environmental policy, environmental



vision, and mission statement, their stance towards global warming and environmental hazards and participation in social activities.

- ❖ The environmental audit must be made mandatory both internal as well as external for all the origination irrespective of factors like nationality, ownership, size, age and categories/sector.
- ❖ The adopting of international standards towards environmental management similar to ISO – 14001 must be made mandatory for at least large and medium-size firms and especially those companies which fall into the list of orange and red categories as per (DITC) Director of Industries, Trade, and Commerce.
- ❖ Implementation and reporting of Life Cycle Assessment (LCA) plan for monitoring potential environmental impacts of a product or process starting from the acquisition of raw materials and ending to the end of product life. Need to be made mandatory for all companies.
- ❖ Companies' annual report must disclose both positive as well as negative impact of their process on the natural environment, like the name of the pollutant, type/substances of pollutant (air, water, solid), the quantity of pollutant, and permissible limit of pollutant.
- ❖ Companies must adopt the three “R” solutions for reducing their environmental damage caused by manufacturing processes. That is by implementing “Reduces, Reuse, and Recycle” as their core ideology.
- ❖ Companies also need to focus on their research & development cell, as particular attention need towards environmentally friendly product development, clean process design, reduce the rate of usage of a natural resource, and conservation of non-renewable resource & using a renewable resource.
- ❖ Companies require disposing of old machinery and equipment those generate massive pollution or consumes more non - renewable energy has to replace by environmental friendly machinery, and those absorbs renewable energy or lesser non – renewable energy.
- ❖ Regulatory authorities may take serious action like leaving hefty tax penalties, fines, suspension of licenses, terminating the licenses, blacklisting, taking legal

action against such ideology of corporates those found to be non-compliances in environmental matters.

- ❖ All corporates need to concentrate seriously on all three sections of corporate sustainability initiatives that are firstly towards organization & management, secondly towards environmental responsibility, thirdly towards operation and core business practice.
- ❖ There are some companies those do not adopt or implement environmental accounting. These companies must implement environmental accounting mostly because it helps to comply with various environmental laws, gives a competitive advantage, improves pricing of the product, helps in building corporate image/goodwill.
- ❖ Government authorities, accounting bodies, and environmental scientists may develop necessary standards especially for regulating environmental accounting and reporting practices.
- ❖ Government agencies may consider coming up with sufficient level of support for the environmentally friendly company, for providing certain tax holidays or consecution, through reimbursing the amount spend towards the adoption of greener technologies, and giving them recognition through providing awards and rewards.
- ❖ A government agency may consider, for promote and spread awareness about environmental accounting and reporting across all categories/sectors of companies through conducting various seminars, workshop, conferences to highlighting the importance of environmental accounting and reporting in today's globalized market.
- ❖ Government agencies could develop specialized courses on topic environmental conservation and protection, to employees, management, suppliers, related members of companies as training and education programme, this may be made mandatory for all corporates irrespective of size, and sector/ categorize.
- ❖ Companies may take initiatives voluntarily in participating in social activities like tree plantation, cleaning drives, social rally, involving in Swachh Bharat Nital Goem Abhiyan.

- ❖ Goa is at Prime location to develop renewable energy Source at three different sections; firstly for generating solar energy as Goa has hardly covered up with clouds for 3 to 4 months in rainy season rest 8 to 9 month, we have clyster clear sky that firmly in favor of solar energy generation. Secondly, wind energy can be easily generated throughout the year in Goa as a strong wind blows at coastal belts and hill regions as we are facing towards the Arabian sea. Thirdly tidal energy generation is also possible as we have a long coastline on the west side. These all three section may develop by the government with corporate supports.
- ❖ Government and corporates in collaboration must develop rainwater harvesting mechanism in every industrial estate. That will store rainwater that gets drain form each company and utilizing this water for the whole industrial estate.
- ❖ The government may consider installing air & water quality monitoring mechanism and independent committee at each industrial estate.
- ❖ Government regulatory bodies may include some more clauses in Corporate Social Responsibility Policy Rule 2014 were companies compulsorily need to a lot some portion of profit, especially towards environmental sustainability.
- ❖ Corporate environmental, social responsibility is something that needs to be practiced by the business enterprises beyond legal boundaries. Because finding suggests that each & every organization is utilizing environmental resources like land, water, air, flora, fauna, and non-renewable resources such as minerals and fossil fuels and many more.
- ❖ The government may consider developing in each industrial estate an independent waste treatment plant, and collection point where a waste of this particular industrial estate has collected and treated.
- ❖ The government must encourage research and development by collaborating with those corporates that don't have their independent R&D cell, especially in the field of environmental accounting and reporting.

## 5.5 CONTRIBUTION TO KNOWLEDGE

- This empirical study has contributed to the body of existing literature by developing Environmental Disclosure Index (EDI) in analyzing different factors influencing the level of corporate environmental disclosure practices of business enterprises. Interpreting this environmental disclosure index score with the help of different statistical tools like median, mean rank, Mann Whitney (U) test, multiple regression models, independent sample T-Test. These are an improvement over the environmental disclosure index developed by (Kumar, 2012).
- This study contributes to existing literature towards evaluating the extent of legal compliance of business firm on environmental accounting and disclosure practices and presenting their current approaches towards legal compliance of business firm on environmental accounting and disclosure practices, with the help of (ATO) compliance model of Australia Taxation Office.
- The study contributes through developing Corporate Sustainability Initiatives (CSIs) Index in evaluating the measures taken by industries to prevent the environment from harmful causes. Interpreting measure with the help of statistical tools like percentage and Pearson Chi-square Test for formulating Corporate Sustainability Initiatives (CSIs) index score. These are an improvement over (Jose and Saraf 2013) corporate sustainability initiatives.
- This study contributes to portraying the significant role of environmental accounting and ethics in building corporate image, by evaluating factors like high reputation firms, low reputation firms. These are an improvement over Carroll's (1979) model of CSR programs influence on its corporate image and reputation.
- This study contributes to the analytical literature on the role played by the government towards sustainable environmental development in business enterprises.
- To best of the researcher knowledge, this study contributes to the body of existing literature by providing a first attempt into a comparative analysis of the pre and post effects of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by

business enterprises in Goa. With the assistance of statistical tools like percentage, Pearson Chi-square test, Wilcoxon Signed Rank test, and Paired Sample T-test.

- This study is useful to regulator, Goa State Pollution Control Board, Directorate of Industries Trade and Commerce, Inspectorate of Factories and Boilers, Ministry of Environment, Forest and Climate Change, Government of Goa, Government of India. In framing guideline, schemes, courses, awards, towards environmental accounting and ethical practices.
- This study is useful to large and medium-sized corporates to realize their present position and future steps to be taken for further development in environmental accounting and ethical practice. Similarly small & cottage industries can improve their environmental accounting and ethical practices.

## **5.6 SUGGESTION FOR FURTHER RESEARCH**

In the view of the limitations of this research, suggestions for further research in this area could continue in numerous directions.

- The small and cottage industries have been ignored in this study mainly because large and medium-size companies are considered more responsible towards environmental destruction as compared to the small and cottage industries, and primarily because of large and medium-size companies mandatorily liable towards environmental sustainability as per corporate social responsibility policy rule 2014. However, there is no denying that fact that small and cottage industries are playing a significant role in the economic growth and development of the country and at the same time they are also equivalently contributing towards the destruction of the natural environment through different types of pollution. Therefore they are also not less socially responsible in this aspect. Hence there is need to investigate the role and responsibility of small and cottage industries in the field of environmental accounting and ethical practices in the form of further research.
- The service and mining sector has ignored in the study due to the restricted time frame of the study and as there was a ban on mining for few financial years 2012-13 to 2014-15 as per Supreme Court. However, we cannot overlook these two

sectors, as service and mining sector are equivalently liable towards environmental sustainability because there are many services rendering and mining companies those come under the mandatory regulation of corporate social responsibility policy rule 2014. Where mining had mainly banned due to a violation of environmental laws, hence there is serious need to investigate the pre and post ban impact on their environmental accounting and ethical practices. Evaluate the measures taken by industries to prevent from harmful causes to the environment of Goa in pre and post-ban period and to understand if there is any change in mining companies attitude towards the natural environment, that can be carried out in the form of further research.

