EFFECT OF ENVIRONMENTAL ACCOUNTING ON THE QUALITY OF ACCOUNTING DISCLOSURES OF SHIPPING LINES IN NIGERIA

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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This thesis has been submitted for examination with my approval as University Supervisors.

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DEDICATION

I dedicate this thesis to Almighty God for His Love and steadfast Love over my life.
I dedicate this thesis to my late father Mr Waheed Ajibola Lawal for his love, advice, motivation and words of encouragement towards my academic pursuit. May you continue to rest with the Lord Almighty till we meet to part no more.
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LIST OF ABBREVIATIONS AND ACRONYMS

ABC	Activity Based Costing
ABCM	Activity Based Cost Management
ACI	Airports Council International
ANAN	Association of National Accountants of Nigeria
ANOVA	Analysis of Variances
BEA	Bureau of Economic Analysis
BOFIA	Banks and Other Financial Institution Act
CAMA	Companies and Allied Matters Act
COMPUSTAT	Computer Statistics
CO_2	Carbon-Dioxide
CSR	Corporate Social Responsiblity
EA	Environmental Accounting
EDG	Environmental Disclosure Guideline
EDGAR	Electronic Data Gathering Analysis Retrieval
EMA	Environmental Management Accounting
EPA	Environmental Protection Agency
EPS	Earnings Per Share
ERG	Environment Research Gap
FASB	Financial Accounting Standards Board

FRC	Financial Reporting Council
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
IAS	International Accounting Standards
IASC	International Accounting Standards Committee
IASB	International Accounting Standards Board
ICAEW	Institute of Chartered Accountants of England and Wales
ICAI	Institute of Chartered Accountants of India
ICAN	Institute of Chartered Accountants of Nigeria
ICC	Implied Cost of equity Capital
IOSCO	International Organization of Securities Commission
IFRS	International Financial Reporting Standards
IMO	International Maritime Organizations
IRC	Internal Revenue Code
IRS	Internal Revenue service
KPMG	Klynveld Peat Marwick Geordeler
NEP	National Environmental Policy
NEPD	Nigerian Enterprises Promotion Decree
NIA	Nigeria Insurance Act
NIMASA	Nigerian Maritime Administration and Safety Agency
NPI	National Pollutant Inventory

NRC	National Research Council
NSE	Nigeria Stock Exchange
OLS	Ordinary Least Square
PFM	Public Financial Management
REA	Resource Accounting
ROCE	Return on Capital Employed
SAB	Staff Accounting Bulletin
SAS	Statement of Accounting Standards
SEC	Securities and Exchange Commission
SEEA	System of Integrated Environmental and Economic and Accounting
SFAS	Statement of Financial Accounting Standards
SMA	Social Management Accounting
SMAS	Sustainability Management Accounting System
SPSS	Statistical Package for Social Sciences
TRI	Toxic Release Inventory
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNSTAT	United Nations Statistics
UNEP	United Nations Environmental Programme
USA	United States of America

VIF Variance Inflation Factor

DEFINITION OF KEY TERMS

Corporate Disclosure: is critical for well-functioning capital markets. It provide various users such as shareholders, employees, suppliers, creditors, financial analysts, stockbrokers, management, and government agencies with timely and reliable information useful for making prudent, effective and efficient decisions (Healy & Palepu, 2001).

Disclosure: is the appearance of quantitative or qualitative economic information relating to a business enterprise in the annual reports (Ali, M., Ahmed, K., & Henry, D. 2004).

Environment Accounting: involves the identification, measurement and allocation of environmental costs and the integration of these costs into business and encompasses the way of communicating such information to companies' stakeholders (Howes, 2002).

Environmental Costs: are costs associated with the creation, detection, remediation and prevention of environmental degradation (Hansen & Mowen, 2000).

Environmental Liabilities: This is the Principle-based obligation of a polluting party to pay for any and all damage the party caused to the environment. If damage can be tied to a specific party, this is a strict liability (Leary, 2011).

Environmental Management Accounting: is the development and implementation of an environment-related accounting system that helps enterprises manage their environmental and economic performance in the conduct of reporting and audit of corporate information (IFAC, 2009).

Mandatory disclosure: refers to the information companies are obliged to disclose by the accounting standards setting body (Gigler & Hemmer, 1998).

Stakeholders: are those societal interest groups to whom the business might be considered accountable, and therefore to whom an adequate account of its activities would be deemed necessary (Woodward & Woodward, 2001).

Voluntary disclosure: refers to the discretionary release of financial information over and above the mandatory disclosure (Wagenhofer, 1990).

ABSTRACT

Accounting reports in shipping lines have been found deficient over time in the sense that they lack vital information to enable stakeholders make informed decisions. It is widely believed that lack of proper use of International Accounting Standards in affected countries of which Nigeria is a part hinders transparency in the financial statements of corporations. As a result of this, financial statements fail to provide useful information on a timely basis. This study establishes the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The study was guided by the following research objectives; to establish the effect of identification of environmental cost on quality of accounting disclosure of shipping lines in Nigeria; to determine the effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria; to establish the effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria and to investigate the effect of measurement of environmental liability on quality of accounting disclosure on shipping lines in Nigeria. This study adopts both descriptive design and correlation analysis and the population of the study is the employees of the 101 registered shipping lines in Nigeria. The target population of this study was restricted to three departments which comprises of the legal department, finance and account department and technical and marine department of the shipping lines. The sample size for this study was 384 which were derived from Cochram's model. Primary data was collected through administering of questionnaires to the staff of the shipping lines in Nigeria. Multiple regression models were used to establish the relationship between the dependent variable and the independent variables. The relationship among variables was tested using ANOVA, pearson correlation, multivariate regression and F-statistic. Data analysis was done using Statistical Package for Social Sciences (SPSS) generating both descriptive and inferential statistics including Pearson's bivariate correlation. The findings of this study show that environmental accounting influences quality of disclosure on shipping lines in Nigeria. The study concludes that there exists a positive significant relationship between environmental accounting and quality of accounting disclosure on shipping lines in Nigeria. Based on the findings of this study, it is highly recommended that companies are to decide in their discretion which expenditure or cost should be included under the environmental expenses or cost. Environmental costs should be capitalized or expensed as the most controversial subjects for accountants as well as financial analyst. Companies should capitalize environmental cost if they are considered to be a cost of the expected future benefits from the assets regardless of whether there is any increase in economic benefits. Companies should recognize liability in the balance sheet when it is probable that an outflow of resources embodying economic benefits will result from the settlement of a present obligation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Measuring environmental performance and setting targets is a critical component for organizations to become more productive, more profitable, and more sustainable (Freedman, 2006) Monitoring key metrics such as energy, waste, and water usage leads to reductions in greenhouse gas emissions as well as operational efficiency improvements and cost savings. Environmental accounting is an inclusive field of accounting. It provides reports for both internal use, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting, and external use, disclosing environmental information of interest to the public and to the financial community. Internal use is better termed environmental management accounting (Bartolomeo *et al.*, 2000).

The field of environmental accounting has made great strides in the past two decades, moving from a rather arcane endeavor to one tested in dozens of countries and well established in a few. But the idea that nations might integrate the economic role of the environment into their income accounts is neither a quick sell nor a quick process; it has been under discussion since the 1960s (Jaroslava & Miroslav, 2006). (Menon *et al.*, 2010) indicated that there is growing awareness and concern on the impact of human activity on the ecosystem. This concern at global level about the impact of the human activities on the environment and the need for mitigating the effects led to codification of “soft law” on environment which began with the United Nations Stockholm conference on Human Environment and the launch of United Nations Environmental

Programme (UNEP) in 1972. The principles such as polluter pays, absolute liability, no fault liability, precautionary principle, inter-generation equity and good neighbourliness began to take roots into international and national environmental regulations.

Accountants, as the basic custodians and light bearers of economic development can no longer shut their eyes to the effect of environmental issues on business management, accounting, audit and disclosure system. Protection of environment and the potential involvement of accountant is becoming a common subject of discussion among the accountant all over the world (Pramanik, Shil, & Das, 2007). Accountants are expected to take a proactive role in the environmental protection process with the advent of liberalization, remove of trade barriers makes it logical that the costs of environmental degradation due to industrial activities should be internalized in corporate account to the extent possible, that is why environmental accounting and reporting therefore is of paramount importance today (Pellegrino & Lodhia, 2012).

According to Holt (2012), there is an increasing trend to judge an enterprise in relation to the community in which it operates. The impact of activities of the organization on the environment with respect to pollution of water, air, land and abuse of natural resources are coming under the scrutiny of government, shareholders and citizens. Unless proper accounting work is done either by the individual organizations or by the government itself, it cannot be determined that both have been fulfilling their responsibilities towards the environment (Holt, 2012). Therefore the need of environmental accounting has emerged. In the early 90's the UNEP and the World Bank set out to examine the feasibility of physical and monetary accounting in the area of natural resources and the environment and to develop alternative macro indicators of environmentally adjusted and sustainable income and product. Simultaneously, the Statistical division of the United Nations (UNSTAT) also developed methodologies for a System of integrated Environmental and Economic Accounting (SEEA).

Environmental accounting at organizational level aims to address the needs of organization to measure the economic efficiency of their environmental conservation and the business activities of the company as a whole (Kundu & Hauff, 2009). Environmental accounting includes environmental management accounting. In environmental management accounting, there is a particular focus on material and energy balance aspects and environmental cost information. This accounting is further classified into Segment environmental accounting which is an internal environmental accounting tool to select an investment activity, or a project, related to environmental conservation from among all processes of operations, and to evaluate environmental effects for a specified period (Gray, Owen & Adams, 1996).

Eco Balance environmental accounting is also under environmental management. It is an internal environmental accounting tool to support sustainable environmental management activities (Toms, 2000). Corporate environmental accounting which is a tool to inform the public of relevant information compiled in accordance with the environmental account is also under environment accounting. This could be referred to as corporate environmental reporting. For this purpose the cost and effect (in quantity and monetary value) of its environmental conservation activities are used (Kundu & Hauff, 2009). The second form of environmental accounting according to Kundu & Hauff (2009) is Environmental Financial accounting. Environmental financial accounting concentrates on reporting environmental liability costs and other significant environmental costs. The last form of environmental accounting is Environmental national accounting. In the national level accounting the particular focus is on natural resources stocks and flow environmental costs and externality costs.

According to Banerjee (2001) there is need for environmental accounting at corporate level. The environmental accounting at the corporate level helps the management to know whether the organization has been discharging its responsibilities towards

sustainable development while meeting business objectives. Environmental accounting addresses meeting regulatory requirements, operate its factory in a way that environmental damages do not occur, promote a culture and attitude of environmentally safe working conditions amongst its employees, disclosure to shareholders the amount and nature of the preventive measures taken by the management, ensures safe handling and disposal of hazardous waste (Rezaee & Elam, 2000). A progress report by SEEA (2009) says that the scope of environmental accounting is extensive and includes corporate, national and international level. The aspects included in environmental accounting are; the direct investment made by a corporate for minimization of losses to the environment. It includes investment made into the equipment or devices that help in reducing potential losses to the environment.

Environmental issues can have an impact on financial statements prepared on an accrual basis in many ways. There are international accounting standards such as International Accounting Standard Board (IASB), Financial Accounting Standard Board (FASB), and International Financial Reporting Standard (IFRS), which address the general principles for the recognition, measurement and disclosure of environmental matters in a financial report (IAS-39). The introduction of environmental laws and regulations may involve an obligation to recognize impairment of assets and consequently a need to write down the carrying value. A failure to comply with legal requirements concerning environmental matters such as emission or waste disposal may require accrual of remediation works, compensation or legal costs (Rahman, 1999). The author identified that if a firm fails to comply with the legal requirements regarding pollution control, the firm may risk a fine or penalty. He went ahead to opine that, some annual operating cost are environmental in nature. For example, energy costs can be considered an environmental cost as the use of fossil fuels is a source of carbon dioxide and air pollution (Cho & Patten, 2007).

According to Clarkson, Li, Richardson and Vasvari (2008), disclosure and transparency are critical elements of a robust corporate governance framework as they provide the basis for informed decision-making by shareholders, stakeholders and potential investors with respect to capital allocation, corporate transactions and financial performance monitoring. High quality disclosure, through its influence on investors and lenders who must assess risks and returns and decide where best to place their money, strengthen the efficiency of capital allocation as well as offer the benefit of reducing the costs of capital. Furthermore high quality corporate disclosure provides clarity on the extent to which companies meet legal and ethical requirements.

When environmental costs are not adequately allocated, cross-subsidization occurs between products. In most cases, different products are made by different processes, and each process tends to have a different environmental cost (Christ & Burritt, 2013). The author illustrates using example of two processes, A and B that use the same number of direct labor hours for a batch of product. Process A, however, uses hazardous chemicals whereas process B does not. The facility incurs environmental costs from the use of the hazardous chemicals in a number of ways: specification and procurement of the chemical which includes evaluation of material safety data sheets; design of the process to minimize worker exposure; shipping costs associated with transporting hazardous chemicals; monitoring, reporting, and permitting to meet applicable regulations; employee training in handling and emergency response; storage and disposal costs; and liability for the chemical from purchase to grave. In addition, there may be less tangible costs such as tarnished corporate image and inability to meet delivery or quality requirements (Christ & Burritt, 2013).

1.1.1 Environmental Accounting adoption in Developed Economies

An increasing number of countries impose requirement on companies to report on their environmental performance. Denmark was the first country to adopt legislation on public environmental reporting. In this country, the companies are required to prepare "Green Account". Pramanik et al. (2007) carried out a report in Norway, that the new accounting Act 1999 requires that all companies includes environmental information in the annual report from 1999 onwards.

In U.S.A., the companies are required to submit data on emissions of specific toxic release inventory (TRI) in addition; the Securities and Exchange Commission (SEC) requires disclosures on legislative compliance, judicial proceedings and liabilities in relation to the environment. In Canada, the securities commission requires public companies to report the current and future financial or operational effects on environmental protected requirements in an annual information form. Australian companies are now expected to give information on performance with regard to environmental regulations that apply to them. In addition a national pollutant inventory (NPI) is being created which requires industrial companies to report emission and inventories for specified chemicals (Pramanik, 2007).

The United States has not been a leader in the environmental accounting arena. At the start of the Clinton administration, the Bureau of Economic Analysis (BEA) made a foray into environmental accounting in the minerals sector, but this preliminary attempt became embroiled in political controversy and faced opposition from the minerals industry. Congress then asked the National Research Council (NRC) to form a blue ribbon panel to consider what the nation should do in the way of environmental accounting. Since then, Congressional appropriations to BEA have been accompanied by an explicit prohibition on environmental accounting work (Glaum & Street, 2003).

1.1.2 Environmental Accounting adoption in Emerging Economies

According to Joshi, Suwaidan and Kumar (2011), the economic reforms started by Government of India during early 90s, have paved way to rapid economic development and accelerating the process of industrialization. As the industrialization is also creating more environmental problems such as pollution, companies have started providing information about their environmental performance and policies owing of increased accountability.

The National Environmental Policy (NEP) 2006, approved by the Ministry of Environment and Forest recommends the use of "standardized environmental accounting practices and norms" in preparation of statutory financial statements for large industrial enterprises, in order to encourage greater environmental responsibility in investment decision-making, management practices, and public scrutiny.

The regulatory framework governing corporate disclosure in India includes the Companies Act 1956 and the Securities and Exchange Board of India (Amendment) Act 2002. However, neither the company law nor the accounting standards/guidelines issued by Institute of Chartered Accountants of India (ICAI) prescribes disclosing norms for the environmental related matters in the corporate financial statements. In such a case, poor environmental performance may bind them to non-disclosure or less disclosure (Chakrabarti & Mitra, 2005).

1.1.3 Environmental Accounting adoption in Nigeria

Globalization of capital market and internationalization has come to stay. The need for harmonization of financial statements and single set of consistent high quality financial reporting standard gained wide spread acceptance amongst policies makers, standard setters and preparers (Godfrey, Hodgson, Tarca, Hamilton, & Holmes, 2010). The need

for quality and uniformity in the preparation and presentation of financial statements gave birth to International Financial Reporting Standards (IFRS). Before the adoption in Nigeria (pre-adoption), there was legal and regulatory framework of accounting in respect to preparation of financial report in Nigeria (Abdulkadir, 2013). Therefore, the adoption of IFRS in Nigeria was launched in September, 2010 by the then Minister of Commerce and Industry. The adoption was organized in such that the entire stakeholders that prepare and present financial statement use it by the beginning of 2014. The adoption was made in such a way that all the first tier companies listed on the stock exchange and are of public interest use it by 2012 (post adoption), all other companies of public interest but not first tier are to adopt in 2013 and all small and medium scale entity use it by January, 2014.