- This study has limited in evaluation to 4 year that is from 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2016. Due to the Company Act, 2013 has newly introduced from 1<sup>st</sup> April 2014, and there is only two financial year time gap that is from 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2016 for analyzing data related to post Company Act 2013. However, as the time passes future researcher in this area of analyzing pre, and post effects of Companies Act 2013 (Corporate Social Responsibility) Policy Rules 2014 on corporate environmental accounting and ethical practices carried out by business enterprises. Should consider it necessary to extend the number of periods studied to capture more recent global trends.
- The further research study can be carried out towards the role of information technology in environmental protection and management and environmental accounting and ethical practice of business enterprises.
- Further study can be carried out on the role of environmental accounting and ethical practices towards E-waste management.
- For further research on environmental accounting and ethical practices, an effort should be taken by the future researcher to increase the number of selected industries.
- Further research can opt from the collective viewpoint of financial experts, chartered accountant, environmentalist, social activist, and company personal towards environmental accounting and ethical practices.
- Further study can opt towards environmental accounting in local government.

## **5.7 SUMMARY OF CHAPTER**

The finding, conclusion, and recommendation chapter has provided detail summary of all objective wise final interpretation and significant finding that has evident through hypothesis testing towards environmental accounting and ethical practice of business enterprises of Goa. This chapter also derived to the conclusion from the concrete evidence and finding of the study and discussed the appropriate real-time recommendation for the regulatory authorities, corporate's and government. The chapter also covered the contribution made by the researcher in the field of environmental accounting and ethics and even conveyed different way and scope for a further researcher on the research topic. Additional, the thesis also comprises bibliography that provides an exhaustive list of all books, journal, thesis, annual reports reviewed, government and corporate's official websites links that utilized as references for this research study. Whereas appendix comprises of research center letter of request that was used for getting the permission of corporate's house for conducting a personal interview and it also includes the structured questionnaire that had utilized for the personal interview with company officials for collecting data.

## VI - BIBLIOGRAPHY

- ❖ Kumar, K. S., Reddy, G. P., & Ramaiah, G. (2014). The Importance of Business Ethics in Globalisation - A Study. *International Journal of Advancements in Research & Technology*, 3 ( 4), 285 - 298.
- ❖ Adams, C., & Frost, G. (2006). *Accounting for ethical, social, environmental and economic issues: towards an integrated approach*. London: The Chartered Institute of Management Accountants.
- ❖ Ahmad, A. (2012). Environmental Accounting & Reporting Practices: Significance and Issues: A Case from Bangladeshi Companies. *Global Journal of Management and Business Research*, Vol - 12 (No 14), 119 - 127.
- ❖ Alcouffe, S., Berland, N., Drevet, B., & Essid, M. (2010). *An Empirical Study of Environmental Cost Drivers*. France: HAL Archives - Ouvertes.
- ❖ Alexander, C., & Sean, B. (2015). Doing Well by Doing Good: The Benevolent Halo of Corporate Social Responsibility. *Journal of Consumer Research*, 41, DOI.
- ❖ Alkababji, M. W. (2014). Voluntary Disclosure on Corporate Social Responsibility: A Study on The Annual Reports of Palestinian Corporations. *European Journal of Accounting Auditing and Finance Research*, Vol.2(No.4), 59 - 82.
- ❖ Andrew, J. (2000). The Environmental Crisis and the Accounting Craft, *Accounting Forum*. *Accounting Forum*, Vol - 24(No - 2), 197 - 223.
- ❖ Angel, N., & Philip, P. (2003). *Factors that Determine the Need of Environmental Management Accounting in Industry Case study of Trelleborg AB*. Sweden: The International Institute for Industrial Environmental Economics.
- ❖ Apostolou, B., Dull, R. B., & Schleifer, L. L. (2013). A Framework for the Pedagogy of Accounting Ethics. *Accounting Education: an international journal*, Vol. 22(No. 1), 1 - 17.



- ❖ Balmer, J. M., & Gray, E. R. (2000). Corporate identity and corporate communications: creating a competitive advantage. *Industrial and Commercial Training*, 32 (7), 256 - 261.
- ❖ Banerjee, R., & Dinesh, J. A. (2014). *Evolution of CSR in INDIA*. Bangalore: Jana Urban Foundation.
- ❖ Beder, S. (1994). The Role of Technology in Sustainable Development. *Technology and Society*, Vol. 13(no. 4), 14 - 19.
- ❖ Bergquist, A.-K., & Soderholm, K. (2011). Green Innovation Systems in Swedish Industry, 1960-1989. *The Business History Review*, Vol. 85(No. 4 ), 677 - 698.
- ❖ Bhardwaj, G., & Agarwal, S. (2014). Business Ethics and Corporate Social Responsibility at TATA Group. *International Journal in Management and Social Science*, Vol.2 (No. 9), 37 - 47.
- ❖ Bhatia, A. (2015). Application of Economic Instruments in Environmental Policy. *Asian Journal of Research in Social Sciences and Humanities*, Vol. 5(No. 5), 81 - 92.
- ❖ Bram, E. (2013). *Reconciling Theory and Practice in Environmental Accounting*. Netherlands: Statistics Netherlands Henri Faasdreef 312, 2492 JP The Hague.
- ❖ Carreira, F., Damiao, A., Abreu, R., & David, F. (2014, March 16). Environmental Disclosure - From the Accounting to the Report Perspective. *Science and Technology Publication*, pp. 496-501.
- ❖ Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *Academy of Management Review*, 4(4), 497-505.
- ❖ Cavalieri, E. (2007). Ethics and Corporate Social Responsibility. *Symphonya Emerging Issues in Management*, 24 - 34.
- ❖ Cetindamar, D., & Husoy, K. (2007). Corporate Social Responsibility Practices and Environmentally Responsible Behavior: The Case of the United Nations Global Compact. *Journal of Business Ethics*, Vol. 76(No. 2 ), 163 - 176.

- ❖ Charles, H. C., & Dennis, M. P. (2013). Green accounting: Reflections from a CSR and environmental disclosure perspective. *Critical Perspectives on Accounting*, 443 – 447.
- ❖ Choubey, B., & Pattanayak, J. K. (2014). Curriculum for Environmental Accounting: A Comparative Analysis of the Viewpoints of Manufacturing and Financial Service-Rendering Organizations. *Journal of Accounting Research & Audit Practices*, Vol. XIII( No - 1), 62 - 78.
- ❖ Christini, G., Fetsko, M., & Hendrickson, C. M. (2004). Environmental Management Systems and ISO 14001 Certification for Construction Firms. *Journal of Construction Engineering and Management*, 330 - 336.
- ❖ Damian, N. T. (2006). Environmental Management Accounting for an Australian Cogeneration Company. Australian: Royal Melbourne Institute of Technology ( RMIT ) University, Australian.
- ❖ Das, P. K. (2016). Environmental Accounting: A Conceptual Study of Indian Context. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, Vol:10(No:8), 2914 - 2920.
- ❖ Datta, M. (2010). Corporate Social Responsibility and Environmental Management with Special Reference to Pharmaceutical Industries in India. *Indian Journal of Commerce & Management Studies*, Vol – I (No - 1), 7 - 13.
- ❖ Debnath, S., Bose, S. K., & Dhalla, R. S. (2012). Environmental Management Accounting: An Overview of its Methodological Development. *International Journal of Business Insights & Transformation*, Vol - 5(No - 1), 44 - 57.
- ❖ Dey, S. K. (2013). Ethical Corporate Reporting Practice in India. *Researchjournali's Journal of Business Ethics*, Vol. 1 (No. 1), 1 - 10.
- ❖ Edens, B., & Harlingen, g. t. (2013). Reconciling Theory and Practice in Environmental Accounting. Netherlands: Statistics Netherlands.
- ❖ Elliot, S. (2011). Transdisciplinary Perspectives on Environmental Sustainability: A Resource Base and Framework for IT-Enabled Business Transformation. *Management Information Systems(MIS Quarterly)*, Vol. 35 (No. 1), 197 - 236.

- ❖ Eric, O. W. (1995). A Reflexive Model of Environmental Regulation. *Business Ethics Quarterly*, Vol. 5(No. 4), 779-794.
- ❖ Firoz, M., & Ansari, A. A. (2010). Environmental Accounting and International Financial Reporting Standards (IFRS). *International Journal of Business and Management*, Vol. 5(No. 10), 105 - 112.
- ❖ Fussel, L., & Georg, S. (2000). The Institutionalization of Environmental Concerns: Making the Environment Perform. *International Studies of Management & Organization*, Vol. 30(No. 3), 41 - 58.
- ❖ Gadenne, D. L., Kennedy, J., & McKeiver, C. (2009). An Empirical Study of Environmental Awareness and Practices in SMEs. *Journal of Business Ethics*, 45 - 63.
- ❖ Ganescu, M. C. (2012). Corporate social responsibility, strategy to create and consolidate sustainable businesses. *Theoretical and Applied Economics*, XIX(11(576)), 91-106.
- ❖ Gautam, R., & Singh, A. (2010). Corporate Social Responsibility Practices in India: A Study of Top 500 Companies. *Global Business and Management Research: An International Journal*, Vol. 2( No. 1), 41-56.
- ❖ Gergely, T. (2003). Evaluation of Environmental Performance of Companies. *Society and Economy*, Vol. 25 (No. 3), 383-402.
- ❖ Goran, M., Barac, N., & Aleksandra, A. (2009). Corporate Social Responsibility in the Globalization Era. *Series: Economics and Organization*, 6(2), 89 - 104.
- ❖ Goswami, M. (2014). Corporate Environmental Accounting: the issue, its practices, and challenges: A study on Indian corporate accounting practices. *Journal of Business and Management*, 16(5), 36 - 42.
- ❖ Grade, A. R. (2011). Business Ethics in India. *International Management Journal*, 78 - 84.
- ❖ Haghseta, F. S. (2003). *Information Technology and Sustainable Development: Understanding Linkages in Theory and Practice*. New York: Massachusetts Institute of Technology.

- ❖ Haili, J. (2013). The Research on Environmental Accounting Information Disclosure in China under Low Carbon Economy. *International Journal of Applied Environmental Sciences*, Vol - 8(No - 12), 1539 -1546.
- ❖ Haripriya, S. (2005). *Environmental Accounting – Concept Note*. Chennai: Madras School of Economics.
- ❖ Hartmann, F., Paolo, P., & Young, A. (2013). Carbon Accounting: Challenges for Research in Management Control and Performance Measurement. *A Journal of Accounting, Finance, and Business Studies*, Vol. 49(No. 4), 539 - 563.
- ❖ Hecht, J. E. (2000). Accounting for the Environment: New Directions for the United States? *Natural Resources & Environment*, Vol. 14(No. 3), 179 - 184.
- ❖ Heikkurinen, P. (2010). Image Differentiation with Corporate Environmental Responsibility. *Corporate Social Responsibility and Environmental Management*, 142– 152.
- ❖ Henri, F. J., & Journeault, M. (2008). Environmental performance indicators: An empirical study of Canadian. *Journal of Environmental Management*, 165 - 176.
- ❖ Heyvaert, V. (2012). Regulatory Competition - Accounting For the Transnational Dimension of Environmental Regulation. *Journal of Environmental Law*, 1 - 31.
- ❖ Hossain, M., Islam, K., & Andrew, J. (2006). Corporate Social and Environmental Disclosure in Developing Countries: Evidence from Bangladesh. *Research Online*, 1 - 22.
- ❖ Houghton, R. A. (2013). Keeping management effects separate from environmental effects in terrestrial carbon accounting. *Global Change Biology*, Vol - 19, 2609 - 2612.
- ❖ Huang, H. (2014). Development and Implementation of Environmental Accounting in China. *Environmental Engineering and Management Journal*, Vol. 13(No. 5), 1127 - 1138.
- ❖ Iona, I., & Gheorghe, F. F. (2014 ). The innovator role of technologies in waste management towards the sustainable development. *Procedia Economics and Finance*, 420 – 428.

- ❖ Iqbal, M., Sutrisno, T., Prihat, A., & Rosidi. (2013). Effect of Environmental Accounting Implementation and Environmental Performance and Environmental Information Disclosure as Mediation on Company Value. *International Journal of Business and Management Invention*, 2 (10), 55-67.
- ❖ Ismail, M. S., Aliza, R., & Faizah, D. (2014). Environmental management accounting practices and Islamic corporate social responsibility compliance: evidence from ISO14001 companies. *Procedia - Social and Behavioral Sciences*, 343 – 351.
- ❖ Jose, P. D., & Saraf, S. (2013). *Corporate Sustainability Initiatives Reporting: A study of India's most valuable companies*. Bangalore: Indian Institute of Management Bangalore.
- ❖ Joshi, S., Krishnan, R., & Lave, L. (2001). Estimating the Hidden Costs of Environmental Regulation. *The Accounting Review*, Vol. 76(No. 2), 171-198.
- ❖ Jurisova, V., & Durkova, K. (2012). CSR Communication and its Impact on the Corporate Image. *Review of Applied Socio-Economic Research*, 4(2), 145 - 149.
- ❖ Kamal, E. M. (2015). Documentation of Environmental Disclosure Practices in the Oil Companies in the Countries of the Arab Spring – Some Evidence from Egypt, Libya, and Tunisia. *Journal of Economics, Business, and Management*, Vol. 3(No. 10), 954 - 960.
- ❖ Kaur, K., & Rajneesh. (2014). Legal Framework of Environmental Accounting in India. *International Journal of Research in Commerce, IT & Management*, Vol - 4 (No - 10), 98 - 101.
- ❖ Krpan, S. (2011). *Compliance and Enforcement Review, A review of EPA Victoria's approach*. Australia: EPA Victoria.
- ❖ Lenguyen, T. (2011). The Impact of Corporate Social Responsibility Programs on a Company's Image and Reputation: A Case Study. *AU - GSB- E-Journal*, 4(2), 18 - 27.
- ❖ Lewis, P. V. (1985). Defining 'Business Ethics': Like Nailing Jello to a Wall. *Journal of Business Ethics*, Vol. 4(No. 5), 377-383.