The environmental reporting or sometimes known as "green reporting" in Nigeria is one of the voluntary social reporting included in the financial statements. At the beginning the issue of social and environmental reporting is somewhat neglected. The nature of accountant's focus is dominated by traditional economic thinking, which tends not to take account of social and environmental impacts (Parker, 1997). Internationalization and globalization of business has given reason for harmonized financial statement preparation and presentations (Isabel & Mariela, 2009). Companies compete globally for limited resources, shareholders, potential investor and creditors as well as multinational enterprises are required to bear the cost of adopting financial statement that are prepared using national standards (Abdulkadir, 2013). It is expected that the move towards IFRS convergence will enhance capital market performance and ginger global business expansion in Nigeria. In the view of this development all corporate organization are expected to adopt and comply with IFRS in preparation and presentation of their financial statements (Ogboma & Iyoha, 2006).

In fact, the concern goes more towards cash flows, prices, profits and properly, ecological issues such as quality of air usage of sea and the pollution of rivers are intangible matters, which easily overlooked. In addition, the general views of social and environmental accountability are among the unfamiliar concerns. The main determinants of environmental reporting include: company size, financial Leverage, profitability, Effective Tax Rates, Industrial Membership and audit firm (Junaini & Ahmad, 2008).

1.1.4 Shipping Lines in Context

Shipping companies date from the early 19th century when the colonialists traded goods to and from West Africa. Since then the number of shipping lines has been increasing. Shipping industry contributes to about 95% of the business in the world and hence they are a major contributor of a country's Gross Domestic Product (GDP). In Nigeria, Nigerian Maritime Administration and Safety Agency (NIMASA) formerly the National Maritime Authority is responsible for the regulations relating to shipping companies.

NIMASA was created on 1st August 2006 when the National Maritime Authority was merged with the Joint Maritime Labour Industrial Council. Both were formerly parastatals of the Federal Ministry of Transport. National Maritime Authority was established by the Shipping Policy Decree of 11 May 1987 and was supervised by the Federal Ministry of Transport. Its mandate was to ensure orderly development, protection and manpower training in the shipping industry. NIMASA also undertakes inspections and provides search and rescue services. The governing board includes representatives of the Ministry of Labour, the Ministry of Transport and the Navy. Container shipping is one of the most important and necessary means of cargo transportation through sea routes.

According to Bistricic, Jugović and Kuzman (2011) shipping is the physical process of transporting commodities and merchandise goods and cargo by sea. Merchant shipping

is like lifeblood to the world economy with 102,194 commercial ships worldwide. Sea transport has been the largest carrier of freight throughout recorded history. Although the importance of sea travel for passengers has decreased due to aviation, it is effective for short trips and pleasure cruises. Transport by water is cheaper than transport by air despite fluctuating exchange rates. The environmental impact of shipping includes greenhouse gas emissions and oil pollution. Carbon dioxide emissions from shipping is estimated to be 4-5 percent of global total and estimated by the International Maritime Organization (IMO) to rise up to 72% by 2020 if no reaction is taken. Shipping causes pollution which includes noise pollution, air pollution in form of exhaust emissions, water pollution in form of oil spills, sewage water and grey water, and solid waste (McCauley, Simpson, Meekan, Larsen, & Jeffs, 2010).

The shipping industry is subjected to a number of regulations, which in the area of safety and the environment are basically motivated by the scale of external costs and imperfections in information. There is a clear rationale for governments to establish and maintain adequate standards in maritime safety as well as the protection of the marine environment, which represents a genuine public good. However, beyond this certain maritime transport operations are substantially affected by a number of regulations that restrict competition. The lack of commercial regulatory constraints on this sector of the shipping industry means that it is not a particularly fertile area to examine in respect of further deregulation, even though, as already noted maritime safety regulations impose substantial obligations on this sector (ACI, 2013).

Collectively, the different branches of the global shipping industry are subject to a wide variety of regulations, reflecting administrative, economic, political or technical objectives. Each regulation reflects a response to specific issues that have arisen as the international trading system has evolved. These regulations may have international, multilateral or bilateral origins, or may be applied on a national basis. They may cover

flag state obligations, cargo liability regimes, restrictions on access to cargoes, commercial conduct, vessel design/construction and ships' equipment. They may also cover conditions for ship manning and operation (UNCTA, 2012).

1.2 Problem Statement

Accounting reports in shipping lines have been found to be deficient over time in the sense that they lack vital information that will enable stakeholders make informed decisions (Nzekwu, 2009). The mandatory and voluntary disclosure of financial information in corporate annual reports and their determinants have attracted considerable research attention in developed countries rather than developing ones (Akhtaruddin, 2005; Barako, 2007). Discoveries in the developed countries most especially in the European Union (EU) have aided the government to revamp the compliance mechanisms. They have also assisted the government in issuing out directives that facilitate the harmonization process and invariably bring all community companies up to a reasonable level of disclosure.

It is often alleged, however, that listed and non listed companies do not fully comply with the disclosure requirements such as Companies and Allied Matters Act 1990, Securities and Exchange Commission Rules and Regulations (1999), Nigerian Stock Exchanges Act (1961), Banks and Other Financial Institutions Act (1991), Nigerian Insurance Act (2003), Nigerian Accounting Standards Board Act (2003), Institute of Chartered Accountants of Nigeria Act (1965) and Association of National Accountants of Nigeria Act (1993) stipulated by the regulatory agencies because of the above problems. Also, the limited awareness of environmental costing principles and methodology has become an important issue to be addressed. If environmental issues and activities that are vital are not disclosed, financial statement cannot be said to reveal state of a 'true and fair view of affairs'.

According to Bassey, Effiok and Okon (2013), environmental accounting helps the form to record all environmental costs incurred by the business thereby finding a way of reducing the cost (environmental expenses) so that the business can increase profit. Also environmental accounting helps to disclose to the outside world their ability to be environmental friendly. The deficient adoption is expected to influence the quality of disclosure. Ali, Ahmed, and Henry (2004) opined that the government regulatory bodies and the accountancy profession of emerging nations suffer from structural weaknesses and often take a lenient attitude towards default of accounting regulations. Consequently, private and institutional investors (local and foreign) are hesitant in investing in such emerging economies due to lack of transparency. Lack of proper use of International Accounting Standards in affected countries (of which Nigeria is a part) hinders "transparency" in the financial statements of corporations.

As a result of this, financial statements fail to provide useful information, on a timely basis. Since current requirement for reporting on environmental issues is voluntary, it is observed from most financial statements of corporate organizations that it has engendered disclosures of information which totally exclude environmental issues. Environmental disclosures have become critically important to an informed public and financial stakeholders. Mohamed and Faouzi (2014) examined the effect of corporate environmental disclosure on the cost of equity capital and found out that investment in practices corporate environmental disclosure contributes substantially to reducing firms' cost of equity. However, the studies failed to investigate a comprehensive set of adoption of environmental accounting and how it affects the quality of accounting disclosure. This is the research gap that this study wishes to bridge. It is for this reason that the study wishes to investigate the effect of environmental accounting on the quality of accounting disclosures of shipping lines in Nigeria**.**

1.3 Research Objectives

1.3.1 General Objective

The general objective of this study was to determine the effect of environmental accounting on the quality of accounting disclosures of shipping lines in Nigeria**.**

1.3.2 Specific Objectives

The study was guided by the following research objectives:

1. To establish the effect of identification of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria.
2. To determine the effect of capitalization of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria.
3. To establish the effect of identification of environmental liability on the quality of accounting disclosure of shipping lines in Nigeria.
4. To investigate the effect of measurement of environmental liabilities on the quality of accounting disclosure of shipping lines in Nigeria.

1.4 Research Hypotheses

The following are the research hypothesis that this study was based on:

H_{01}: There is no significant effect of identification of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria.
H_{02}: There is no significant effect of capitalization of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria.

H_{03}: There is no significant effect of identification of environmental liability on the quality of accounting disclosure of shipping lines in Nigeria.
H_{04}: There is no significant effect of measurement of environmental liabilities on the quality of accounting disclosure of shipping lines in Nigeria.

1.5 Significance of the Study

The study is of use to the Policy makers who need the information on the various ways to analyze the financial statements and their importance for planning, bench marking and drawing comparisons. The analysts use the information to develop reviews for investors and lenders. The accounting information helps in precondition for decision making, explaining and predicting environmental failure.

The study is of importance to the investors as they need information to make an informed investment decision upon analysis of the various financial statements, and this they use to protect their investments. The study is of use to the government and other regulatory authorities as they the need information to ensure that companies are complying with regulations set at all levels, determine the levels of taxes and that the public is accurately informed about the financial position at all times.

The shareholders use the information to understand the performance of their shares in order to make their investment decision going forward. This also equips them with the necessary information required while arriving at investment decision. The study is of value to Scholars as they use the research gaps identified in this study to progress further academic discourse on environmental accounting

1.6 Scope of the Study

The study cover the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The study population was the employees in the shipping lines in Nigeria. The scope of the study covered the period of 2004-2014.

1.7 Limitations of the Study

The nature of the study calls for confidential information related to the shipping industries. Respondents feel intruded when requested to complete a questionnaire which requires them to disclose such information. In order to mitigate this short coming the respondents were assured of confidentiality and ethical handling of the information.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter encompasses both the theoretical and empirical literature with regard to effect of environmental accounting. The theoretical review will guide the framework of the study which includes all the relevant theories upon which this study is anchored and aid in the clarity of the study perspective. Empirical literature discusses the relevant studies which have been done on the variables under study. The conceptual framework attempts to explain the relationships between variables under study.

2.2 Theoretical Framework

2.2.1. Voluntary Disclosure Theory

The notion of voluntary disclosure supports the idea, even in the absence of regulation; managers still wish to disclose additional information. This idea is based on the considerations found in agency theory, which assert that agency costs are borne mainly by agents (Jensen & Meckling, 1976). Therefore, agents try to reduce their agency costs to maximize their wealth. As described in agency theory, agency costs are a product of information asymmetry, whereby the agent has more private information about the firm's performance than the principal.

Theoretical and empirical studies in accounting focus on the informational role of voluntary disclosures for the capital markets (Healy & Palepu, 2001; Verrecchia, 2001). The SEC and the FASB provide guidelines for mandatory disclosures; the disclosure literature in accounting refers to voluntary and discretionary disclosures, interchangeably, as information management releases itself. Healy and Palepu (2001)

opined that the underlying assumption in the disclosure literature is that manager possesses superior information to all outsiders. The result is managers' trade-off between making accounting choices and providing disclosures to "communicate their superior knowledge of a firm's performance to investors, and to manage reported performance for contracting, political, or corporate governance reasons".

According to Grossman (1981) theoretical studies related to disclosure suggest full disclosure of information will occur due to investors' belief that non-disclosing firms have the worst possible information. Such studies also assume credible disclosures and zero disclosure costs. Voluntary disclosures are a case of information inductance (Gray, Bebbington & Walters, 1993); of particular importance is the location of the information. However, Verrecchia (1983) suggests, in the presence of fixed, positive disclosure costs, only firms whose information provides economic benefits above such costs will disclose. In addition, disclosure policies are influenced when disclosures provide information to competitors.

The relevance of this theory to this study is that studies in accounting related to disclosure are most concerned with what types of disclosures might occur, instead of disclosures actually made by firms.

2.2.2 Legitimacy Theory

The legitimacy theory is probably the most widely used to explain environmental disclosure. According to Cho and Patten (2007), the legitimacy theory implies that environmental disclosure is a function of the intensity of societal and political pressure faced by a company regarding the environmental performance. As a reaction on this pressure, firms try to provide more environmental information. Campbell, Craven and Shrives (2003) examined perceived legitimacy gap alongside of Voluntary Disclosure requirement for social and environmental issues and costs.

Legitimacy theory posits that organizations are continually seeking to ensure that they operate with the bounds and norms of their respective societies (Deegan, Rankin, & Voght, 2000). Legitimacy can be considered as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995). To this end, organizations attempt to establish congruence between "the social values associated with or implied by their activities and the norms of acceptable behavior in the larger social system of which they are part" (Dowling & Pfeffer, 1975). Consistent with this view, Richardson (1987) asserts that accounting is a legitimating institution and provides a "means by which social values are linked to economic actions".

Milne and Patten (2002), explain that organizations strive for a balance between organizational values and societal values. When it is achieved, there is a, so-called, social contract between the organization and the society. If the society observes that the organization fails to operate as the social contract, the societal values are not in accordance with the organizational values, so there will be a negative societal opinion about this organization (Milne & Patten, 2002). Such a negative opinion might be a threat to the organization's going concern. When the organization is operating in such a manner that does not satisfy the society, it will break the organization's social contract. The societal reaction will be, for example, reduced demand by consumers for the products or services from the organization, and suppliers will limit the supply of resources to the firm (Deegan, 2002). A broken social contract is referred to as a legitimacy gap. In response to this gap, organizations will do the best they can to repair or compensate the broken contract (Deegan, 2002). For example, companies try to repair the contract by providing positive environmental disclosure (Milne & Patten, 2002).

The relevance of this theory is that as the number of researchers adopting legitimacy theory as the theoretical basis for their social and environmental accounting research has grown, so too, has the sophistication and understanding of its application been refined.

2.2.3 Stakeholder Theory

The stakeholder theory is one of the various approaches that try to explain or rationalize strategy of organizations. It has its main underpinning on the emphasis placed on the role of stakeholders of a firm in the pursuit of its objectives. "Stakeholder theory attempts to articulate a fundamental question in a systematic way: which groups are stakeholders deserving or requiring management attention, and which are not?" (Mitchell, Agle & Wood, 1997). It acknowledges the dynamic and complex relationships between organizations and their stakeholders and that these relationships involve responsibility and accountability (Gray et al., 1996). "Stakeholder analysis enables identification of those societal interest groups to whom the business might be considered accountable, and therefore to whom an adequate account of its activities would be deemed necessary" (Woodward & Woodward, 2001). The stakeholders of a firm are viewed as being a critical factor to the survival of the organization.

According to Friedman and Miles (2002), the concept is about how the organization should be and how it should be conceptualized. They state that the organization should be thought of as "a grouping of stakeholders" and its purpose should be to manage the interests, needs and viewpoints of the stakeholders. Managers must manage the organization for the benefit of the stakeholders, ensuring that their rights are taken care of and those they participate in decision making processes (Friedman & Miles, 2006). The scholars argue that this is critical to the long term survival of the corporation. In a broader view, the concept of stakeholder view can be expressed in the sense that the role and purpose of the organization is not anymore guided by profit making and

maximization of shareholders' wealth; but also to defend an image and values respecting the special relationships that arise and develop between it and all its stakeholders (Friedman & Miles, 2006). The theory is much concerned with active management of the business environment, relationships and the promotion of shared interests in order to develop business strategies

The relevance of this theory to this study is that management should try and build a framework that will be responsive to the concerns of managers who were being buffeted by unprecedented levels of environmental turbulence and change.

2.2.4 Signalling Theory

Signalling theory was used in prior studies to explain why managers voluntary disclose forward-looking information in their annual report narratives (Schleicher et al., 2007). Signalling theory can be traced back to Akerlof (1970) who explained signalling theory in a general product market setting. This theory is based on the idea of information asymmetries between insiders (managers) and outsiders (i.e. investors). Managers usually have better information than other stakeholders, and therefore outsiders may interpret any additional information as signals to the stock market. Corporate environmental responsibility represents a firm's strategy to respond adequately to the expectations of society in which it operates.

The relevance of this theory is that firms should provide information that could be used by individuals who are seeking to form impressions about the firm, its values and the overall future direction.

2.2.5 Porter's Hypothesis

Traditionally, responding to environmental challenges has been seen as a no-win proposition for business, with the related expenditure seen as a net cost. However, in

1991 Porter posited that stricter environmental regulation would lead to innovative approaches that would enhance competitiveness (Porter, 1991 cited in Porter & Van der Linde, 1995) — Porter's hypothesis. The hypothesis suggests that strict environmental regulation triggers the discovery and introduction of cleaner technologies and environmental improvements, the innovation effect, making production processes and products more efficient. The cost savings that can be achieved are sufficient to overcompensate for both the compliance costs directly attributed to new regulations and innovation costs. In the first advantage, a company is able to exploit innovation by learning effects and attains a dominating competitive position compared to companies in countries where environmental regulations are enforced much later.

Porter's view was critiqued by various authors (Walley & Whitehead 1994; Palmer *et al.* 1995; Maxwell, 1996) as being too simplistic. Wagner, Schaltegger, and Wehrmeyer (2001) moderated Porter's hypothesis and developed a model in which the traditionalist view and Porter's hypothesis were combined. The moderated Porter hypothesis argues that companies implementing corporate environmental accounting will perceive some benefits from doing so.

The relevance of this theory is that strict environmental regulation would trigger the discovery and introduction of cleaner technologies and environmental improvements, the innovation effect, making production processes and products more efficient in a firm.

2.2.6 Institutional Theory

This theory suggest that firms managers look at industry norms, firms traditions, management fads and so on when making decisions (Minkoff & Meyer 2004). Organizations seek legitimacy by adhering to rules and norms that are valued by the society and especially certain institutions in the society. They therefore use institutional

isomorphism to adopt systems and procedures. The hospitals in study share consultants and regularly meet to harmonize management issues. They are all regulated by the Ministry of Medical Services and Public Health the need follow industrial norms when making decisions.

According to DiMaggio and Powell (1991), institutional isomorphism may occur through coercion, mimetic or normative forces to the organization. Coercion isomorphism occur when external pressure is exerted by other organizations which the organization depends on (such as the government policy, economic forces, legal, regulation and culture) and social expectations of society (such as culture and environmental forces). These institutions must follow the government regulation and other regulatory bodies. Change in taxation, health policies and other government regulations coerce these firms to adopt these changes. Management accountants must factor these new changes and include them in their reports. There is a lot of copying of other institutions system witnessed in health care. This is due to sharing of key personnel as well as lack of guideline of which management system is best due to uncertainty. On the other hand, normative isomorphism is associated with professionalization and arises when professionals operating in organization are subject to pressure to conform to a set of norms and rules developed by occupational or professional bodies. Management accounting is changing and the level of accounting education of staff in Nigeria is improving. With adoption of international standards and other regulatory bodies policies on uniform manner for all institutions, the researcher expect similarities in adoptions of management accounting changes by these institutions.

The relevance of this theory to this study is that accounting can be employed to satisfy external constituents while protecting internal processes from too much intrusion by external forces by conforming to these forces.

2.2.7 The Sarbanes-Oxley Act of 2002

The Sarbanes-Oxley Act of 2002 (SOX), introduced in the USA in the aftermath of Enron, has fundamental governance implications for listed American companies, their foreign subsidiaries and foreign companies that have USA listings. It applies to all Securities and Exchange Commission (SEC)-registered organizations, irrespective of where their trading activities are geographically based. The SOX is different from the UK's Combined Code, and from codes of corporate governance adopted elsewhere in the OECD, in that compliance is mandatory, rather than based on "comply or explain" (Stanwick, 2006). The Sarbanes-Oxley Act affects many roles within a corporation including: directors, top management, auditors, accountants and financial analysts.

The key goals of the Sarbanes- Oxley Act of 2002 are to: Enhance financial disclosures, Enhance auditor independence, Improve corporate governance, Protect public company employees, Whistleblowers and shareholders, Increase accountability of corporate executives. The act is designed to protect the interests of investors and further the public interest in the preparation of informative, reliable, and independent audit reports for companies the securities of which are sold to, and held by and for, public investors (Carpenter, 2004). The Sarbanes-Oxley Act also requires that the external (independent) auditors who review the financial statements of the firms are restricted to performing audit-based functions. Contrary to what was acceptable in the past, external auditors are not allowed to perform bookkeeping functions, nor are they allowed to do non-audit based consulting.

One of the most critical components of the Sarbanes-Oxley Act was the requirement that both the firm's CEO and Chief Finance Officer (CFO) must certify all annual and quarterly reports sent to the Securities and Exchange Commission (SEC). This was a significant change in the past policy of the SEC. In addition, all of the board members

and the top executives of the firm must report to the SEC all stock transactions within two business days (Stanwick, 2006).

From a reporting perspective, the Sarbanes-Oxley Act requires that every publicly traded company include in its annual report a description of the firm's internal controls. Although not explicitly stated, the requirement has been interpreted to mean not only financial controls, but also operational and information technology controls.

Accounting and financial reporting requirements of companies in Nigeria are regulated by a multiplicity of laws and bodies (World Bank, 2004:2). These include Companies and Allied Matters Act CAP. 20 L.F.N. 2004, Securities and Exchange Commission Rules and Regulations (1999), Investments and Securities Act CAP.124 L.F.N. 2004, Nigerian Stock Exchanges Act (1961), Banks and Other Financial Institutions Act (1991), Nigerian Insurance Act (2003), Nigerian Accounting Standards Board Act (2003), Institute of Chartered Accountants of Nigeria Act (1965) and Association of National Accountants of Nigeria Act (1993).

The main legal framework for corporate accounting practices in Nigeria is the Companies and Allied Matters Act CAP. 20 L.F.N 2004. The SEC is the market that regulates securities market participants under the Investments and Securities Act CAP.124 L.F.N. 2004 and the Securities and Exchange Commission Rules and Regulations (1999). The Nigerian Stock Exchange, established by the Nigerian Stock Exchange Act of 1961, supports the Securities and Exchange Commission to supervise the securities market operations, and regulates the capital market. Within the capital market there exists the primary and secondary market. The primary market issues new securities and the secondary market deals with existing securities.

Corporate financial reporting in Nigeria is currently guided by CAMA 2004 (as amended). This is the major legislation governing financial reporting of companies in

Nigeria. The basic requirement relating to corporate financial reporting is contained in Part XI- Financial Statements and Audit. Sections 331- 356 relate to financial statements while sections 357 to 369 relate to Audit. Section 339 deals with additional disclosure required in notes to financial statement as contained in Schedule 3 to the Act. Schedule 3 deals with the following: Parts I and II deal respectively with the disclosure of the particulars of subsidiary and its shareholders; Part III deals with disclosure of financial information of subsidiaries; Part IV requires subsidiaries to disclose its ultimate holding company; Part V deals with emoluments and compensation to directors and past directors; Part VI deals with the disclosure of the number of employees of the company with high remunerations.

The practice of Accountancy worldwide is guided by sets of guidelines and rules. The rules and guidelines are compiled into accounting standards (Izedonmi & Ola, 2001). They are statements of principle that discuss the accounting treatment and disclosure of a particular item or group of items. There are two sets of standards governing the accounting practice in Nigeria, the National Accounting Standards and the International Accounting Standards. The National Accounting Standards, known as Statements of Accounting Standards (SASs) are issued by the Nigerian Accounting Standard Board (NASB), while the International Accounting Standard formerly known as International Accounting Standards (IASs) but now known as International Financial Reporting Standards (IFRSs) are issued by the International Accounting Standard Board.

The Financial Reporting Council formerly the Nigerian Accounting Standard Board (NASB) is a parastatal of the Federal government founded on September 9, 1982 but enacted as the NASB Act of 2003. The board came into being after the Nigerian Enterprises Promotion Decree was promulgated to transfer ownership of companies to Nigerians. The company's existing at that time exploited the fact that there was no uniform accounting practice. They utilized any accounting measure that seemed suitable

to them. Those companies whose parents were residents outside Nigeria followed the dictates of their parents outside the shore of Nigeria, thereby, resulting to non- coherent accounting practices. NASB was therefore established at that time to stop the unpalatable conditions that existed before and after indigenization.

Specifically NASB was set up to narrow areas of differences in practices so that financial statements are structurally uniform and meaningful; produce accounting information relevant to the economic environment and introduce measures that will enhance the readability and validity of the accounting information (NASB, 2007). The standards are rules governing the preparation of the financial statements and they are essential because they result in efficient allocation of resources within the economy. The NASB was given a legal backing by its inclusion in Section 335(1) of the Companies and Allied Matters Act of 1990 which mandates all companies to prepare financial statements that comply with the Statement of Accounting Standards (SAS) as developed and issued by NASB from time to time. The NASB in 2003 was given the full autonomy as a legal entity with the enactment of the NASB Act of 2003. NASB is the only body that has the statutory power under the Act to monitor and enforce compliance with accounting standards.

The NASB Act No 22 of 2003 identifies three objectives of the Law as follows: to establish the NASB charged with the responsibility of developing and publishing accounting standards to be observed in the preparation of financial statements; to seek to promote and enforce compliance with accounting standards issued by the Board; and to provide penalties for non-compliance with its provisions.

The International Accounting Standards Board (IASB) is an independent organization based in London, United Kingdom, that issues Accounting rules known as International Financial Reporting Standards (IFRS) previously known as International Accounting

Standards (IAS). The International Accounting Standards Board (IASB) was preceded by the Board of the International Accounting Standards Committee (IASC), which operated from 1973 to 2001. IASC was set up on the initiative of Sir Henry Benson during the 10th World Congress of Accountants at Sydney, Australia, in 1972 (Ezejelue, 2001:8). The agreement to form IASC was signed on June 29, 1973 by nine accountancy bodies, viz, in Australia, Japan, France, Canada, Germany, Mexico, the United States, the United Kingdom and Ireland and the Netherlands, and these countries constituted the Board of IASC at that time (Alexander, Britton and Jorissen, ,2003:45).

The IASC was established as a response to the call by accounting professionals of the G5 for better communication, closer co-operation and greater co-ordination of accounting rules among the various nations of the World. Blake (1981:193) narrated that the need for International Accounting Standards programme at that time was attributable to three factors - firstly, the growth in international investment; secondly, the increasing prominence of multinational enterprises and lastly, the growth in the number of accounting standard setting bodies.

In 1974, Belgium, India, Israel, New Zealand, Pakistan and Zimbabwe joined as associate members. The first two standards IAS 1, Disclosure of Accounting Policies and IAS 2, Valuation and Presentation of Inventories in the Context of the Historical Cost System were published in 1975. In 1977 the International Federation of Accountants (IFAC) was formed, to support the work of the IASC. In 1978, South Africa and Nigeria joined the Board. According to Wallace (1990:9), the implicit primary goal of IASC is harmonisation but its official goal as set out in the constitution is as follows (Roberts, Weetman, & Gordon 2002): to develop in the public interest, a single set of high quality understandable and enforceable global accounting standards; to promote the rigorous use and application of these accounting standards; to bring about

the convergence of national accounting standards and international accounting standards.

According to Porter (2004), over time IASC has been marked by a number of significant challenges and accomplishments. During the first decade, (from 1973-1983) it successfully fended off efforts of developing Countries and it had to cope with the flexible private-sector Anglo-American approaches to accounting. It also had to cope with the more cautious and legalistic European approaches that were oriented much more to the needs of creditors and government. Afterwards, there was a need to harmonize the accounting standard for reasons such as reduction in diversity of financial statements for multinational enterprises and efficient comparison of international financial statements (Tower *et al*, 1999). During the second decade (from 1984-1993) IASC's initiative to harmonize accounting standards commenced but at a slow pace, mostly, because the standards were rigorous and not sufficiently specific. The Board made efforts to improve its standard by inaugurating a Comparability and Improvement project which was completed in 1993 with approval of ten revised IASs. This made them gain recognition of International Organization of Securities Commissions (IOSCO).

During 1994 to 2000, IASC's stature was enhanced as a result of the global financial crises of the 1990s and IOSCO recommended that its members should allow foreign firms to use IAS in accessing their securities markets. On 1, April 2001, IASC was transformed to the IASB with the responsibility for setting International Accounting Standards. A four-level structure was created with a separation between the Trustees, the Board, a Standards Advisory Council and a Standing Interpretations Committee endorsed by IOSCO, the SEC and Financial Standards Accounting Board. The IAS was renamed International Financial Reporting Standards (IFRS). In 2002, U.S. Financial Accounting Standards Board (FASB) and IASB held a joint meeting and issued a

memorandum of understanding pledging convergence of their accounting standards and coordination of their work programmes.

In 2004, European Commission endorses all IASs and IFRSs for use in Europe. These countries include Austria, Belgium, Cyprus, Czech Republic, Denmark, Germany, Estonia, Greece, Spain, France, Ireland, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Poland, Portugal, Slovenia, Slovakia, Finland, Sweden and U.K. During the same period, Australia, Hong Kong, New Zealand, and Philippines adopt improved IASs and IFRSs.Several countries that had not adopted IFRS had established machinery for convergence. Convergence is a modified version of adoption. Ball (2006:11) narrated that convergence *de facto* is less certain than convergence *de jure.* The latter relates to accounting regulation while the former relates to company practices. That is to say that harmony in actual financial reporting practice is different from harmony in financial reporting standards (Taplin, Tower & Hancock, 2002). This can be attributed to some factors such as corporate factors, political factors, cultural factors and economical factors. IASC cannot enforce countries to adopt its standard but it solely relies on them to comply.

Widespread international adaptation of the IFRSs offer advantages such as accurate, timely and comprehensive financial statement information, reduces cost of information processing, enhances international comparison of financial statements, and removes barriers to cross-border acquisitions and divestitures (Ball, 2006). Presently, NASB is making frantic efforts of adopting IFRSs to suit Nigerian environmental peculiarities. However, the Executive Secretary of the Nigerian Accounting Standards Board (NASB), narrated that it is not possible to fully adopt the IFRS taking into cognizance local needs. He said: "Nigeria is at a different level of development compared to some of the IFRC countries. We will converge by adaptation. We take each standard and look at how relevant it is to the economy before we adopt it or converge" (Nnadi, 2009b). A number

of leading banks have started making voluntary decisions to improve the transparency and exposure level of their books by using IFRS for the presentation of their financial statements. These banks are First Bank of Nigeria Plc, Guaranty Trust Bank Plc, Access Bank Plc, and EcoBank Transnational International. The Nigerian Stock Exchange (NSE) has urged quoted companies to comply with the International Financial Reporting Standards (IFRSs) by 2011. It is a statutory requirement for companies to provide supplementary information regarding the basis and justification for the preparation of their financial reports. Financial statement disclosures are secondary information provided by companies to clarify, interpret or justify certain published financial information. Disclosures normally provide further clarity of the financial information in order to assist users with additional information for the purpose of making informed investments decisions in the business. Management also uses disclosures to attest to the accuracy and validity of reported financial information.

Private companies are not required to disclose certain financial information regarding the company. However, listed companies are mandatorily required to disclose certain information regarding the company in order to fulfill the requirements of the Securities and Exchange Commission (SEC) and other regulatory bodies. Companies voluntary disclose their financial information. In Nigeria, the information disclosure requirements in the financial statements under NG-GAAP were grossly inadequate to effectively bridge the information asymmetry between companies and the users of the financial statements. However, reporting under the IFRS regime requires companies to make more disclosures regarding their reserves, and other key variables necessary for investment decision and to meet objective of financial statements, which is to show a true and fair view of the activities of a company. It is therefore envisaged that the companies will disclose more of their financial information with the transition from the NO-GAAP to IFRS.

As financial globalization proceeds, International Financial Reporting and Auditing Standards are increasingly becoming important instruments of integration. This has been observed in both the London and Pittsburg summits of the G20 leaders in 2009. The G20 leaders reinforced the influence of International Financial Reporting Standards (IFRS) in that they called for the implementation of global accounting standards by 2011. By the end of 2008, there were over 100 countries that had adopted IFRS (Barth, Landsman, & Lang, 2008). Another parallel summit was the United Nations special summit on the environment which was held on 22nd September 2009. The United Nations' summit underscored the link between environment and finance. For most companies environmental factors are no longer off balance sheet risks. Notwithstanding this, previous research on corporate social and environmental reporting has not been able to disentangle commitment from propaganda (Freedman & Jaggi, 2006; Bebbington, Gonzales & Moneva, 2008; Gray, Kouhy & Lavers, 1995).

This study examines whether the voluntary disclosure route is able to resolve market and non market (regulatory) failures in monitoring public goods like environment. The environment is both a complex and an eclectic matter. Carbon emissions and contaminations of rivers that cross national boundaries are only the trans-boundary environmental problems. Non trans-boundary environmental problems are the ones whose direct effects and externalities remain within the country that is producing it or agreeing to receive other countries' dumps (such as toxic waste dumping). The mainstream financial reporting literature addresses the environmental accounting problem from the usual voluntary-mandatory-market reaction perspectives or from social contract and institutional perspectives.

The voluntary disclosure's conceptual bases are mostly agency and market efficiency theories while social contract and institutional perspectives are embedded in social theory. The management accounting and strategy literature approaches the problem from

a reward and penalty framework for executives and firm's stakeholders. For instance, Wisner, Epstein and Bagozzi (2006), using data from 179 responses of executives and structural equation modeling find an association between financial performance and environmental performance. Policy research however requires bringing together a number of disjoint concepts and disciplines into one coherent framework. Global financial reporting and auditing standards will be able to discriminate among the beauty contestants in environmental disclosures.