- ❖ Lior, N. (2013). Sustainability Ethics and Metrics: Strategies for Damage Control and Prevention. *Journal of Environmental Accounting and Management*, Vol - 1(No - 1), 15 -24.
- ❖ Madawaki, A. (2014). Impact of the regulatory framework and environmental factors on accounting practices by firms in Nigeria. *Procedia - Social and Behavioral Sciences*, 282 - 290.
- ❖ Madрахimova, F. (2013). History of Development of Corporate Social Responsibility. *Journal of Business and Economics*, Volume 4(No. 6), 509-520.
- ❖ Makori, D. M., & Jagongo, A. (2013). Environmental Accounting and Firm Profitability: An Empirical Analysis of Selected Firms Listed in Bombay Stock Exchange, India. *International Journal of Humanities and Social Science*, Vol. 3 (No. 18), 248 - 256.
- ❖ Malarvizhi, P., & Yadav, S. (2008). “Corporate Environmental Reporting on the Internet” An Insight into Indian Practices. “Environmental Strategy” in the 11th Annual Convention of the Strategic Management Forum (pp. 1 - 14). Kanpur, India: Indian Institute of Technology.
- ❖ Mariana, C. G. (2012). Corporate Social Responsibility, A Strategy to Create and Consolidate Sustainable Businesses. *Theoretical and Applied Economics*, XIX( 11(576)), 91-106.
- ❖ Masanet-Llodra, M. J. (2006). Environmental Management Accounting: A Case Study Research on Innovative Strategy. *Journal of Business Ethics*, Vol. 68(No. 4), 393-408.
- ❖ Mathews, M. R. (1995). Social and Environmental Accounting: A Practical Demonstration of Ethical Concern? *Journal of Business Ethics*, Vol. 14(No. 8), 663 - 671.
- ❖ Miles, M. P., & Covin, J. G. (2000). Environmental marketing: A source of reputational, competitive, and financial advantage. *Journal of Business Ethics*, 299 - 311.

- ❖ Murthy, S. M. (2014). Conceptual Framework of Environmental Accounting and Reporting: An Overview. *EPRA International Journal of Economic and Business Review*, Vol - 2(No - 2), 43 - 51.
- ❖ Nair, S., & Francis, C. (2003). *Environmental Management in the Indian Fertiliser Industry*. Cochin, Kerala: School of Management Studies Cochin University of Science and Technology.
- ❖ Notarnicola, B., Sala, S., Anton, A., McLaren, S. J., Saouter, E., & Sonesson, U. (2016). The role of life cycle assessment in supporting sustainable agri-food systems: A review of the challenges. *Journal of Cleaner Production*, 399 - 409.
- ❖ Nulkar, G. (2014). SMEs and environmental performance – A framework for green business strategies. *Procedia - Social and Behavioral Sciences*, 130 - 140.
- ❖ Pandey, S. (2015). Does India Require Environmental Super-regulator: A Critical Analysis of the Extant and Innovate. *Procedia Earth and Planetary Science*, 247 – 253.
- ❖ Parikh, J., Singh, V., Sharma, S., & Buragohain, C. (2008). *Natural Resource Accounting in Goa Phase II*. New Delhi: Integrated Research and Action for Development.
- ❖ Pramanik, A. K., Shil, N. C., & Das, B. (2007). Environmental accounting and reporting With special reference to India. *Munich Personal RePEc Archive*, 1 - 26.
- ❖ Prashanth, T. M. (2013). Law Relating to Corporate Social Responsibility in India. *International Journal of Research and Analysis*, 350 - 354.
- ❖ Purdy, J. (2013). Our Place in the World: A New Relationship for Environmental Ethics and Law. *Duke Law Journal*, Vol - 62(4), 857 - 932.
- ❖ Ranga, S., & Garg, R. (2014). Legal Framework for Environmental Accounting in India. *International Journal of Management and Social Sciences Research*, Vol. 3(No. 6), 1 - 3.
- ❖ Rashida, N. N., Khalid, S. A., & Nor Irwani, A. R. (2015). Environmental Corporate Social Responsibility (ECSR): Exploring its Influence on Customer Loyalty. *Procedia Economics and Finance*, 31, 705 – 713.

- ❖ Rebelly, H., & Ragidi, V. (2008). Ethical Issues in Business & Corporate Governance A Case Study of NTPC- Ramagundam. *International Journal of Marketing, Financial Services & Management Research*, 62 - 67.
- ❖ Rob, W., & Diane, H. (2012). *The Legislation, Regulatory Models, and Approaches to Compliance and Enforcement*. University of Tasmania: School of Sociology and Social Work.
- ❖ Ronald, C. I.-E. (2011). Corporate Reputation & Firm Performance: Empirical Literature Evidence. *International Journal of Business and Management*, 6(4), 197 - 206.
- ❖ Saeidi, S. P., & Sofian, S. (2014). A Proposed Model of the Relationship between Environmental Management Accounting and Firm Performance. *International Journal of Information Processing and Management*, Vol - 5(No - 3), 30 - 41.
- ❖ Samir, A. Q., & Hugh, S. G. (2008, June). The Use of ISO 14001 in India: More Than a Certificate on the Wall? *Environmental Practice*, 10 (2), 53 - 65.
- ❖ Sherkhane, A., Saxena, V. B., & Veliath, J. (2014). *Economic Survey 2012 - 13*. Panaji - Goa: Government of Goa Directorate of Planning, Statistics & Evaluation.
- ❖ Sherkhane, A., Saxena, V. B., & Veliath, J. (2016). *Economic Survey 2014 -15*. Porvorim Goa: Government of Goa Directorate of Planning, Statistics, and Evaluation.
- ❖ Shrivastava, P. (1995). Environmental Technologies and Competitive Advantage. *Strategic Management Journal*, Vol. 16, 183 - 200.
- ❖ Singh, H. B. (2015). Achieving Environmental Sustainability of Small and Medium Enterprises Through Selective Supplier Development Programs. *International Journal of Advanced Research in Management and Social Sciences*, Vol. 4 (No. 2), 35 - 50.
- ❖ Sonara, C. K., & Sharma, D. (2012). Corporate Environmental Accounting & Reporting: An Empirical Study of Different Groups of Selected Companies in India. *Indian Journal of Accounting*, Vol. XLIII(No. 1), 15 - 30.



- ❖ Sujit Kumar, R. (2000). *Environmental Accounting: The Emerging Agenda for Corporate Accounting and Reporting*. West Bengal: University of Burdwan.
- ❖ Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 53 - 55.
- ❖ Thistlethwaite, J. (2011). Counting the Environment: The Environmental Implications of International Accounting Standards. *Global Environmental Politics*, Vol - 11(No - 2), 75 - 97.
- ❖ Uwalomwa, U. (2011). *Corporate Environmental Reporting Practices: A Comparative Study of Nigerian and South African Firms*. Nigeria: Department of Accounting, College of Development Studies Covenant University, Ota, Ogun State, Nigeria.
- ❖ Verma, A., & Kumar, V. C. (2014). An Analysis of CSR Expenditure by Indian Companies. *Indian Journal of Corporate Governance*, Vol 7(Issue 2), 82 - 94.
- ❖ Vyacheslav, M., & Larisa, M. (2015). Philosophical Underpinnings of Environmental Ethics: Theory. *Procedia - Social and Behavioral Sciences*, 1055 – 1061.
- ❖ Whybark, D. C., & Klassen, R. D. (1999). The Impact of Environmental Technologies on Manufacturing Performance. *The Academy of Management Journal*, Vol. 42(No. 6), 599 - 615.
- ❖ Xingqiang, D., Jian, W., Zeng, Q., & Yingjie, D. (2014). Corporate Environmental Responsibility in Polluting Industries: Does Religion Matter? *Journal of Business Ethics*, 486 - 507.
- ❖ Yucel, R., & Dagdelen, O. (2010). Globalization of markets, marketing ethics, and social responsibility. *Globalization - Today, Tomorrow*, 61 - 76.
- ❖ Zaman, M. D. (2013). Environmental Ethical Commitment (EEC): The interactions between business, environment and environmental ethics. *Procedia - Social and Behavioral Sciences*, 392 – 399.
- ❖ Zhongfu, Y., Jianhui, J., & Pinglin, H. (2011). The Study on the Correlation between Environmental Information Disclosure and Economic Performance-With

empirical data from the manufacturing industries at Shanghai Stock Exchange in China. Energy Procedia, 1218–1224.