The challenge for International Accounting Standard Board (IASB) is whether it will make the statement of environmental assets and liabilities part of the mandatory set of financial statements that firm in environmentally sensitive industries should periodically publish. Barth, Landsman and Lang (2008), in their study of IAS adoption internationally, developed a three dimensional index of accounting quality. The elements of accounting quality were earnings management (including earnings smoothing), timely recognition of losses and the value of relevance of accrual accounting information. Comparing the earnings figure internationally is even more problematic as it is affected by accounting differences and a number of institutional differences, development, ownership structure, education and similar factors (Choi & Meek 2008).

Bhattacharya, Daouk and Welker (2003) for instance used earnings aggressiveness, loss avoidance and earnings smoothing as earnings opacity measures to rank 34 countries. When one invokes trans-boundary and non trans-boundary environmental issues into the earnings quality literature, it is evident that the absence of provisions for decommissioning and rehabilitations, and reserves set aside for contingent liabilities for activities that are related to the firm's past and present activities, suggests earnings inflation by domestic and transnational companies. Hence, there is a paucity of research on the link between accounting quality studies and environmental accounting studies.

In other words, firms engage in impression management, and want to create an image of environmental friendliness when in fact the nature of their activity is environmentally sensitive. If this is correct, the voluntary disclosure mechanism breaks down. Hence, decoupling the protection of public good from corporate public relation exercise is necessary. A quick glance through IASB and FASB standards reveals that there are several stand alone standards and interpretations that are in one way or another linked to environmental and resource (REA) accounting. IAS 38 deals with the impairment of emission rights (intangibles). IAS 32, IFRS 7 and IAS 39 (new IFRS 9, November 12, 2009) deal with presentation, disclosure, and recognition measurement of financial instruments. In short IASB has the basis on which environmental information at corporate level can be reported. Finally, from an earnings quality perspective, the implications of the non recognition, non disclosure and inadequacy of provisions for past and present environmental responsibilities points to one direction, the inflation of earnings and values (fundamental/intrinsic) of equities.

2.3 Conceptual Framework

According to Kombo and Tromp (2006), a concept is an abstract or general idea inferred or derived from specific instances. A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. In this study, the conceptual framework has shown on figure 2.1 shows the relationship of the independent and dependent variables. The independent variables of this study include identification of cost, capitalization of environmental costs, identification of environmental liability and measurement of liabilities. The dependent variable under this study is the quality of accounting disclosure which includes content analysis, disclosure index and disclosure frequency.

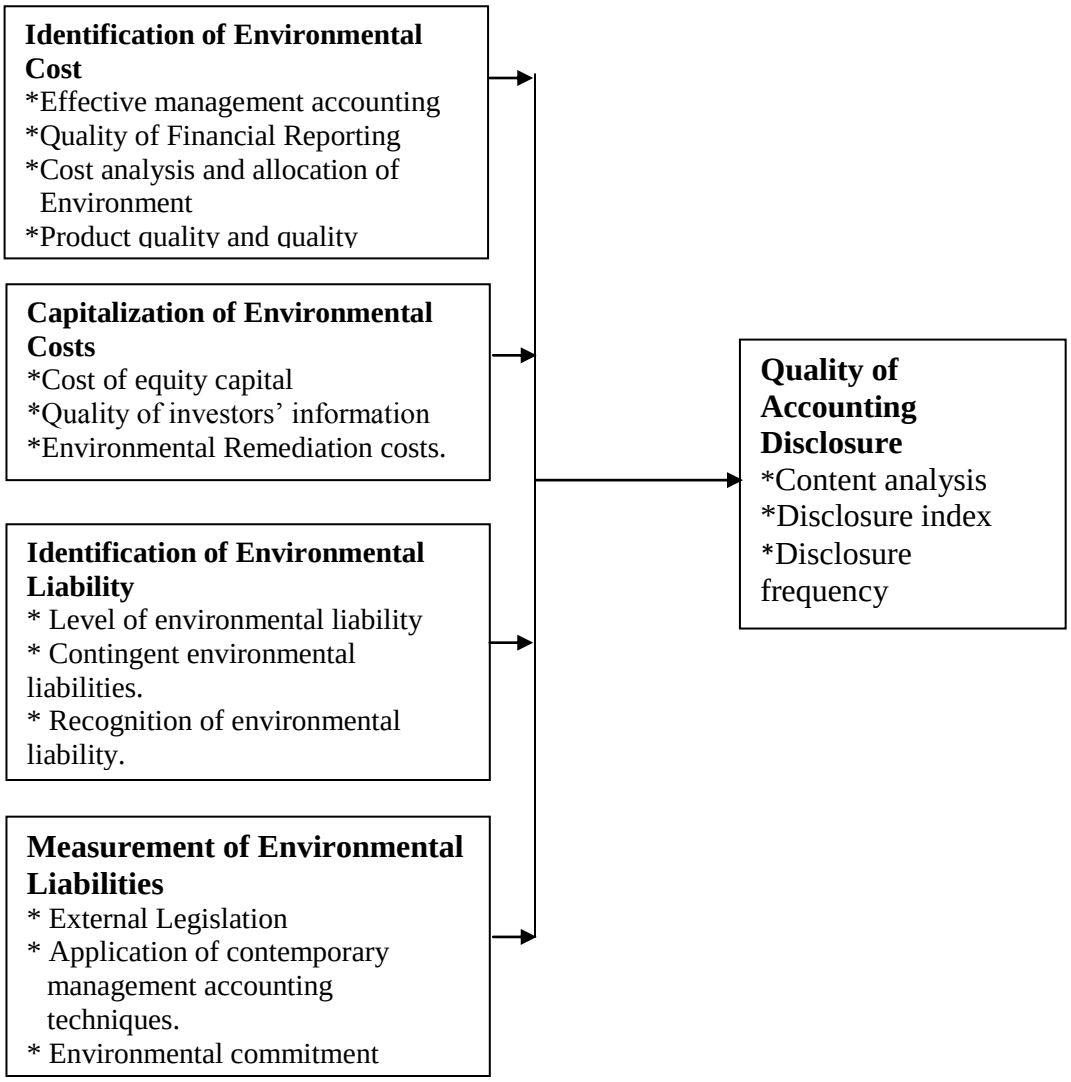

Figure 2.1. Conceptual framework

2.4 Review of Literature on Variable

This section reviews literature from prior scholars relevant to the variables under study regarding the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria.

2.4.1 Identification of Environmental Cost on Quality of Accounting Disclosure

Neungruthai and Mula (2012) carried a study towards a conceptual design for environmental and social cost identification and measurement system. The purpose of this paper was to identify an effective management accounting system using sustainability accounting concepts for environmental and social cost measurement to add shareholder value. Suggestions from literature showed that there was a need for a conceptual framework for environmental management accounting (EMA) and social management accounting (SMA) practices to be developed. This study therefore designed a conceptual model for a sustainability management accounting system (SMAS) combining EMA and SMA practices to create more accurate cost information of environment and social impacts. A SMAS also expands on activity based costing (ABC) application to help in the cost analysis and allocation of environment and social impacts. By applying a SMAS, companies generate more accurate cost information thus fully costing products for internal management decision and reporting purposes. The results of the study indicate that companies are intending to change to new management accounting practices while looking for ways to improve cost identification and measurement of environment and social impacts.

Bailey, Dickins and Reisch (2010) carried a study on discussion of public identification of US audit engagement partners on who benefits and who pays. The Public Company Accounting Oversight Board had issued a Concept Release, which would require audit engagement partners of US publicly traded companies to be identified by signing their

firm's audit reports. In this article, the authors attempted to identify who would benefit from – and who would pay for – identification of audit engagement partners. The authors summarized the commentary of responders on the Concept Release, comparing the Concept Release to provisions contained in the Sarbanes–Oxley Act of 2002, examining arguments for and against identifying the audit engagement partner, and summarizing the likely impact of adopting the Concept Release. They concluded that, if adopted, it is unlikely that audit partner identification would enhance audit quality. Further, the cost of additional audit and/or quality control procedures associated with implementation will likely be borne by companies and their shareholders.

Cohen (2008) conducted a study on Quality of Financial Reporting Choice: Determinants and Economic Consequences. The author investigates the determinants and economic consequences associated with firms' financial reporting choices. Recognizing the endogeneity associated with these choices, he finds evidence of a positive association between investors' demands for firm-specific information and financial reporting quality. The author also finds that higher proprietary costs are associated with a lower quality of financial information. As for the economic consequences, the evidence suggests that firms with high quality financial reporting policies have reduced information asymmetries. However, after accounting for the endogeneity associated with the reporting quality choice, the author finds no significant evidence that firms choosing to provide financial information of higher quality enjoy a lower cost of equity capital.

Francesco, Paul, Dionysia and Ioannis (2014) carried out a study on Goodwill Related Mandatory Disclosure and the Cost of Equity Capital. The authors examine whether goodwill related disclosure, as mandated by IFRS 3 and IAS 36, reduces implied cost of equity capital (ICC) for a sample of European firms for the period 2008 to 2011. They focus on goodwill since it is a significant amount on a company's balance sheet and it

conveys current and forward looking information relevant to a firm. Additionally, the goodwill impairment tests give rise to concerns about their implementation quality. The results of the study indicate a mean (median) compliance level of about 82% (83%) and a high variation among firms' disclosure levels. In depth analysis reveals that non-compliance relates mostly to proprietary information and information that reveals managers' judgment and expectations.

Botosan (1997), Botosan and Plumlee (2002), and Botosan, Plumlee, and Xie (2004) investigate Aggregate Disclosure's Direct Link to Cost of Equity Capital. Botosan (1997) limits the sample to the 1990 annual reports of companies in the machinery industry, develops a disclosure index based on disclosures in each firm's annual report, estimates cost of equity capital using an accounting-based valuation formula rooted in early work by Preinreich (1938) and Edwards and Bell (1961), and documents a negative association between disclosure level and cost of equity capital for those firms with a low analyst following.

Dunk (2002) conducted a study on Product Quality, Environmental Accounting and Quality Performance. The author noted that quality has typically been regarded as a key strategic component of competitive advantage and, therefore, the enhancement of product quality has been a matter of prime interest to firms. Quality provides a basis for strategic advantage, and thus improvement in product quality may lead to enhanced performance. However, a frequent concern is that product quality no longer provides enduring competitive advantage; instead, it has become essentially a competitive prerequisite. Hence, an assessment of whether improvements in product quality are reflected in greater quality performance is likely to be of considerable interest to organizations. Suggestions have been made that the implementation of environmental accounting also contributes to the enhancement of quality performance. The author

argued that the greater the integration of environmental issues into financial decision processes, the better the performance of the firm.

2.4.2 Capitalization of Environmental Cost on Quality of Accounting Disclosure

Mohamed and Faouzi (2014) examined the effect of corporate environmental disclosure on the cost of equity capital for a sample of Tunisian firms over the period 2003-2011. Using an approach based on increasing dividends to estimate firms' cost of equity, the authors found that firms with better environmental disclosure scores exhibit cheaper equity financing. In particular, their findings suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity. The paper contributed to the literature by adding evidence on effects of corporate environmental disclosure voluntary on long term economic forecasts of the cost of equity and on the financial value of firms.

Botosan, Plumlee, and Xie (2004) examine the Association between Disclosure Quality (both private and public) and Cost of Equity Capital at the Aggregate Disclosure Level. They capture the underlying quality of investors' public and private information sets from properties of financial analysts forecasts (which represent an ex posts reflection of the consequences of all disclosure decisions). They find that an inverse relation exists between the quality of public disclosure and cost of equity capital, as predicted by Easley & O'Hara (2004), but this relation is more than offset by the positive relation that exists between the cost of equity capital and private disclosure quality.

The business environment has witnessed changes over the years, mainly influenced by globalization and technological innovation. In recent years, there has been substantial increase in trading activities at the Stock Exchanges worldwide and Nigeria is not left out. For example, the market capitalization at the Nigerian Stock Exchange was N763.9 billion in 2002; it grew to N2.112 trillion in 2004 and to N5.12 trillion in 2006 (NSE

Factbook, 2007:37). Companies worldwide are now vying to penetrate international capital markets. Diamond and Verrecchia (1991), Easley and O'Hara (2004) and Kelly and Ljungqvist (2012) study show that the more information a firm discloses the more its cost of capital decreases. Previous empirical studies indicate a generally negative association between a firm's disclosure and fundamental risk measures, such as total risk and/or cost of capital. This result is interpreted as evidence of the usefulness of disclosures by firms (Campbell *et al.*, 2003; Leuz & Verrecchia, 2000; Botosan & Plumlee, 2002; Kothari, *et al*., 2009).

Shen and Huang (2010) carried out a study on an analysis of environmental disclosure of listed companies in China. Based on the content analysis of annual reports of listed companies from heavy polluting industries in 2007, the study describes the latest practices of environmental disclosure in China. The study discovers that: (1) A lot of environmental information has been disclosed, either voluntarily or mandatorily, and has covered most of the content themes suggested by Environmental Disclosure Guideline (EDG); (2) More firms provide quantitative or monetary information in mandatory disclosures, while voluntary disclosures are predominantly declarative in nature. (3) There are significant differences among industries in content, quality, and quantity of environmental disclosures. The finding of their study is to improve the environmental disclosures and finally the environmental performances of businesses in China.

McElroy (2007) conducted a study on Environmental Remediation Costs: To Deduct or to Capitalize and noted that Under IRC (Internal Revenue Code) Section 162, corporations may deduct "ordinary and necessary expenses (that are) paid or incurred during the taxable year in carrying on a trade or business." The IRS addressed the deduction of remediation costs in revenue ruling in which a deduction was allowed when the costs are not incurred for permanent improvements to the land and will not produce significant future benefits. Under the ruling, increased value is determined by comparing

the value "of the asset after the expenditure with the status of the asset before the condition arose that necessitated the expenditure (i.e., before the land was contaminated by the taxpayer's hazardous waste)." If value increases in this context, then the remediation costs must be capitalized. The ruling limits remediation deductions to amounts that are attributable to contamination caused by the taxpayer while the taxpayer owned the property. The IRS has allowed taxpayers to deduct the clean-up costs when there is a temporary break in ownership of the property, but deductions are not available for pre-acquisition contamination.

2.4.3 Identification of Environmental Liability on Quality of Accounting Disclosure

Obligation based on the principle that a polluting party should pay for any and all damage caused to the environment by its activities. In some countries, this is a strict liability if the damage can be attributed to a specific party.

Leary (2011) conducted a study on Factors Influencing the Level of Environmental Liability Disclosure in 10k reports. Sample firms consist of Fortune 500 companies identified by the Environmental Protection Agency as Potentially Responsible Parties. The study utilized a comprehensive environmental disclosure index to measure the extent to which sample firms disclosed environmental liability information required by Generally Accepted Accounting Principles (GAAP). Empirical tests demonstrate that the extent of required environmental disclosure is associated with size, profitability, and industry classification; however, the results regarding regulatory influence are mixed. The study used data from COMPUSTAT, EDGAR, and the Superfund Public Information System for years 1991-1997. The environmental disclosure index was compiled based on relevant authoritative guidance contained in Regulation S-K, SAB 92, and SFAS 5. Policy implications indicate that the Securities and Exchange

Commission must improve monitoring and enforcement efforts designed to promote adequate recognition and disclosure related to environmental liabilities.

Paul (2005) conducted a study on recognition, measurement and disclosure of environmental liabilities. The study undertakes to review current standards and practices with regard to the recognition, measurement and disclosure of environmental related liabilities in corporate financial statements. Its purpose is twofold: to establish the nature and extent of current requirements and practices; and to identify emerging trends likely to result in demands for still more detailed disclosure. There is evidence that corporate executive and director attitudes have begun to reflect a greater awareness of, and increasing sensitivity to environmental issues (United Nations, 1991a, 1991b; Nash, 1990). However, much of this same evidence shows a disparity between the perceived importance of environmental issues, and the quality of environmental disclosure in publicly available financial statements. In part, the existence of this disparity has been tentatively attributed to a lack of detailed accounting standards relating to environmental issues, and to reluctance on the part of corporate management to fully apply existing standards that would facilitate more complete disclosure (United Nations, 1992).