- ❖ Directorate of Industries, Trade, and Commerce ([www.goaditc.gov.in](http://www.goaditc.gov.in))
- ❖ Goa State Pollution Control Board ([www.goaspcb.gov.in](http://www.goaspcb.gov.in))
- ❖ The Government of Goa Department of Science, Technology, and Environment ([www.dstegoa.gov.in](http://www.dstegoa.gov.in))
- ❖ The Government of Goa Inspectorate of Factories and Boilers, Institute of Safety, Occupational Health and Environment. ([www.ifbgoa.gov.in](http://www.ifbgoa.gov.in))
- ❖ Official Gazette, Government of Goa Department of Printing and Stationery ([www.goaprintingpress.gov.in](http://www.goaprintingpress.gov.in))
- ❖ Goa – IDC (Industrial Development Corporation) ([www.goaidc.com](http://www.goaidc.com))
- ❖ State Environmental Impact Assessment Authority Goa ([www.environmentclearance.nic.in/Staterecord.aspx?State\\_Name=Goa](http://www.environmentclearance.nic.in/Staterecord.aspx?State_Name=Goa))
- ❖ The Government of Goa Department of Forest ([www.forest.goa.gov.in](http://www.forest.goa.gov.in))
- ❖ Goa Chambers of Commerce & Industry ([www.goachamber.org](http://www.goachamber.org))
- ❖ Environmental Information System (Envis Centre) of Goa state Council for Science & Technology ([www.goaenvis.nic.in](http://www.goaenvis.nic.in))
- ❖ The Government of India Office of the Registrar General & Census Commissioner Ministry of Home Affairs ([www.censusindia.gov.in](http://www.censusindia.gov.in))
- ❖ The Government of India Ministry of Commerce and Industry Department of Industrial Policy & Promotion ([www.dipp.nic.in](http://www.dipp.nic.in))
- ❖ Ministry of Environment, Forest and Climate Change Government of India ([www.envfor.nic.in](http://www.envfor.nic.in))

## VII - APPENDIX - (I)

### RESEARCH CENTRE LETTER OF REQUEST

XAVERIAN EDUCATIONAL SOCIETY

#### Fr. AGNEL COLLEGE RESEARCH CENTRE IN COMMERCE

Accredited with B++ by NAAC

Affiliated to Goa University

Pilar-Goa,403203

Email:fragnelco@rediffmail.com | Website :www.fragnelcollege.com | Tel: (Off.)0832-2218673

FC No./ 21873

Date:29<sup>th</sup> March 2016

#### TO WHOMSOEVER IT MAY CONCERN

Sir/Madam

**Mr. SUDESH SATYAVAN SHETKAR**, Research Scholar, GOA UNIVERSITY under Fr. Agnel College Research Centre, Pilar –Goa, is pursuing his Ph.D. (Research) on the Title “**Environmental Accounting and Ethical Practices: The Study Of Selected Business Enterprises in Goa**”.

We request you to kindly permit him to visit to your Institution / Company and furnish him the required information/data which will be used in his study and help him in completion of his Ph.D. (Research Work)

We assure you that the information/data provided/supplied will be kept in complete secrecy and will be used for the research work only.

We solicit your co-operation for the same.

Yours faithfully,

(Dr.) Fr. Fredrick Rodrigues  
Principal,

Fr. Agnel college of Arts & com, pilar-Goa



Dr. Anthony Rodrigues  
Research Guide

## APPENDIX – (II)

### AN APPEAL TO COMPANY

Dear Sir/Madam,

I am conducting a survey on Environmental Accounting in company located at Goa as a part of my doctoral research work. I would be grateful if you spare a few minutes to participate in it. I assure you total anonymity for your answers. No individual responses will be released. All answers will be aggregated and only used for research purpose.

Thank you for your cooperation.

**Mr. Sudesh Satyavan Shetkar**

Department of Commerce, Goa University, Research Scholar, Affiliated to Fr. Agnel College Pilar Research Centre in Commerce.

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### QUESTIONNAIRE

Name of the Company & Year of formation:

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Address of the company:

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Indian/ Foreign Company: \_\_\_\_\_

Public Ltd. / Private Ltd.: \_\_\_\_\_

Capital Invested & No. of employees: \_\_\_\_\_

Annual Sales / Turnover Rs: \_\_\_\_\_

Main product group: \_\_\_\_\_

Your designation in the company: \_\_\_\_\_

Highest Qualification: \_\_\_\_\_

Experience in the Present Organization: \_\_\_\_\_

Sex - F / M

1. Following are some statements about the Corporate Social Responsibility ( CSR ) perceptions and practices of the organization. For each item, there are five alternatives. Tick the response, which reflects your understanding of the Corporate Social Responsibility perceptions and practices of your organization.

Q.No.1	STATEMENTS	PRIORITY				
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
a.	Business is a social institution and should function like a responsible citizen of the society					
b.	CSR is “something” to be practiced by the business beyond the legal boundaries.					
c.	CSR should be perceived as a policy rather than a philosophy of the organization					
d.	The financial and economic objective of the organization is to increase the stakeholder value.					
e.	The organization should be socially responsible and disclose all social aspects, irrespective of their profit.					
f.	A company should initiate Corporate Social Responsibility practices which will benefit the needy and backward class.					
g.	A company should initiate Corporate Social Responsibility practices which will benefit a larger number of people in the society rather than a small group.					

2. Instructions Following are statements about ethical attitudes and practices of your organization. Tick the most appropriate response, which indicates your preference / priority for the following aspects

Q.NO. 2	STATEMENTS	PRIORITY				
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
a.	Moral values are the foundation for the success of a business.					
b.	All business can be reliable and truthful if it follows the fundamental moral values					
c.	A business should contribute to society towards its welfare and well – being.					

d.	Being transparent and promoting transparency is healthy sign of a business.					
e.	A business should not suppress the voice of the competitors.					
f.	A business cannot always achieve continuous improvement with measurable progress.					
g.	A business should always have respect towards customers feeling.					
h.	A business should have a long term vision.					
i.	It is very difficult to be a good corporate citizen.					
j.	It is necessary to lie in the business in order to survive the stiff competition.					
k.	A business should allow its competitor to grow alongside rather than follow dishonest practises to tarnish the image of its competitor					

3. Please tick the appropriate column on each of the statements.

Q.No.3	STATEMENT	PRIORITY				
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
a.	Every company should perform Environment Accounting & Disclosures practices					
b.	Even if it is not profitable.					
c.	Large companies should invest more in Environment Accounting & Reporting activities than small companies.					
d.	Multinational corporations should perform more corporate Environment Accounting & Disclosures activities than domestic companies.					
e.	For Environment Disclosures, companies must collaborate with NGO's.					
f.	For Environment Disclosures, companies should collaborate with government.					
g.	Business is for earning profits & not for charity / Environment Accounting & Disclosures practices.					

4. Do you agree that your business is utilising the environmental surroundings.

YES  NO

a) If Yes, which of the following resources is it utilising? (Multiple options can be ticked)

- Air
- Water
- Land
- Flora
- Fauna
- Non-renewable resources such as fossil fuels and minerals
- Renewable resources such as solar and wind energy.

5. Does your company have any?

a) Environmental goal  YES  NO

i. If Yes, type of goal set / achieved  Short term  Long term

ii. Mention goal achieved in past

iii. Future target to be achieved

---

b) Environmental policy  YES  NO

i. If Yes, kindly highlight the important ones

---

c) Environmental vision and mission statement,  YES  NO

i. If Yes, Mention:

---

d) Stand taken towards global warming and environmental hazards  YES  NO

i. If Yes, Mention your stand taken:

---

6. What are your company's major effluents during the process of production?

Substances	Pollutant	Quantity of effluents	Major effluents
Air			
Water			
Solid			

7. Does your firm have an environmental management department (equivalent such as environmental, health and safety department)?