A company's attitude to the environment is likely to be seen as a benchmark of its commitment to innovation and good management. Companies setting the pace on environmental issues will be seen as the leaders of the corporate sector (Lickiss, 1991). In USA, federal agencies were required to report information on contingent environmental liabilities in their financial reports. Agencies were required to recognize a contingent liability when a future outflow or other sacrifice of resources as a result of past transactions or events was probable and measurable. Contingent liabilities that did not meet the criteria of probable, but were reasonably possible were disclosed in notes in financial statements. As such, the Department bureaus were required to report contingent environmental liabilities to the Office of Financial Management (OFM) on a quarterly

basis. In their findings they found out that if the environmental disclosure liability had a liability status of probable, the entire range of the estimated total cleanup costs for probable sites was disclosed in notes associated with the financial statements.

2.4.4 Measurement of Environmental Liability on Quality of Accounting Disclosure

Plumlee, Brown and Marshall (2010) conducted a study on voluntary environmental disclosure quality and firm value. This study examined the relationship between the quality of a firm's voluntary environmental disclosures and firm value by exploring the relationship between the components of firm value (cost of equity and future expected cash flows) and voluntary environmental disclosure quality. The authors measured voluntary environmental disclosure quality using a disclosure index consistent with the Global Reporting Initiative disclosure framework for a sample of US firms across five industries and documented a positive relation between voluntary disclosure quality and firm value through both the cash flow and cost of capital components. In addition to overall disclosure quality, the authors consider the type (e.g., hard/soft) and content of different types of disclosure in their analysis. Based on this analysis, they documented an inverse association between voluntary disclosure quality and a firms cost of equity, in contrast with prior research.

Li and McConomy (1999) found that Canadian companies with strong environmental commitment were able to adopt new environmental accounting standards quicker than companies with less environmental commitment, thereby enhancing credibility and reducing litigation risk. Making adequate provisions for environmental liabilities also prevents the company from going bust or suddenly developing a serious cash flow problem. Timely identification and planning for these events enables the company to incorporate such issues in its strategic planning. Evidence in support of a view that

environmental disclosures as such enhance market valuation of a company seems to be inconclusive (Cormier & Magnan 1997). However, it could be argued that companies that consistently report on environmental matters in their financial statements, be it good or bad news, create confidence in investors and creditors. This may lead to improved market ratings and enable access to capital on easier terms. Firms are concerned with the environment due to varios reasons. (Banerjee, 2001) found that external pressures such as legislation and public concern, as well as market opportunities arising from environmental concerns, have compelled firms to integrate environmental issues into their strategic planning process literature by describing organization participation in a wide range of environmental activities in a number of industry sectors.

Liaqat (2006) carried out an empirical study to find out the Application of Contemporary Management Accounting Techniques in Indian industry through a survey of 530 member companies of the National Association of Financial Directors and Cost Controllers. Sixty three companies responded which constituted the sample; a response rate of about 12%. The sample was stratified in two segments; activity based cost management (ABCM) user firms and Non ABCM user firms. A five point Likert scale was used. The focus of the study was to find evidence on how widely traditional and contemporary management accounting practices were adopted by Indian industry. The investigations revealed that improvement of overall profitability and cost reduction were the motivating factors for using management accounting in Indian companies. The researcher found a positive association between the adoption of activity based cost (ABC) and company characteristics (e.g. degree of customization, pressure of competition, business size, and proportion of overhead to total cost).

2.4.5 Quality of Accounting Disclosure

Corporate disclosure is critical for well-functioning capital markets (Healy & Palepu, 2001). Published annual reports are required to provide various users such as shareholders, employees, suppliers, creditors, financial analysts, stockbrokers, management, and government agencies with timely and reliable information useful for making prudent, effective and efficient decisions. The extent and quality of disclosure within these published reports vary from company to company and also from country to country.

Literature reveals that the level of reliable and adequate information by listed companies in developing countries lags behind than in developed ones and government regulatory forces are less effective in driving the enforcement of existing accounting standards (Ali, Ahmed & Henry, 2004). Non-disclosure results from immature development of accounting practice in developing nations (Osisioma, 2001). The government regulatory bodies and the accountancy profession in these nations suffer from structural weaknesses which could encourage corporate fraud at the expense of those that have economic and proprietary interest in the business environment.

Lai, (2006) argued that Environmental Accounting is a concept that every corporate member of a community and society should practice. It is not enough for businesses to create and secure jobs, to provide products and services to society, and to pay taxes. More and more consumers have shown growing interest in making sure the products they purchase are produced in a socially and environmentally responsible manner. This puts businesses under pressure to make responsible and transparent efforts together with the governments and the civil society to create a more sustainable world (Kerby, 2001). As such, businesses should recognize that addressing wider social and environmental problems is fundamental in ensuring long-term success (UNIDO, 2002).

Companies could be asked to publish details of their environmental and social impacts alongside their financial accounts under new rules being discussed with the organizations that set accounting standards. This initiative would mean that businesses have to account for the impacts they have on local water quality, plants and animals and entire environment. It warns that companies are causing vast damage to the "living fabric of this planet", raising threats to society and their own profits, but also that the business opportunities to make money from improving the environment are forecast to quadruple over the next decade.

Dunk (2002) investigated the extent to which product quality and the implementation of environmental accounting positively influence quality performance. He suggested that the integration of environmental issues into financial decision processes by using environmental accounting would contribute to the enhancement of quality performance and firm performance as a whole. Gamble *et al*. (1995) (US) investigated the quality of environmental disclosures in the 10K and annual reports of 234 companies in twelve industries, between 1986 and 1991. An instrument was designed to measure the content of environmental disclosures, and descriptive reporting codes were used, based on the manner in which the sample firms disclosed environmental information. Companies in the sample were from industries thought to have the greatest potential for environmental impact; oil and gas; chemicals and related; plastics, resins and elastomers; soap, detergent and toilet preparations; perfume, cosmetics and toilet preparations; paints varnishes and lacquers; petroleum refining; steel works and blast furnaces; motor vehicles and car bodies; and hazardous waste management.

According to a research by Polasek (2010) it was established that businesses that try to minimize negative environmental impact of their activities can benefit through new business opportunities. For instance, a business that actively cares for the natural environment has a better chance of succeeding in tenders held by large businesses and

the public sector and a better chance of attracting new customers from the ranks of environmentally conscious consumers. Freedman and Stangliano (1991) found that companies with better environmental disclosure track records experienced fewer declines in market valuation following the introduction of more stringent environmental legislation, than companies with poorer disclosure practices. Proper EA results in a better reflection of the financial performance and situation of an organization, which enhances the quality of decision-making by those stakeholders who base their decisions on the financial statements of an organization.

Fekrat *et al*. (1996) studied the scope and accuracy of environmental disclosures made in corporate annual reports. They also attempted to provide a modest test of the voluntary disclosure hypothesis in the context of environmental disclosures. Environmental disclosures of 168 companies in six industries from 18 countries were analyzed and the mean scores for disclosures and environmental performance were examined. Overall, the results indicated significant variations in environmental disclosures, and no clear support for the voluntary disclosure hypothesis, as well as a lack of association between disclosure and environmental performance.

Deegan and Gordon (1996) analyzed the environmental disclosure practices of Australian corporate entities in three ways. Firstly, by reviewing the annual reports of a sample of companies for the 1991 financial year, secondly, by determining the change in corporate disclosure practices for the period 1980-1991 and thirdly, by investigating the role of environmental lobby groups. Overall, they found an increase in environmental disclosures over the period 1980-1991, but the standard of the 1991 disclosures was not necessarily very impressive, with an average of 186 words of self-laudatory material per annual report. Environmental lobby groups appeared to have an effect because there was a positive correlation between environmental sensitivity and the level of disclosure, and in some sensitive industries between environmental disclosure levels and firm size.

Deegan and Rankin (1996) analyzed environmental disclosures made by firms in Australia which had been successfully prosecuted by the Australian Environmental Protection Authority (EPA). Using legitimacy theory as their theoretical basis, the authors examined a sample of annual reports to determine whether there was any difference in the disclosure patterns of firms which had been prosecuted by the EPA, compared to those which had not been prosecuted. The authors concluded that where there are no regulations or requirements to the contrary, Australian companies willingly provide information favorable to their image, even after prosecution.

Burritt and Welch (1997) reported on an exploratory analysis of the environmental disclosures of a sample of Australian Federal public-sector entities. The annual reports of sixty entities were examined for the ten-year period 1984-1993. The results showed an increase in total environmental disclosures over the period with budget entities reporting a greater volume of environmental disclosures than non-budget entities. The predominant form of environmental disclosure was qualitative not physical or financial. Seven themes were found with community education and training, and energy related disclosures the most prominent. Future directions for research in this area identified by the authors included; possible new accountability structures based on ecological considerations, and measurable environmental outcomes.

Today's challenges to business to raise the level of its environmental performance come from many quarters. They arise from new legislation and government regulations, market pressures from the 'green consumer', the interests of stakeholders such as investors and employees, and general public awareness, focused by the activities of environmental groups and reporting in the media. It has become essential for companies to increase their responsibility regarding all aspects of the environment and to adopt existing practices so as to cause less environmental damage. Harnessing this awakening responsibility within the corporate sector is therefore a key element in any strategy for

achieving the goal of 'sustainable development' (Deloitte Touché Tohmatsu International, *et al*., 1993).

Macve and Carey (1992) argued that to effect changes in the adoption of environmental reporting, several steps may be taken by management. They should establish clear lines of responsibility on environmental matters and give a board member overall responsibility for such issues. The company should also set out its environmental policy, prioritize objectives and develop information systems for monitoring its performance. Stakeholders, acting either formally or informally, individually or collectively, are a key element in the firm's external environment that can positively or negatively affect the organization (Murray & Vogel, 1997). Their diverse nature and range of actors intrinsically present a problem for individual managers who are searching for a clear working definition for stakeholder dialogue. The challenge for business involves identifying to whom and for whom they are responsible, and how far that responsibility extends. Underpinning the difficulties of managing the relationship between a business and its stakeholders are the issues of divergent (and often conflicting) expectations between stakeholders (Greenfield 2004; Deresky 2000; Bowmann-Larsen & Wiggen 2004).

There is a worldwide debate on the issue of environmental management, stemming from a flow of evidence about ecological degradation caused by economic development (Taylor, *et al*., 2001). Due to cost pressures, customer awareness, supply chain relations and activities of environmental campaigners they encourage the companies to go for environmental initiatives (Perry & Sheng, 1999). The society particularly from developed countries highly concern about the impacts on the quality of their life due to the pollution of air, land and water. However, the same concern is rather slow in developing countries including Nigeria.

External pressures such as legislation and public concern, as well as market opportunities arising from environmental concerns, have compelled firms to integrate environmental issues into their strategic planning process literature by describing organization participation in a wide range of environmental activities in a number of industry sectors (Banerjee, 2001). Findings from UNEP (1996) reveal that although not many nations are currently reporting disclosures on environmental issues in financial statements, but quite a growing number do so to internal management. Pressure is mounting for mandatory rather than voluntary reporting worldwide. Corporate organizations are engaging more actively in environmental disclosure in their annual financial statements.

Gray, Owen and Maunders (1987) stated that Social accounting has been synonymously used as Social and Environmental Accounting, Corporate Social Reporting, Corporate Social Responsibility Reporting, Non-Financial Reporting, Green Accounting or Sustainability Accounting. Research into social and environmental accounting and associated disclosure has existed and enjoyed varying levels of interest for several decades (Deegan, 2002; Gray, 2002; Mathews, 1997). Friedman's (1962) assertion that the only proper reason for the existence of a corporation is to make profit for its shareholders, may have provided the impetus for an examination of the relationships between corporate social performance, and disclosure and/or economic performance.

Rezaee and Elam (2000) discussed a substantial number of environmental laws and regulations, which have been enacted to hold businesses accountable for their environmental responsibilities. They further mentioned that the growing interest in environmental concerns by the public, government, and business community, environmental accountability has become an important issue. Currently, there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and

voluntary initiatives as an integral part of social responsibilities. Since the 1970s, green consumerism has led to scientific green management and the manufacture of environment-friendly products, which help enterprises develop a new public image (Shrivastava, 1995). EA has been used to analyze, utilize, and correlate financial and non-financial information to realize sustainable development cognizant of environmental management policies (United Nations, 2001).

Environmental management accounting enables the development and implementation of an environment-related accounting system that helps enterprises manage their environmental and economic performance in the conduct of reporting and audit of corporate information (International Federation of Accountantss, 2009). Calafell *et al*. (2006) suggested that accounting profits and losses also encompass social and environmental responsibilities. Therefore, an appropriate conceptual framework should be developed to encourage enterprises deliver information on the influences of organizational behaviour on the environment, enabling enterprises to analyze financial information and develop a new accounting framework for promoting CSR. Controlled EA can then provide real-time and forward-looking information, and serve as a supportive tool for decision making by the senior management. Controlled EA guarantees more benefits for corporations with respect to economic information management and environmental protection policies (Calafell *et al*.,2006).

According to Meek, Roberts and Gray (1995) the disclosure of adequate and reliable information is necessary to penetrate these international markets. Those competing for funds in the international capital arena have been found to comply with disclosing mandatory requirements and in addition disclose significantly more voluntary accounting information that enables them to compete globally. Lambert *et al*. (2007) argued that accounting information has both "direct" and "indirect" effects. Direct effects are where accounting information, per say, does not affect a firm's cash flow but

affects an investor's assessment of expected cash flow. Indirect effects are where accounting information can also influence a firm's real decisions.

The inherent mechanisms of capital markets induce managers to disclose a substantial amount of their private information about the value of their firm. These mechanisms involve both mandatory and voluntary disclosures. Financial regulation imposes a considerable amount of mandatory reporting via a variety of regulated financial reports, such as financial statements, footnotes, management discussion and analysis, etc. Still, managers may possess additional relevant information that can be disclosed voluntarily through management forecasts, press releases, analysts' meetings and conference calls, Internet sites and other communication channels.

However, unless there is no correlation between mandatory and voluntary disclosures, mandatory disclosure may influence the incremental informational content for investors of voluntary disclosure. Hence, mandatory disclosure might be a key determinant for discretionary disclosure strategies of managers, as well as for the total level of disclosure in capital markets. Corporate disclosure can mitigate the adverse selection problem and increase market liquidity by leveling the playing field among investors (Verrecchia, 2001). Its effect is in two-fold. More information in the public domain makes it harder and more costly for traders to become privately informed. As a result, fewer investors are likely to be privately informed, when they sell shares in the future and hence reduce the price at which they are willing to buy shares in the initial securities offering (Baiman & Verrecchia, 1996; Verrecchia, 2001).

The existence of (net) benefits to voluntary disclosure is not sufficient to justify mandatory disclosure because firms have incentives to voluntarily provide information if the benefits exceed the costs (Ross, 1979). The idea of market-based disclosure incentives is best illustrated with the unraveling argument (Grossman & Hart, 1980;

Grossman, 1981; Milgrom, 1981). Without corporate disclosures, investors are unable to distinguish between good and bad firms and therefore offer a price that reflects the average value of all firms. Mandated financial reporting and voluntary disclosure are two channels of corporate disclosure by which managers communicate private information with capital markets and both are relevant, as evidenced by stock price as well as liquidity changes associated with the two types of disclosures (Welker 1995; Leuz & Verrecchia 2000; Leuz & Schrand 2009; Balakrishnan, Billings, Ljungqvist, & Kelly, 2012). Understanding this relation is the first step in addressing the long-standing research question on what economic rationale justifies regulating corporate disclosure and whether voluntary disclosure obviates the need for reporting regulations.

Disclosures are often qualitative and narrative in nature which makes objective measurement difficult for empiricists. Yet, there seems to be agreement that timely, relevant, verifiable, reliable, unbiased, comparable and consistent disclosures and financial reports are all "desirable" properties of corporate disclosures and financial reports (FASB, Statement of Financial Accounting Concepts No. 2). Several additions to US GAAP have been made since the Securities and Exchange Act of 1934 in response to investors' demand for transparent financial markets. Such reforms typically introduce new rules to modify the content of, and the practices that bring about, firms' mandated financial reports, which in turn would change the level of voluntary disclosure. Given that voluntary and mandatory disclosure are likely interdependent, researchers and regulators cannot assess the economic role of reporting regulations without considering its effect on voluntary disclosure.