YES  NO

8. For the below questions please mark the field of activities (Multiple options can be ticked)

a) Waste management

- Waste treatment plant (Partly / Completely)
- Hand over to local Government
- Hand over to private corporate for treatment

- Dump into open area
- Any other Process; Mention\_\_\_\_\_
- b) Environmental audit is carried out
  - No Audit of statements
  - Audit of statements-By Accountant
  - Audit of statements-By Internal auditor
  - Audit of statements-By External auditor
- c) Company has special cell of Research and Development
  - No special Research and Development cell
  - Depend on Government Research & Development cell
  - Depend upon other Company or Private R&D cell
  - Have special Research and Development Cell
- d) Research carried out in the cell
  - Environmentally friendly product development
  - Clean process design
  - Technology development
  - Reduce rate of usage of natural resource
  - Conservation of non-renewable resource & using Renewable resource
- e) Objective of all Environmental, Occupational safety and health programme is to promote a risk free safe environment to whom?
  - Workers
  - Employee family members
  - Employers & there family member
  - Customers
  - Suppliers
  - Nearby community & other members affected by the workplace environment.

9. Does your company have formal Training and education towards your employees with respect to environmental matters?

YES  NO

a) If Yes, by whom

- Companies seminar
- Workshop
- External faculty
- On the job

b) What is the periodicity of Training

- Every five year
- Every Second year
- Yearly
- Half Yearly

10. Do you have any ISO Certificate?

YES  NO



a) If Yes, Mention Name: \_\_\_\_\_

11. A company should voluntarily adopt ISO 14001 norms of environmental accounting and reporting?

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

12. Does your company undertake any Environmental Conservation initiatives?

- YES  NO

13. What are the various initiatives undertaken for conservation of ecology?

a) initiatives taken for supports of recycling activities

- YES  NO

i. If Yes, What type of things do you recycle? (Multiple options can be ticked)

- Plastic
- Wet waste
- Medical waste
- Metallic / paper
- E-waste
- Glass bottles
- Other\_\_\_\_\_

b) How many trees do you plant every year

- None  less than 100  100 – 500  500 – 1000  more than 1000

c) Where are these trees planted every year

- Surrounding areas of factory
- Within Industrial Estate area
- Government Forest area
- Private Forest area
- Road side / Highway divider
- Anywhere else: \_\_\_\_\_

d) Does your company carry out a cleaning drive in the surrounding areas of the factory or participate in local events to keep the surroundings clean?

- Not at all
- Monthly
- Quarterly
- Half yearly
- Yearly

e) Does your company encourage employees to participate as volunteers in any of the following activities

- Cleaning drives
- Tree plantation,
- Social rally

- Celebrating world Environmental day
- Any Other \_\_\_\_\_
- Not in any

- f) Does your company give donation / funds NGOs, Clubs, Societies etc. that conduct environmental conservation activities  
 YES  NO
- g) Is there any Plan or Life cycle assessment for monitoring potential environmental impacts of a product or process starting from acquisition of raw materials and ending to the end of product life?  
 YES  NO

14. What is the level of usage and steps taken for conservation of natural resources by the company?  
 (Where V-H = Very-High, H = High, M = Moderate, L = Low, V-L = Very-Low)

Resources	Level of usage in production					Level of Waste Generated					Recycled / Reused after Production				
	V-H	H	M	L	V-L	V-H	H	M	L	V-L	V-H	H	M	L	V-L
Water															
Raw materials															
Land															
Non Renewable Resource															
Renewable Resource															

15. Did your company achieve any Environmental awards or achievements in past?

- YES  NO

a) If Yes, Mention Year & name of award: \_\_\_\_\_

b) If Yes, from which of the following agencies did you'll receive the award

- Government agencies
- Non-government agencies (NGO)
- International Authorities
- local Authorities / Body
- Private society
- Any other institution

c) How many Environmental awards has your company achieved

Mention: \_\_\_\_\_

16. What are the different Machineries or equipment's installed by your company for conservation of natural resources? (Multiple options can be ticked)

- Energy-efficient lighting
- Energy-efficient equipment
- Water treatment plant

- Sewage treatment plant
- Rain water harvesting
- Waste treatment plant
- Installation of solar system generates electricity
- Wind energy generation system
- Air / water quality monitoring equipment
- Human motion sensors installed for air conditioners and lamps
- Any Other\_\_\_\_\_

17. The reasons behind preparing Environmental accounting? ( Give Rating 1 to 5 Star where Star 1 = Completely Disagree, Star 2 = Somewhat Disagree, Star 3 = Neither Agree nor Disagree, Star 4 = Somewhat Agree, Star 5 = Completely Agree )

Reasons	Rating
a. Provides better estimates of total cost of producing a product.	☆ ☆ ☆ ☆ ☆
b. Helps management in decision – making.	☆ ☆ ☆ ☆ ☆
c. Improves pricing of the product.	☆ ☆ ☆ ☆ ☆
d. Increase profitability.	☆ ☆ ☆ ☆ ☆
e. Gives competitive advantage.	☆ ☆ ☆ ☆ ☆
f. Helps in complying with environmental laws.	☆ ☆ ☆ ☆ ☆
g. Looks towards social cause.	☆ ☆ ☆ ☆ ☆
h. Increasing Internal and external pressure on organisation	☆ ☆ ☆ ☆ ☆
i. Helps in Building Corporate Image / Goodwill.	☆ ☆ ☆ ☆ ☆
j. Any Other_____	☆ ☆ ☆ ☆ ☆

18. The reasons behind not preparing Environmental accounting? ( Give Rating in Star, where Star 1 = Completely Disagree, Star 2 = Somewhat Disagree, Star 3 = Neither Agree nor Disagree, Star 4 = Somewhat Agree, Star 5 = Completely Agree )

Reasons	Rating
a. Expensive	☆ ☆ ☆ ☆ ☆
b. Time consuming	☆ ☆ ☆ ☆ ☆
c. Not required by Law	☆ ☆ ☆ ☆ ☆

d. No accounting standards or guidelines	☆ ☆ ☆ ☆ ☆
e. Difficulty in measuring environmental costs	☆ ☆ ☆ ☆ ☆
f. Difficulty in measuring environmental benefits	☆ ☆ ☆ ☆ ☆
g. Do not want to involve in social issues	☆ ☆ ☆ ☆ ☆
h. Any Other _____	☆ ☆ ☆ ☆ ☆

19. How important is Environmental Cost Information in decision-making & routine operations? Ascertain the effect of environmental activities on your organization. ( Give Rating in Star, where Star 1 = Completely Disagree, Star 2 = Somewhat Disagree, Star 3 = Neither Agree nor Disagree, Star 4 = Somewhat Agree, Star 5 = Completely Agree )

Reasons	Rating
a. Appraisal of investment for environmental risks	☆ ☆ ☆ ☆ ☆
b. Evaluation of environmental performance of a company	☆ ☆ ☆ ☆ ☆
c. Planning cost reduction	☆ ☆ ☆ ☆ ☆
d. Assessing environmental impact of a company's projects	☆ ☆ ☆ ☆ ☆
e. Designing various processes using environmental friendly technologies	☆ ☆ ☆ ☆ ☆
f. Get comparative advantage in market with an environmental friendly product	☆ ☆ ☆ ☆ ☆
g. Any Other _____	☆ ☆ ☆ ☆ ☆

20. What is the Percentage of Profit your company has been spending in the following financial years towards environmental actives?