Although the two channels of disclosure are inextricably linked, the precise nature of this relation is not well understood. This study investigates the interaction between mandatory financial reporting and voluntary disclosure by employing the mandatory adoption of International Financial Reporting Standards (IFRS) as an exogenous change

to mandatory reporting to examine changes in firms' voluntary disclosure practices (Karthik, Xi & Holly, 2012). To measure disclosure, focus is on a discretionary action, namely the extent to which managers provide earnings forecasts, the most prominent performance measure that a firm supplies to investors. Ex-ante, it is unclear how the mandatory adoption of IFRS could influence management forecasts. On the one hand, mandatory financial reporting and voluntary disclosure can be complements, wherein the former produces verifiable information that improves the credibility of the latter and therefore encourages managers to issue more forecasts, i.e. the confirmatory role of mandatory reporting. Prior studies document improved mandatory reporting quality following IFRS adoption evidenced by earnings with lower manipulation and higher value relevance, timeliness, and information content (Barth, Landsman, & Lang 2008, Landsman, Maydew & Hornock, 2011).

Therefore, given the evidence that IFRS improves the verifiability of earnings, the complementary view suggests that the mandatory adoption of IFRS should increase management forecasts. On the other hand, mandatory financial reporting and voluntary disclosure could also be substitutes. Managers often use voluntary disclosure to supplement mandatory reporting and communicate their superior knowledge of firms' performance to investors compared to domestic accounting standards (Karthik, Xi & Holly, 2012). IFRS has more extensive disclosure requirements and recognition rules. Disclosures that were previously classified as mandatory may now fall into the mandatory reporting regime under IFRS. In addition, since IFRS produces more timely and value-relevant earnings numbers, the demand for manages to provide supplementary information to help investors better predict future earnings could be reduced.

Content analysis is a research technique used for making replicable and valid inferences from data due to their context (Krippendorff, 1980). Using the content analysis, the amount of information disclosed can be measured per category or per company by

counting data items, i.e the number of words, the number of sentences, and the number of pages. Content analysis can be classified into two; conceptual content analysis and relational content analysis. The conceptual content analysis is used to determine the existence of frequency of certain key words or concepts within texts or set of texts. Relational content analysis is used by examining the relationship among concept in a text. The former is frequently used in the disclosure literature. Content analysis can be partial or comprehensive. Partial content analysis covers part of the document or selected items of information or key words. Comprehensive content analysis, also called holistic content analysis (Beattie *et al*., 2004), covers the whole document.

Disclosure indices are extensive lists of selected items, which may be disclosed in company report (Marston & Shrives, 1991). A disclosure index could include mandatory items of information and/or voluntary items of information. It can cove information reported in one or more disclosure vehicles such as corporate annual reports, interim reports, investor relations etc. It can also cover information reported by the company itself and/or others such as financial analysts reports. Hence, a disclosure index is a research instrument used to measure the extent of information reported in a particular disclosure vehicle(s) by a particular entity(s) according to a list of selected items of information. The first use of such an index was in 1961 by Cerf and it has been used ever since.

Prior studies using the disclosure index vary in terms of the degree of the researcher involvement in constructing the index, the type of information disclosure and the number of items of information included in the index. There are differences in the measurement approach, the range of industries/countries covered by the index and other differences. For example, studies from developing countries tend to examine level of compliance with mandatory disclosure because of a relaxed enforcement policy compared to that of developed countries (e.g., Ali *et al*., 2004).

Lang and Lundholm (2000) use a comprehensive measure of disclosure based on all available public disclosure by or about each firm. They use disclosure frequency and changes in disclosure frequency to proxy for the level of disclosure. Schrand and Verrecchia (2004) use disclosure frequency defined as the number of disclosures made by the firm during the 90-day period preceding the initial public offering (IPO) and the 90-day period following the IPO. Brown, Hillegeist and Lo (2004) use the number of conference calls made by each firm as their measure of voluntary disclosure.

a) Environmental Accounting

Environmental accounting is an emerging and dynamic field. It is a fruitful attempt to identify and bring to the light the resources exhausted and cost rendered reciprocally to the environment by the business houses. The study of Nagle (1994), on environmental accounting reveals that corporate managers are placing high priority on environmental accounting. Environmental accounting is usually involved in several areas, such as: energy accounting, waste accounting, environmental criteria in capital expenditures, target setting for efficiency improvements (Wycherley, 1997). Environmental accounting system is part of a larger corporate environmental policy, which aims to prevent and reduce environmental impact, through life-cycle analysis, integration of environmental values into the supply chain, eco-design of products and services and environmental monitoring and auditing (Dragomir, 2008).

Environmental accounting as a prevalent subject in the international community is not yet a priority in Nigeria. According to the US Environmental Protection Agency (1995a), Green accounting or Environmental accounting is defined as: 'identifying and measuring the costs of environmental materials and activities and using this information for environmental management decisions. The purpose is to recognize and seek to mitigate the negative environmental effects of activities and systems'. Cormier and

Gordon (2001) opined that environmental accounting is not only part of a reporting system. It is also a very effective communication tool, since all environmental remedial strategies implemented by managers must be accompanied by disclosure to have any effect on external parties. That is, information is necessary to change perceptions. Remedial action which is not publicized will not be effective in changing perceptions. Environmental accounting is about making environmental related costs more transparent with corporate accounting systems and reports. In other words, environmental accounting is a system that attempts to make the best possible quantitative assessment (in terms of either monetary or physical units) of the costs and benefits to an enterprise due to the environmental preservation activities that it undertakes.

Howes (2002) defines environmental accounting as: 'the generation, analysis and use of monetarized environmentally related information in order to improve corporate environmental and economic performance'. In the opinion of Howes, environmental accounting does not only focus on internal and external environmental accounting but links environmental and financial performance more visibly. Environmental accounting assists in getting environmental sustainability embedded with an organization's culture and operations. The aim is to provide decision makers with the information that enable the organization to reduce costs and business risks and add value. Environmental accounting in the context of national income accounting refers to natural resource accounting, which can entail statistics about a nation's or region's consumption, extent, quality, and value of natural resources, both renewable and non-renewable. Environmental accounting in the context of financial accounting usually refers to the preparation of financial reports for external audiences using Generally Accepted Accounting Principles. Environmental accounting as an aspect of management accounting serves business managers in making capital investment decisions, costing determinations, process/product design decisions, performance evaluations, and a host of other forward-looking business decisions.

Gray, Bebbington and Walter (1993) defined environmental accounting in the following terms: "it can be taken as covering all areas of accounting that may be affected by the business response to environmental issues. Major functions of environmental accounting are: (i) recognizing and seeking to mitigate the negative environmental effects of conventional accounting practices; (ii) separately identifying environmentally related costs and revenue within the conventional accounting systems; (iii) taking active steps to set up initiatives in order to ameliorate existing environmental effects of conventional accounting practices; (iv) devising new forms of financial and non financial accounting system, information systems and control systems to encourage more environmentally management decisions; (v) developing new forms of performance measurement, reporting and appraisal for both internal and external purposes; (vi) identifying, examining and seeking to rectify areas in which conventional (financial) criteria and environmental criteria are in conflict; (vii) experimenting with ways in which sustainability may be assessed and incorporated into organizational orthodoxy.

Broadly, environmental accounting involves the identification, measurement and allocation of environmental costs, the integration of these costs into business, identifying environmental liabilities, if any, and finally communication of this information to the company's stakeholder as part of general purpose financial statements.

2. 5 Critique of Existing Literature

Uwiegbe and Olayinka (2011) investigated the level of corporate social environmental disclosure among listed companies in the brewery and building material industry in Nigeria. This study contrast significantly with the current study which investigated the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The present study employed the use of multiple regression analysis to establish the relationship between the dependent and independent variables on shipping

lines in Nigeria. The present study find out whether there is a significant difference in the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria while the study seeks to find out whether there is a significant difference in the level of corporate social environmental disclosures between the brewery and building material industry in Nigeria. The sample size was another area of contrast. The study used a small number of five as the sample size. The current study makes use of larger number of sample size to have a valid generalization of the conclusion. The study adopted the use of secondary data as the only source of data while the current study adopt the use of both primary and secondary data and evaluate the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria

Bassey, Sunday and Okon (2013) examined the impact of environmental accounting and reporting on organizational performance with particular reference to oil and gas companies operating in the Niger Delta region of Nigeria. The study contrast significantly with the present study which examined the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. Another area of contrast is the methodology adopted for this study. The current study employed the use of multiple regressions in order to establish the relationship between the variables. Under the present study, elements were selected by means of purposive sampling technique while the study adopted the random and stratified sampling technique.

Rene (2007) examined the use of accounting theory in explaining corporate social disclosure behaviour. The synthesis research of accounting disclosure and corporate social responsibility research is examined. The present study contrast with the study which examined the use of accounting theory in explaining corporate social disclosure while the present study examined the effect of environmental accounting on the quality

of accounting disclosure of shipping lines in Nigeria. The study is compared with the present study which employed the use legitimacy theory as a theoretical basis for corporate disclosure.

Daniel and Ambrose (2013) investigated that environmental accounting is the ability to provide accurate information in the financial statements regarding the estimated social cost occasioned by the production externalities on the environment and how much deliberate intervention cost had been incurred to bridge the gap between the marginal social cost and the marginal private cost by a firm. The study contrast significantly with the present study which objective was to determine the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. Another contrast is that the study used a small sample size while the present study used a larger number of sample size to have a valid generalization of the conclusion. The study compare well with the present study where both studies employed the use of multiple regression models in analyzing data.

Prem, Mishiel and Rajesh (2011) examined the factors influencing the level of environmental disclosure information from a sample of 45 Indian industrial listed companies in their websites and annual reports. The study compare well with the present study where both studies employed the use of multiple regression analysis in analyzing data.

Uwuigbe (2012) examined the utilization of the internet for communicating corporate environmental information by listed financial and non financial companies in Nigeria. This study contrast significantly with the present study which examined the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. Another point of contrast is the method of analysis. The present study employed the use of multiple regression analysis to establish the effect between the dependent

variable and the independent variables. The study contrast significantly with the present study as the present study makes use of larger sample size to have a valid generalization and conclusion.

Beredugo and Mefor (2012) examined the impact of environmental accounting and reporting on sustainable development in Nigeria. The study evaluated the relationship between environmental accounting and reporting and sustainable development in Nigeria. The study contrast significantly with the present study which examined the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The study also contrasts in the area of data analysis. The present study employed the use of multiple regression analysis to establish the effect between the dependent and the independent variables.

Plume, Brown, Hayes and Marshall (2010) examined the voluntary environmental disclosure quality and firm value: Further Evidence. The study examined the relationship between the quality of a firm's voluntary environmental disclosures and firm value by exploring the relationship between the components of firm value (expected future cash flows and cost of equity) and voluntary environmental disclosure quality. The study contrast significantly with the current study which examined the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. Another point of contrast is the sample size. The present study makes use of larger sample size to have a valid generalization and conclusion.

2.6 Research Gap

Bassey, Effiok and Eton (2013) conducted a study on the impact of environmental accounting and reporting on organizational performance and found out that environmental cost has satisfied relationship with firm's profitability, Mohamed and Faouzi (2014) examined the effect of corporate environmental disclosure on the cost of

equity capital and found out that investment in practices corporate environmental disclosure contributes substantially to reducing firms' cost of equity. Registered and non registered companies do not fully comply with the disclosure requirements as specified by the board governing the companies in Nigeria. Also, the limited awareness of environmental costing principles and methodology has become an important issue to be addressed. If environmental issues and activities that are vital are not disclosed, financial statement cannot be said to reveal state of a 'true and fair view of affairs'. Lack of proper use of International Accounting Standards in affected countries (of which Nigeria is a part) hinders "transparency" in the financial statements of corporations. As a result of this, financial statements fail to provide useful information, on a timely basis.

However, the studies failed to investigate the effect of environmental accounting and how it affects the quality of accounting disclosure in the shipping lines in Nigeria. These are the research gaps this study wishes to bridge. It is for this reason this study investigated the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria.

2.7 Summary

The above chapter reviews the various theories that explain the independent and dependent variables of the study. The reviewed theories are then critiqued for relevance to specific variables. The chapter also explored the conceptualization of the independent and the dependent variables by analyzing the relationships between the two set of variables. In addition, an empirical review was conducted where past studies both local and global were reviewed in line with the following criteria, title, scope, methodology resulting into a critique. Therefore, from these critiques the research gap is identified.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides details about the methodology adopted to assist in achieving the research objectives. It details research design, research population, sample and sampling techniques, data collection instruments, data collection procedures, pilot testing and data processing and analysis. Henning (2004) describes research methodology as coherent group of methods that complement one another and that have the ability to fit to deliver data and findings that will reflect the research question and suit the researcher's purpose. According to Polit and Hungler (2004), research methodology is a way of obtaining, organizing and analyzing data and thus methodology decisions often depend on the nature of the research question. In this study, the methodology refers to how the research was done and its logical sequence.

3.2 Research Design

Various scholars have defined research design and the definitions seem to move towards the same direction. Beck (2003) defines research design as the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process. According to Lavrakas (2008), a research design is the structure, or the blueprint, of research that guides the process of research from the formulation of the research questions and hypotheses to reporting the research findings. A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kothari, 2004).

Descriptive survey research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group, whereas diagnostic research studies determine the frequency with which something occurs or its association with something else (Kothari, 2004). Descriptive research is conducted to describe the present situation, what people currently believe, what people are doing at the moment and so forth (Baumgartner, Strong and Hensley, 2002). According to Kothari (2004), descriptive research includes surveys and fact finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present (Kothari 2004).

In contrast, a correlation survey research involves collecting data in order to determine whether and to what degree a relationship exists between two or more quantifiable variables. Survey research is the most common type of research design which involves determining the views or practices of a group through interviews all by administering a questionnaire. Jackson (2002), states that a survey typically uses a data-collection method with a series of questions administered to a particular population in order to gain information about that population. The degree of relationship is expressed as a correlation coefficient (r).

The choice of correlational survey research design was because it was used to explore relationships between variables and to predict a subject score on one variable given his or her score on another variable. This method permits one to analyze interrelationships among a large number of variables in a single study. It also allows one to analyze how several variables either singly or in combination might affect a particular phenomenon being studied. The method also provides information concerning the degree of relationships between the variables being studied (Jackson, 2002; Kothari 2004; Mugenda and Mugenda, 1999). This study used descriptive and correlational analysis

where the relationship of the independent variables and dependent variable were identified by regressing the independent variables with the dependent variables.

3.3 Population of the Study

Parahoo (1997) defines population as the total number of units from which data can be collected such as individuals, artifacts, events or organizations. Burns and Grove (2003) describe population as all the elements that meet the criteria for inclusion in a study. Burns and Grove also state that population includes all elements that meet certain criteria for inclusion in a study. A population is defined as total collection of elements about which we wish to make some inferences (Cooper & Schindler, 2011). Other scholars (mcmillian & Schumacher 2010; Zikmund, 1997) define population as a large collection of subjects from where a sample can be drawn. Mugenda and Mugenda (1999) define population as the entire group of individuals, events or objects having a common observable characteristic. In other words, population is the aggregate of all that conforms to a given specification. All items in the field of enquiry constitute a 'Universe' or 'Population' (Kothari, 2004). The population for this study was the entire shipping companies in Nigeria.

Kitchenham and Pfleeger (2002) assert that a target population is the group of individuals to whom the survey applies. It is the collection of individuals about whom conclusions and inferences are made (Enarson, Kennedy & Miller, 2004). Mugenda and Mugenda (2004) term target population as that population to which a researcher wants to generalize the results of his study. The study's target population was 101 registered shipping companies in Nigeria. The target population was restricted to three departments. However, the respondents of the target population comprise of the legal department, finance and account department and technical and marine department of

each company selected. Other level of employees may not have the required information about accounting and quality of accounting disclosure.

3.4 Sampling Frame

A sampling frame describes the list of all population units from which the sample is selected (Cooper & Schindler, 2006). The elementary units or the group or cluster of units may form the basis of sampling process in which case they are called sampling units. A list containing all such sampling units is known as a sampling frame (Kothari, 2004). Thus sampling frame consists of a list of items from which the sample is to be drawn. In this study the sampling frame is the list of 101 registered shipping companies in Nigeria. These employees are in various departments with heads. The employees' data base was derived from the human resource records of the company's profiles. The sample frame for all the shipping companies is demonstrated in appendix III.