	Past Financial Year		Current Financial Year		Future Estimate	
	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013	1 <sup>st</sup> April 2013 to 31 <sup>st</sup> March 2014	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2015	1 <sup>st</sup> April 2015 to 31 <sup>st</sup> March 2016	1 <sup>st</sup> April 2016 to 31 <sup>st</sup> March 2017	1 <sup>st</sup> April 2017 to 31 <sup>st</sup> March 2018
<b>Percentage of Profit</b>						

21. What is the amount of capital Investment / expenditure on equipment and facilities for pollution control measures?

Facilities & Equipment	Past Investment Amt.		Current period Investment Amt.		Future estimate Investment Amt.	
	1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013	1 <sup>st</sup> April 2013 to 31 <sup>st</sup> March 2014	1 <sup>st</sup> April 2014 to 31 <sup>st</sup> March 2015	1 <sup>st</sup> April 2015 to 31 <sup>st</sup> March 2016	1 <sup>st</sup> April 2016 to 31 <sup>st</sup> March 2017	1 <sup>st</sup> April 2017 to 31 <sup>st</sup> March 2018
Energy conservation,						
Improved material and other resource handling						
Recycling of waste material and water						
Time to Time Repairs & maintenances						
Research and Development						
Other control measurement						

22. Based on which of the following Acts did your company calculate the amount allotted towards Environmental Accounting / CSR?

Statement	Past period	Current period
	Before 1 <sup>st</sup> April, 2014	After 1 <sup>st</sup> April, 2014
As per Company Act 1956		
As per Company Act 2013		
As per Indian Accounting Standard		
As per International Financial Reporting Standard		
As per Generally Accepted Accounting Principles		
On voluntary basis		

23. Does your company generate any revenue from the environmental friendly measures adopted?

Facilities & Equipment	Very High	High	Moderate	Low	Very Low
Energy conservation,					
Improved material and other resource handling,					
Recycling of waste material and water					
Time to Time Repairs & maintenances					
Research and Development					
Other control measurement					

24. Which are the various Laws and Acts governing your company? (where NA = Not Applicable )

- a) The Indian Fisheries Act 1897 [  ] Agree [  ] NA [  ] Disagree
- b) The Indian Port Act 1908 [  ] Agree [  ] NA [  ] Disagree
- c) The Poison Act 1919 [  ] Agree [  ] NA [  ] Disagree
- d) The Indian Boiler Act 1923 [  ] Agree [  ] NA [  ] Disagree
- e) The Indian Forest Act 1927 [  ] Agree [  ] NA [  ] Disagree
- f) The Mines & Minerals  
(Regulation and Development) Act 1947 [  ] Agree [  ] NA [  ] Disagree
- g) The Factories ( Pollution & Pesticides )  
Act 1948 [  ] Agree [  ] NA [  ] Disagree
- h) Industries ( Development & Regulation )  
Act 1951 [  ] Agree [  ] NA [  ] Disagree
- i) Wildlife (Protection) Act 1972. [  ] Agree [  ] NA [  ] Disagree
- j) The River Board Act 1956 [  ] Agree [  ] NA [  ] Disagree
- k) Water ( prevention & Control of  
Pollution) Act 1974 [  ] Agree [  ] NA [  ] Disagree
- l) Forest ( Conservation ) Act 1980 [  ] Agree [  ] NA [  ] Disagree
- m) Air ( Privation & Control of Pollution )  
Act 1981 [  ] Agree [  ] NA [  ] Disagree
- n) Narcotic Drugs & Psychotropic Substances  
Act 1985 [  ] Agree [  ] NA [  ] Disagree
- o) Environmental ( Protection ) Act 1986 [  ] Agree [  ] NA [  ] Disagree
- p) Hazardous Wastes ( Management &  
Handling) Rule 1989 [  ] Agree [  ] NA [  ] Disagree
- q) National Environmental Appellate  
Authority Act 1997 [  ] Agree [  ] NA [  ] Disagree
- r) Ozone Depleting Substance  
(Regulation and Control) Rules 2000 [  ] Agree [  ] NA [  ] Disagree
- s) Biological Diversity Act 2002 [  ] Agree [  ] NA [  ] Disagree
- t) Electricity Act 2003 [  ] Agree [  ] NA [  ] Disagree
- u) Company Act 2013 [  ] Agree [  ] NA [  ] Disagree

25. Does your Company believe that its corporate image / Goodwill can be built after adopting environmental accounting and ethical practices?

- [  ] Corporate image / Goodwill will surely increase
- [  ] Corporate image / Goodwill will have no impact
- [  ] Corporate image / Goodwill will decrease

26. Which are the main Environmental initiatives behind building goodwill / corporate image of your company? (Multiple options can be ticked)

Initiatives	Priority
a. Environmental policy (reduces, recycles, recuses)	
b. Time to time repair and maintenances	

c. Global Stance for environment	
d. Publicity & Environmental awareness for general publics	
e. Demonstrations, Workshops & Seminars	
f. Obeying Government Rules & regulations	
g. Cleaner & Quality Production	
h. Participation in Swachh Bharat Nital Goem Abhiyan	
i. Having ISO – 14001 Certificate	
j. Receiving environmental award & achievements	

27. Does company have Corporate Social Responsibility Committee?

YES  NO

a) If Yes, in which year was it formed

Before Financial Year 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2013

In Financial Year 1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2013

In Financial Year 1<sup>st</sup> April 2013 to 31<sup>st</sup> March 2014

In Financial Year 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2015

In Financial Year 1<sup>st</sup> April 2015 to 31<sup>st</sup> March 2016

b) Select the number of directors in the committee?

Year	No. of Directors in Committee
Before Financial Year 1 <sup>st</sup> April <b>2012</b> to 31 <sup>st</sup> March <b>2013</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 & above
1 <sup>st</sup> April <b>2012</b> to 31 <sup>st</sup> March <b>2013</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 & above
1 <sup>st</sup> April <b>2013</b> to 31 <sup>st</sup> March <b>2014</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 & above
1 <sup>st</sup> April <b>2014</b> to 31 <sup>st</sup> March <b>2015</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 & above
1 <sup>st</sup> April <b>2015</b> to 31 <sup>st</sup> March <b>2016</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 & above

28. Under which of the following directives is the Directors / Annual report prepared?

Rules & Regulation	Past Period		Current Period		Future period	
	1 <sup>st</sup> April <b>2012</b> to 31 <sup>st</sup> March <b>2013</b>	1 <sup>st</sup> April <b>2013</b> to 31 <sup>st</sup> March <b>2014</b>	1 <sup>st</sup> April <b>2014</b> to 31 <sup>st</sup> March <b>2015</b>	1 <sup>st</sup> April <b>2015</b> to 31 <sup>st</sup> March <b>2016</b>	1 <sup>st</sup> April <b>2016</b> to 31 <sup>st</sup> March <b>2017</b>	1 <sup>st</sup> April <b>2017</b> to 31 <sup>st</sup> March <b>2018</b>
As per Company Act 1956						
As per Company Act 2013						
As per Indian Accounting Standard						

As per International Financial Reporting Standard						
As per Generally Accepted Accounting Principles						
As per Voluntary Process / Method						

29. Did your companies have to pay any fine or penalty for not following the rules or regulations with regards to environment?

YES  NO

a) If Yes, Mention Year & purpose of penalties:

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b) By whom was the penalty levied:

- State Government
- Central Government
- State Pollution Control Board
- Central Pollution Control Board
- International Authorities
- Local Authorities / Body
- Any Other \_\_\_\_\_

30. Did your company in its life time avail any State / Central Government Schemes / Incentives for transforming into an Environmental Friendly Company?

YES  NO

a) If Yes, Mention Name & Year Scheme Availed:

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31. Is your company participating in Swachh Bharat Nital Goem Abhiyan

Yes  No

a) If, Yes on which of issues has your company given most importance? (multiple options can be ticked)

- Building toilets
- Participating in cleaning drive organised by government
- Installing dustbin
- Making Awareness in society and among employee
- Cleaning your own premises
- Beach cleaning
- Cleaning Historical areas Temple's & Church's



- b) Where is this mission being carried out?
- Surrounding areas of Industry
  - With in Industrial Estate area
  - As per Government notified area
  - As per NGO identified area
  - As per companies identified area
- c) If No, reasons behind not participating in Swachh Bharat Nital Goem Abhiyan (multiple options can be ticked)
- Expensive
  - Time consuming
  - Not required by Law
  - Do not want to involve in social issues
  - Not related to business activity
  - Not necessary your participation will help in making our Nation Clean
  - Any Other \_\_\_\_\_

32. Are you satisfied with the level of corporate Environment Accounting & reporting practices carried out by your company?

- Completely Satisfied
- Moderately Satisfied
- Satisfied
- Moderately dissatisfied
- Completely Dissatisfied

33. Is corporate Environment Accounting & reporting successful in your company?

- YES  NO

- a) If Yes, what are the key of success? ( Multiple option can be ticked)
- Establishment and implementation of Environmental Management System
  - Investment in greener process and technology
  - Various Laws Rules and regulation governing our company
  - Conducting regular Environmental Audit
  - Strong Government support
  - Positive attitude & looking towards as a social cause
- b) If not, what could be the reason? (Multiple options can be ticked)
- Poor ethical decision making
  - Laxity in regulations
  - Confused policies on corporate Environment Disclosures
  - Increased cost of disclosure
  - Fear of damage to goodwill if perceived to be less socially responsible due to lesser amount of disclosure.

34. What is your opinion about introducing Environmental accounting and ethical practices?  
(Multiple options can be ticked)

- Government should develop better schemes in order to promote the same
- The rules, regulations and Acts governing the same should be made more clear
- Government should announce better rewards / recognition for those companies who follow these practises
- Companies should be given the freedom to decide their amount and purpose of social contribution
- Government should make Environmental Audit mandatory for governing the same
- Companies will not able to implement it, as aim of corporates are generating profit
- Any other \_\_\_\_\_

## APPENDIX – (III)

### RESEARCH PAPER PRESENTATION AND PUBLICATION DETAILS

#### I. Research Paper Presented

- ✓ Presented paper on “ENVIRONMENTAL ACCOUNTING AND REPORTING: STUDY BASED ON SELECTED PHARMACEUTICAL INDUSTRY IN GOA” At 67<sup>th</sup> All India Commerce Conference - 2014 of the Indian Commerce Association Organized by KIIT University Bhubaneswar. Held on 27<sup>th</sup> to 29<sup>th</sup> December 2014.
- ✓ Presented paper on “COMPLIANCE OF ENVIRONMENTAL ACCOUNTING AND DISCLOSURE PRACTICES: A STUDY OF SELECTED INDUSTRY IN GOA.” At 68<sup>th</sup> All India Commerce Conference – 2015, Organized by University Department of Commerce & Business Management, Vinoba Bhave University, Hazaribagh Jharkhand, Held on 6<sup>th</sup> to 8<sup>th</sup> November 2015.
- ✓ Presented paper on Title “CORPORATE IMAGE: EMERGING CHALLENGES IN GLOBALIZED MARKETS THROUGH ETHICS AND ENVIRONMENTAL RESPONSIBILITY.” At 69<sup>th</sup> All India Commerce Conference, On Theme Globalisation of Markets: Emerging Challenges, Organized by Faculty of Commerce, University of Lucknow, Lucknow (UP) India, Held on 11<sup>th</sup> to 13<sup>th</sup> November 2016.
- ✓ Presented paper on Title “THE ROLE OF IT IN ENVIRONMENTAL PROTECTION AND MANAGEMENT.” At National Level Conferences, On Theme Information Technology & Its Role for India’s Business World Development, Organised by Dr. Sudhakar Jadhavar Arts, Commerce & Science College in association with Savitribai Phule Pune University, Pune India, Held on 20<sup>th</sup> to 21<sup>st</sup> January 2017.
- ✓ Presented paper on Title “IMPACT OF CORPORATE SOCIAL RESPONSIBILITY POLICY (RULE 2014) ON ENVIRONMENTAL SOCIAL RESPONSIBILITY PRACTICES OF CORPORATES” At 70<sup>th</sup> All India Commerce Conference, In Prof. Samiuddin Memorial ICA Research Scholar Award Session, and Organized by Faculty of Commerce and Management THE IIS University Jaipur Rajasthan India Held on 12<sup>th</sup> to 14<sup>th</sup> October 2017.

## **II. Research Papers Published**

- ✓ Research paper published on “ENVIRONMENTAL ACCOUNTING AND REPORTING: STUDY BASED ON SELECTED PHARMACEUTICAL INDUSTRY IN GOA.” in International Journal in Management and Social Science. ISSN: 2321-1784 | Vol.-03 | Issue-05 | Page no: 611 - 621 | May, 2015. (Impact Factor- 4.747)
- ✓ Research paper published on “ETHICAL PRACTICES OF BUSINESS IN ENVIRONMENTAL ISSUES: A STUDY BASED ON SELECTED INDUSTRY IN GOA.” in International Journal of Advanced Research in Management and Social Sciences. ISSN: 2278-6236 | Vol. 4 | No. 8 | Page no: 149 - 164, August 2015 Greenfield Advanced Research Publishing House. (Impact Factor: 5.313)
- ✓ Research paper published on “COMPLIANCE OF ENVIRONMENTAL ACCOUNTING AND DISCLOSURE PRACTICES: A STUDY OF SELECTED INDUSTRY IN GOA.” in Asia Pacific Journal of Research. ISSN: 2320-5504, E-ISSN-2347-4793 | Vol. I | Issue – XXXVII | Page no: 47 - 57, March 2016. (Impact Factor: 6.58)
- ✓ Research paper published on Title “THE ROLE OF ETHICS AND ENVIRONMENTAL RESPONSIBILITY TOWARDS BUILDING CORPORATE IMAGE IN A GLOBALIZED MARKET.” In Kaav International Journal of Economics, Commerce and Business Management. ISSN: 2348-4969 | Vol. – 4 | Issue – 1| Page No: 356 - 371, March 2017. (Impact Factor: 7.8902)
- ✓ Research paper published on Title “THE ROLE OF INFORMATION TECHNOLOGY IN ENVIRONMENTAL PROTECTION AND MANAGEMENT.” In Researchers World – Journal of Arts, Science & Commerce. ISSN: 2231-4172, UGC APPROVED JOURNAL No. 10509 | Vol. – VIII | Issue – 3(5) | Page No: 73 – 80, July 2017. (Impact Factor (IBI): 3.19)
- ✓ Research paper published on Title “IMPACT OF CORPORATE SOCIAL RESPONSIBILITY POLICY (RULE 2014) ON CORPORATES ENVIRONMENTAL SOCIAL RESPONSIBILITY PRACTICES.” In International Journal of Creative Research Thoughts. ISSN: 2320 – 2882, UGC APPROVED JOURNAL No. 49023 | Vol. - 6 | Issue - 1| Page No: 50 – 59, March 2018. (Impact Factor: 5.97)
- ✓ Research paper published on Title “ENVIRONMENTAL ACCOUNTING FOR LOCAL SELF GOVERNMENT.” In Journal of Emerging Technologies and Innovative Research. ISSN: 2349 – 5162, UGC APPROVED JOURNAL No. 63975 | Vol. – 5 | Issue – 8 | Page No: 852 – 858, August 2018. (Impact Factor : 5.87)