3.5 Sample and Sampling Technique

A complete enumeration of items in the population is known as a census inquiry (Kothari, 2004). It can be presumed that in such an inquiry, when all items are covered, no element of chance is left and highest accuracy is obtained but in practice this may not be true (Kothari, 2004). Bryman (2008) and Spiegal (2008) define a sample as a part of the total population. According to Polit and Beck (2003), a sample is a proportion of population to be researched while Kothari (2004) defines a sample as the selected respondent representing the population. Hollaway and Wheeler (2002) asserts that sample size does not influence the importance or quality of a study and note that there are no guidelines in determining sample size in qualitative research. The sample should be as representative as possible of the entire population. Kerlinger (1973) asserts that the smaller the sample, the larger is the sampling error and the larger the sample, the smaller the error.

Sample of the respondents was grouped into strata of the legal department, finance department and the technical and marine department staff of the shipping lines in Nigeria. Within each of the strata, simple random sampling was used to identify individual respondents who were issued with a questionnaire to respond to research statements. A unit of analysis was the shipping company. The following formula developed by Cochran (1963) was used to guide the selection of the respondents as suggested by Mugenda (2008).

$$\underline{n= Z^2*p*(1-p)}$$
$$e^2$$

Where: n = Sample size for large population

Z = Normal distribution Z value score, (1.96)

p = Proportion of units in the sample size possessing the variables under study, where for this study it is set at 50% (0.5)

e = Precision level desired or the significance level for the study which is expressed as decimal (e.g., .05 = +/- 0.05 percentage points).

The substituted values in determining the sample size for a large population are as follows.

$$n= \underline{(1.96)^2*(0.5)(0.5)} = 384$$
$$(0.\ 05)^2$$

Therefore, the sample size was 384 i.e the sample should not be less than 384 respondents.

Table. 3.1: Determination of Sample size

Departments	**Target Population**	**Sample Size**	
		Sample Size for all The Shipping Companies	**Sample Size For Each of the Shipping Company**
Legal Department	497	101	1
Finance & Account	444	303	3
Technical & Marine	433	101	1
Total Target Population	**1374**	**505**	**5**

3.6 Data Collection Instruments

Information towards the variables in the conceptual framework was collected through various instruments. The variables are; Identification of Environmental Cost,

Capitalization of Environmental Cost, Identification of Environmental Liability and Measurement of Environmental Liability. The choice of data collection instrument is often very crucial to the success of a research and thus when determining an appropriate data collection method, one has to take into account the complexity of the topic, response rate, time and the targeted population. According to Parahoo (1997), a research instrument is a tool used to collect data. An instrument is thus defined as a tool designed to measure knowledge, attitude and skills.

Data was collected through use of questionnaires. Saunders *et al* (2007) indicate that most studies use questionnaires. Newing (2011) and Bryman (2008) explain that questionnaires consist of a series of specific, usually short questions that are either asked verbally by an interviewer or answered by the respondents on their own. Thorndike & Hagen (1977), Kothari (2004) defines a questionnaire as a document that consists of a number of questions printed or typed in a definite order on a form or set of forms.

According to Dawson (2002), there are three basic types of questionnaires; close ended, open-ended or a combination of both. Close-ended questionnaires are used to generate statistics in quantitative research while open-ended questionnaires are used in qualitative research, although some researchers quantified the answers during the analysis stage. Obtaining data from participants with different methods and experience helped prevent information bias and thus increasing credibility regarding the information collection. In close ended questionnaires, the response categories are exhaustive and include possible responses expected from respondents that include opinions and policy issues. For purposes of this study closed-ended questionnaires using 5 point Likert scale was used through distribution on a drop and pick method.

According to Kothari (2004), a Likert scale is a scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in

survey researcher. Likert scales are good because they show the strength of the persons feelings to whatever is in the questions, they are easy to analyze, they are easy to collect data, they are more expansive and they are quick (Kothari, 2004). The key areas of the questionnaire were quality of disclosure, identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. Primary data including questionnaires was used to ask the respondents questions relating to each independent variable of the study.

3.7 Data Collection Procedure

Burns and Grove (2003) define data collection as the precise, systematic gathering of information relevant to the research sub-problems, using methods such as interviews, participant observations, focus group discussion, narratives and case histories. Primary data described by Louis, Lawrence & Morrison (2007) as those items that are original to the problem under study while secondary is defined as data collected using information from studies that other researchers have made of a subject. For purposes of this study, primary data was collected through use of questionnaires. The questionnaires were sent to the respondents under a questionnaire-forwarding letter accompanied by an introductory from the university. The researcher made a follow up and the fully completed questionnaires were picked from the respondents later.

3.8 Pilot Test

A pilot study was carried out to test the reliability and validity of the instrument. Reliability is a measure of the degree to which a research instrument yields consistent results (Borg, Gall & Gall, 2003). Kothari (2004) describes a pilot survey as a replica and a rehearsal of the main survey. According to Beck (2003), a pilot study is a small scale version, or trial run, done in preparation for a major study. According to Saunders, Thornhill and Lewis (2007), pilot testing refines the questionnaire so that respondents

will have no problems in answering the question. The questionnaire was pre tested to ensure clarity and content validity prior to it being administered. Literature emphasizes on the importance of pilot tests. Bryman (2008) state that, it is always desirable to conduct a pilot study before administering a questionnaire to your sample while Marczyk, DeMatteo and Festinger (2005) observe that pilot test is the starting phase in data collection of the research process.

For high precision pilot studies, 1% to 10% of the sample should constitute the pilot test size (Lancaster, Dodd, Williamson, 2010). For purposes of this study, the pilot test was conducted using 10% of the sample size. The questionnaires were administered to 40 respondents from the shipping companies which were not part of the sampled ones. The respondents were selected using random sampling across all departments and all levels of staff. The subjects participating in the pilot study were not included in the final study to avoid survey fatigue.

3.8.1 Instrument Reliability

Reliability is the consistency of a set of measurement items while validity indicates that the instrument is testing what it should (Cronbach, 1951). Reliability is the consistency of your measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the repeatability of your measurement. A measure is considered reliable if a person's score on the same test given twice is similar. It is important to remember that reliability is not measured, but estimated.

Reliability does not however imply validity because while a scale may be measuring something consistently, it may not necessarily be what it is supposed to be measuring. The researcher used the most common internal consistency measure known as Cronbach's Alpha (α). It indicates the extent to which a set of test items can be treated as

measuring a single latent variable (Cronbach, 1951). Nunnally (1978) offered a rule of thumb of 0.7 which has been adopted as the threshold to test the reliability of data. This research used Cronbach alpha to test the reliability of all the variables.

3.8.2 Instrument Validity

According to Mugenda and Mugenda (1999), validity is the accuracy and meaningfulness of inferences, which are based on the research results. In other words validity is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. Validity exists if the data measure what they are supposed to measure. In other words the reason all people don't have the same test score is that they differ in terms of the attribute the test measures (Baumgartner et al, 2002). For this study, questionnaires were pre-tested to ensure they are not faulty and that the participants understood them. Validity refers to whether the questionnaire is measuring what it purports to measure (Bryman & Cramer, 2006; Bryman, 2008). Mcmillan & Schumacher (2010) describe validity as the degree of congruence between explanations of phenomena and the realities of the world. While absolute validity is difficult to establish, demonstrating the validity of a developing measure is very important in research (Bryman, 2008). This study used both construct validity and content validity. For construct validity, the questionnaire was divided into several sections to ensure that each section assessed information for a specific objective, and also ensured that the same closely ties to the conceptual framework for this study. Saunders *et al* (2007) explain construct validity as the extent to which the measurement questions actually measure the presence of those constructs one intended to measure.

Content validity is the extent to which the measurement device provides adequate coverage of investigative questions. To ensure content validity, the questionnaire was subjected to thorough examination by two randomly selected managers and two

accountants. They were asked to evaluate the statements in the questionnaire for relevance and whether they were meaningful, clear and loaded of offensive. On the basis of the evaluation, the instrument was adjusted appropriately before subjecting it to the final data collection exercise. Their review comments were used to ensure that content validity is enhanced.

3.8.3 Factor Analysis

Factor analysis was done in two stages: during pilot study and after the main data was collected. In factor analysis, item communalities are considered "high" if they are all 0.8 or greater. However, according to Velicer and Fava (1998) such values are difficult to obtain in relation to real data. In social science studies, moderate communalities values of 0.5640 and 0.70 are common and acceptable. In the pilot study all the items registered a threshold of above 0.4 thus none of the item was dropped. A communality value of less than 0.40 may suggest that the item does not relate to the other items in the same factor. Communalities for both quality of disclosure and all the independent variables were within the range of 0.40 to 0.90, which indicates that all of the items in each factor are related. After the main data collection and before descriptive, correlation and regression analysis, factor and reliability analysis was undertaken again. All the variables retained their items as 13, 9, 7, 8 and 8 respectively.

3.9 Data Analysis and Presentation

Data Analysis is the processing of data to make meaningful information (Saunders, Lewis & Thornhill, 2009). Burns and Grove (2003) define data analysis as a mechanism for reducing and organizing data to produce findings that require interpretation by the researcher. According to Hyndman (2008) data processing involves translating the answers on a questionnaire into a form that can be manipulated to produce statistics. This involves coding, editing, data entry, and monitoring the whole data processing

procedure. After data was collected through questionnaires and interviews, it was prepared in readiness for analysis by editing, handling blank responses, coding, categorizing and keyed in and using Statistical Package for Social Sciences (SPSS) version 20.0 computer software for analysis.

Descriptive and inferential statistics was used to analyze and interpret the data used in this research. Specifically, descriptive statistics related to means and frequencies. Inferential statistics included regression and correlation analysis. According to Gupta & Gupta (2009) correlation is a statistical tool with the help of which relationships between two or more variables is determined. Correlation analysis helps in determining the degree of relationship between two or more variables. A correlation coefficient (r) has two characteristics, direction and strength. Direction of relationship is indicated by how *r* is to 1, the maximum value possible. r is interpreted as follows;

When r = +1 it means there is perfect positive correlation between the variables

r = -1 it means there is perfect negative correlation between the variables r = 0 it means there is no correlation between the variables, that is the variables are uncorrelated.

Regression is the statistical tool with the help of which we are in a position to estimate (or predict) the unknown values of one variable from known values of another variable (Gupta & Gupta, 2009). The definition is in tandem with that of Kothari,(2004) who defines regression as the determination of a statistical relationship between two or more variables where one variable (defined as independent variable) is the cause of behavior of another one (defined as dependent variable). To test and analyze the quantitative data, a multiple regression model was used as laid below where the independent variables were regressed against the dependent variable to obtain inferential results. The use of multiple regression model is preferred due to its ability to show whether there is a positive or a negative relationship between independent and dependent variables. In

addition, multiple regression is useful in showing linear elasticity/sensitivity between independent and dependent variables (Cohen, West & Aiken, (2003). For instance, the current study wanted to find out whether the effect of quality of disclosure will change when responses in identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability.

Furthermore, multiple regression was useful in showing whether the identified linear relationship was significant or not. A regression coefficient with a p value of less than 0.05 indicated that the variables (identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability) significantly influence the quality of disclosure. Therefore, the study used the following model to test whether quality of disclosure is a function of the independent variables.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y – dependent variable –odds of Quality of disclosure

X_1 – identification of environmental cost (IEC)

X_2 – capitalization of environmental cost (CEC)

X_3 – identification of environmental liability (IEL)

X_4 – measurement of environmental liabilities (MEL)

ε – is the error term which is assumed to be normally distributed with mean zero and constant variance

β – Parameters to be estimated

β_1 – Coefficient of independent variable X_1

β_2 – Coefficient of independent variable X_2

β_3 – Coefficient of independent variable X_3

β_4 – Coefficient of independent variable X_4

β_0 is a constant (intercept)

Using SPSS, the regression model was tested on how well it fits the data. The significance of each independent variable was also tested; t-test called was applied. F-test was used to test the significance of the overall model at a 95 percent confidence level. The p-value for the F-statistic was applied in determining the robustness of the model. The conclusion was based on the basis of p value where if the null hypothesis of the beta was rejected then the overall model was significant and if null hypothesis was accepted the overall model was insignificant. In other words if the p-value was less than 0.05 then it was concluded that the model was significant and has good predictors of the dependent variable and that the results are not based on chance. If the p-value was greater than 0.05 then the model was not significant and cannot be used to explain the variations in the dependent variable.

Table 3.2 Measurements of Variables and Analysis of Objectives.

S/N	Variable name	Objectives	Data Requirements	Source	Analytical tools to be used
1	Dependent	To determine the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria	Content analysis, Disclosure index, Disclosure frequency	Primary data via administration of questionnaire.	Descriptive statistics, multiple regression, correlation,t-test, ANOVA
2	Independent	To establish the effect of identification of environmental cost on quality of accounting disclosure of shipping lines in Nigeria	Effective management accounting, Cost analysis and allocation of Environment, Product quality and quality performance	Primary data via administration of questionnaire	Multiple regression, correlation and t –test
3	Independent	To determine the effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria	Cost of equity capital, quality of investor's information, environmental remediation costs.	Primary data via administration of questionnaire	Multiple regression, correlation and t –test
4	Independent	To establish the effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria	Level of environmental liability, contingent environmental liabilities, recognition of environmental liabilities.	Primary data via administration of questionnaire	Multiple regression, correlation and t –test
5	Independent	To investigate the effect of measurement of environmental liability on quality of accounting disclosure of shipping lines in Nigeria	External legislation, application of contemporary management accounting techniques, environmental commitment.	Primary data via administration of questionnaire	Multiple regression, correlation and t –test

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter contains the presentation and discussion of the findings of this study. The main objective of the study was to establish the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The specific objectives were the following, to establish the effect of identification of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria, to determine the effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria, to establish the effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria and to investigate the effect of measurement of environmental liability on quality of accounting disclosure of shipping lines in Nigeria. The study was guided by a conceptual framework which comprised of four independent variables and one dependent variable. The independent variables were identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. The dependent variable was quality of disclosure.

4.2 Response Rate

The response rate for the study is important because it reflects the suitability of the study procedure. This is based on the assertion of Bailey, (2000) that a response rate of 50% is adequate, 60% is considered good, and response greater than 70% is considered very good. The study achieved a response rate of 81% and non response rate of 19% from a sample of 505 questionnaires administered to the staff of the shipping companies in Nigeria out of which 410 were completed and returned. The high response can be

attributed to the elaborate data collection procedures. The questionnaires were administered and collected from the respondents on a face to face interaction. This is an acceptable response rate according to Mugenda and Mugenda (2003), a response rate of 50% is adequate, and 60% is good while 70% and above is rated as being very good. Table 4.1 shows the distribution and response rate of questionnaires from the respondents. It was also consistent with the expected return rate of about 75% for face to face administered questionnaires (Saunders *et al*., 2007).

Table 4. 1: Response Rate

Response	**Total**	**Percent**
Returned	410	81%
Unreturned	95	19%
Total	**505**	**100%**

4.2.1 Factor Analysis

Factor analysis for the independent variables and dependent variables was conducted. The main purpose of conducting factor analysis was to summarize the information contained in a number of original variables into a smaller number of factors without losing much information. This implies that the newly created variables should represent the fundamental constructs which underlie the original variables (Gorsuch, 1990). Factor analysis looks at the internal-correlations among data to come up with internally consistent surrogates of the variable (Mugenda, 2010). These correlations helped the researcher to formulate an interpretation of the components (variables). Cooper and Schindler (2008) have indicated 0.7 to be an acceptable loading. Other researchers suggest that 0.4 is the minimum level for item loading. Costello and Osborne (2005) argues that if an item has loading of less than 0.4 it may either not be related to the other

items or suggests an additional factor that should be explored. Hair *et. al.,* (2010) highlighted that Factor Analysis was necessary in research to test for construct validity and highlight variability among observed variables and to also check for any correlated variables in order to reduce redundancy in data. Mwiti (2013) suggested that variables with factor loadings greater than 0.3 were the ones that had the highest significance and influence.

The overall summary of the factor analysis for all the variables were stated in Table 4.2. The results for the factors measuring the dependent variable Quality of Accounting Disclosure shows that all the factor loadings for the five items were above 55%. All the items were accepted based on the general rule of thumb for acceptable factor loading of 0.40% above. No item was removed or expunged. The results of the factor analysis for Identification of Environmental Cost (IEC) with thirteen items divulge that all the factor loadings for all the items were above 40%. This implies that all items fall within the acceptable threshold based on the general rule of thumb as none of the item was dropped. The factor analysis for Capitalization of Environmental Cost (CEC) shows factor loadings above 48%. Since all the loadings were above 48%, no factor was dropped because they followed the acceptable threshold. For Identification of Environmental Liability (IEL), the factor loadings were above 49%. This indicates that no item was dropped as they fall within the acceptable threshold.

The result of the eight factors measuring the independent variable Measurement of Environmental Liability (MEL) was subjected to factor analysis. All the factor loadings were above 41% which implies that all items fall within the acceptable threshold as no item was dropped. From table 4.2, it indicates that all the factor loading of all the items were above 40% and thus all were considered for further statistical analysis.

Table 4.2: Factor Analysis for all Variables

Constructs	Number of Items	Overall Factor Loading	Comment
IEC	13	42% and above	Accepted
CEC	9	48% and above	Accepted
IEL	7	49% and above	Accepted
MEL	8	41% and above	Accepted
QD	8	55% and above	Accepted

Detailed analysis of the factor analysis on the individual items of the construct can be seen in Appendix III-VII.

4.2.2 Reliability Tests

When the assumptions of the linear regression model are correct, ordinary least square (OLS) provides efficient and unbiased estimates of the parameters (Long and Ervin, 2000). As Pedhazur (1997) notes, "Knowledge and understanding of the situations when violations of assumptions lead to serious biases, and when they are of little consequence, are essential to meaningful data analysis". To keep up with the assumptions, this study conducted the following diagnostic tests: factor analysis, reliability test, normality test, homoscedasticity test and multicollinearity test on the variables. However, as Osborne, Christensen, and Gunter (2001) observe, few articles report having tested assumptions of the statistical tests they rely on for drawing their conclusions.

Reliability is an indication of the stability and consistency with which the instrument measures a concept and helps to assess the goodness of a measure. Reliability was measured using Cronbach's Alpha coefficient which was used to measure the internal consistency of the study measures. It is used to indicate how well the items in the set are correlated with each other. According to Sekaran (2008) the closer a Cronbach's Alpha is to 1 the higher the reliability and a value of at least 0.7 is recommended. According to

Sekaran, (2006) a reliability coefficient of 0.7 is acceptable, while Velicer and Fava (1998) recommend magnitudes of between 0.40 and 0.70. Gliem and Gliem (2003) also indicate that reliability refers to the consistency of measurement and that the closer is the coefficient to 1, the greater the consistency of the items in a scale. The study consists of four independent variables and one dependent variable. The independent variables consist of identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. The dependent variable was quality of accounting disclosure.

Table 4.3: Reliability Test

Constructs	Number of Items	Overall Cronbach's Alpha	Comment
IEC	13	0.889	Accepted
CEC	9	0.880	Accepted
IEL	7	0.752	Accepted
MEL	8	0.847	Accepted
QD	8	0.861	Accepted

The findings in table 4.3 indicate that Identification of Environmental Cost (IEC) had a coefficient of 0.889, Capitalization of Environmental Cost (CEC) had a coefficient of 0.880, Identification of Environmental Liability (IEL) had a coefficient of 0.752, Measurement of Environmental Liability had a coefficient of 0.847 and Quality of Accounting Disclosure (QD) with a coefficient of 0.861. All the constructs had Cronbach's Alpha above the minimum acceptable reliability coefficient of 0.7 and good internal consistency. In conclusion, all the constructs had Cronbach's Alpha above the minimum acceptable reliability coefficient of 0.7 and thus considered all the variables reliable and accepted for investigating purpose. See Appendix III-VII for the breakdown of Cronbach's Alpha for individual item under each variable.

4.3 Background Information

This section covers the demographic characteristics of the target population. This is aimed at ensuring that there is no biasness in the manner in which the respondents are selected to participate in the study. The data included gender of the respondents, the level of education of the respondents, the level of experience of the respondents and the position held by the respondents.

4.3.1 Gender of Respondents

Both gender participated in the study. Out of 410 respondents who participated in the study, 298 were male representing 72.68% while 112 were female representing 27.32%. Kothari (2004) asserts that a ratio of at least 1:2 in either gender representation in the study is representative enough. This difference could be attributed to the fact that shipping companies employ more males than females. The results of this information are presented in Figure 4.1.

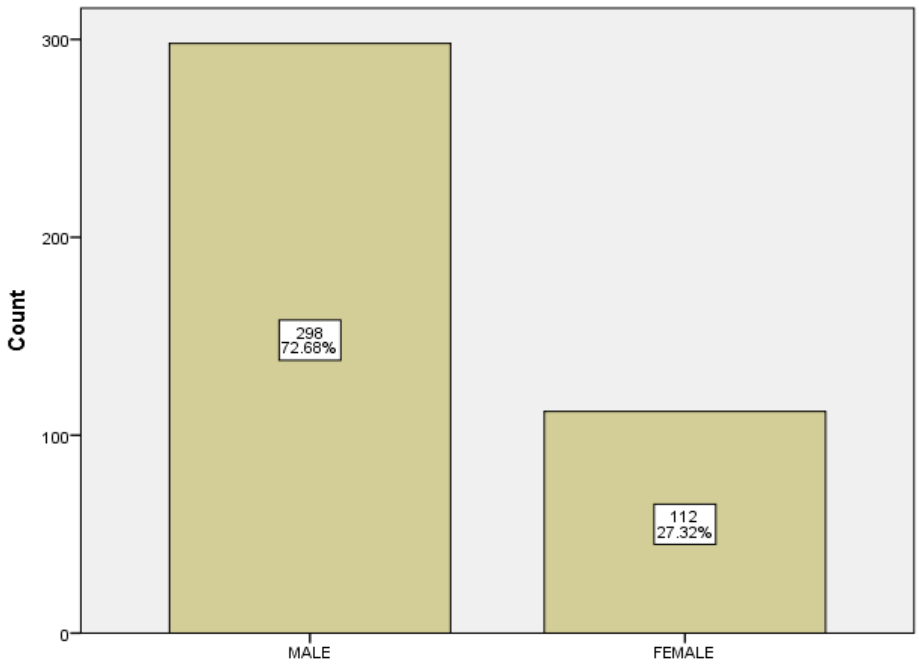

Figure 4.1 Gender of the respondents

4.3.2 Level of Education

The level of general education of the respondents is important because education facilitates the acquisition of more current technical skills which allow them to have more innovative ideas or be able to better adapt to new environments (Ouimet & Zarutskie,

2014). The research established that 46.3% of the respondents had university level of education, 24.4% post graduate level of education, 19.5% college level of education and 9.8% with secondary level of education (see Table 4.4).

Table 4.4: Level of Education

Level of Education	Frequency	Percent
Secondary Level	40	9.8
College Level	80	19.5
University Level	190	46.3
Post Graduate Level	100	24.4
Total	**410**	**100.0**

4.3.3 Work Experience of Respondents

The research findings indicated that 51.46% of the respondents had an experience ranging over five years, followed by 29.02 % with an experience ranging between 3-5 years and 19.51% with less than two years experience. This is as indicated on Figure 4.2. The findings indicate that more of the respondents had higher experiences. This is as per other studies that verify the importance of experience, as a major source of self-efficacy (Boyd & Vozikis, 1994).

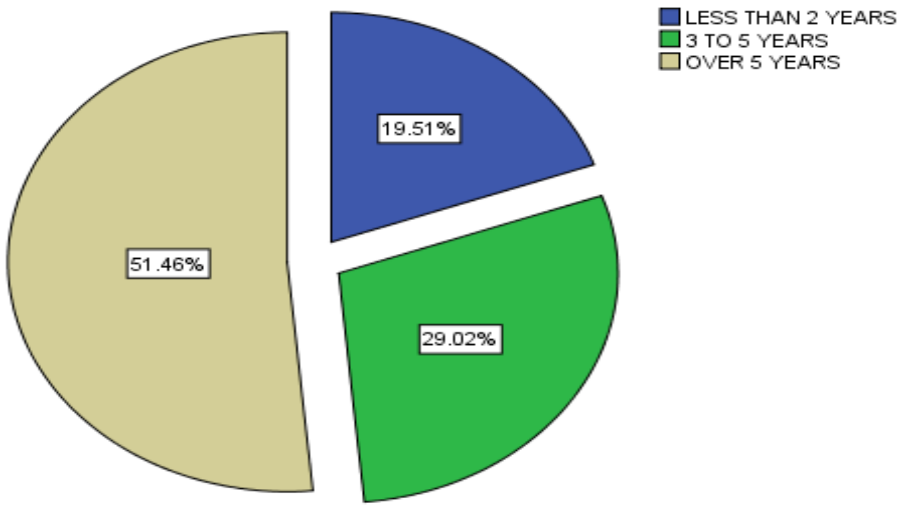

Figure 4.2 Work experience of the respondents

4.3.4 Position Held in the Company

The research findings indicated that 51.71% of the respondents held the position of auditors, 28.78% held the position of chief accountant and 19.51% held the position of managers. Therefore, this study reveals that majority of the respondents held positions of auditors in the company. This means that auditors play an important role in ensuring that companies comply and adopt with environmental accounting disclosures standards in their financial statements. This is shown in figure 4.3.

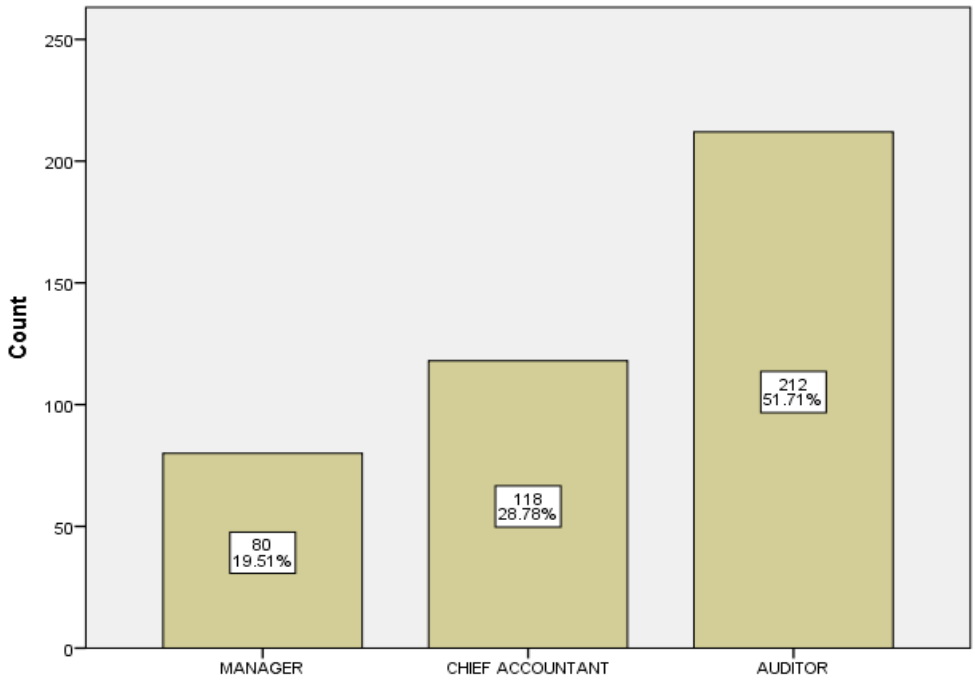

Figure 4.3 Position held by the respondents

4.4 Descriptive Analysis

This section contains descriptive statistics for all the variables used in this study. The study's independent variables included identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. The influence of each variable on the quality of disclosure of the shipping companies was investigated.

4.4.1 Objective 1: Effect of identification of environmental cost on quality of accounting disclosure of shipping lines in Nigeria

An independent variable is antecedent to the dependent variable Kothari (2005). An independent variable causes change in dependent variable. The first objective of the

study was to establish the effect of identification of environmental cost on quality of accounting disclosure of shipping lines in Nigeria. The objective was tested through eight composite (8) composite measures which were laid on scaled questionnaire.

The respondents were required to state their position on whether the company has identified operation cost. A total of 67.5% respondents agreed with the statement, 24.9% remained neutral and 7.6% disagreed. This implies that majority agreed that the company has identified operation cost. The responses had a mean of 4. Most responses were 4, confirming that the company has identified operation cost. This finding concur with Neungruthai and Mula (2012) in their study on environmental and social cost identification and measurement system find out that companies are intending to change to new management accounting practices while looking for ways to improve cost identification and measurement of environment and social impacts.

My company examines the relation between social disclosures in annual reports and the cost of equity capital. A total of 72.2% respondents agreed with the statement, 23.7% were undecided and 4.1% disagreed. Majority of the respondents indicated that the company examines the relation between social disclosures in annual reports and the cost of equity capital. Most responses were 4, confirming that the company examines the relation between social disclosures in annual reports and the cost of equity capital. The finding is in line with Richardson and Welker (2001) who suggested that improved social disclosures increase cost of equity capital, which will reduce firm value.

The respondents were requested to indicate whether identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risks. A significant majority 67.5% agreed with the statement, 25.6% remained neutral and 6.8% disagreed. Most of the respondents opined that environmental operating expenditures are tracked independently of other operating

expenditure. Most responses were 4, confirming that environmental operating expenditures are tracked independently of other operating expenditure. This study supports Todd (1995) who found that identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risks.

The company set aside research and development cost. A total of 72.7% agreed, 22.7% remained neutral and 4.7% disagreed. This implies that a very large majority agreed that the company set aside research and development cost. Most responses were 4, confirming that the company set aside research and development cost. Cohen (2008) find out that that firm choosing to provide financial information of higher quality enjoys a lower cost of equity capital.

Asked if the company has a team for environment administration and planning. A significant majority 74.4% agreed with the statement, 20.2% remained neutral and 7.6% disagreed. Majority of the respondents agreed that the company has a team for environment administration and planning. Most responses were 4, confirming that the company has a team for environment administration and planning. This study is in line with Neungruthai and Mula (2012) who find out that company are intending to change to new management accounting practices while looking for ways to improve cost identification and measurement of environment and social impacts.

The respondents were asked if effective management accounting improves the identification of cost. A total of 67.5% agreed, 24.1% remained neutral and 7.6% disagreed. Majority of the respondents indicated that effective management accounting improves the identification of cost. Most responses were 4, confirming that effective management accounting improves the identification of cost. The finding concur with Ranganathan and Ditz (1996) who argued that the provision of environmental cost information, which is made available through environmental management accounting,

can also play a crucial role in influencing the relation between product quality and competitive advantage.

To measure if the company has set aside recovery expense the findings were as follows: 69.5% agreed, 24.1% remained neutral and 6.3% disagreed. The findings further show that majority of the respondents agreed that the company has set aside recovery expense. Most responses were 4, confirming that the company has set aside recovery expense. Identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risks (Todd 1995, USEPA 1995a, b).

The company has set aside expenses for remediation measures. A significant majority 67.5% agreed with the statement, 24.9% remained neutral and 7.6% disagreed. Majority of the respondents agreed that company has set aside expenses for remediation measures. Most responses were 4, confirming that the company has set aside expenses for remediation measures. The study indicated that majority of the respondents agreed that the company identifies environmental cost. The study is in line with McElroy (2007) who found that increased value is determined by comparing the value "of the asset after the expenditure with the status of the asset before the condition arose that necessitated the expenditure. The responses are presented in the table 4.5.

Table 4.5 Responses on Identification of Environmental Cost

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean	S.D
My company has identified operation cost.	3.2	4.4	24.9	48.5	19.0	4	1
My company examines the relation between social disclosures in annual reports and the cost of equity capital	1.7	2.4	23.7	54.6	17.6	4	1
Identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risks	2.9	3.9	25.6	50.7	16.8	4	1
My company has set aside research and development cost.	2.0	2.7	22.7	57.1	15.6	4	1
My company has a team for environment administration and planning.	1.5	3.9	20.2	52.9	21.5	4	1
Effective management accounting improves the identification of cost.	3.2	4.4	24.9	48.5	19.0	4	1
My company has set aside recovery expense.	2.2	4.1	24.1	50.5	19.0	4	1
My company has set aside expenses for remediation measures.	3.2	4.4	24.9	48.5%	19.0	4	1
Average	**2.5**	**3.8**	**23.9**	**51.4**	**18.4**		

The respondents were asked to indicate the extent to which the company generates environmental cost information. A significant majority 72.2% indicated high, 23.7% were neither high nor low and 4.1% indicated low. This implies that majority of the respondent indicated high extent to which the company generates environmental cost information. The finding supports Fekrat et al. (1996) who identify recognition and disclosure of environmental costs as a priority management accounting information and cost recognition issue. The result obtained is shown in the table 4.6.

Table 4.6 Environmental cost information generated by the company.

Response	Frequency	Percent
Very Low	7	1.7
Low	10	2.4
Neither High nor Low	97	23.7
High	224	54.6
Very High	72	17.6
Total	**410**	**100.0**

The respondents were asked to indicate whether in their own opinion any of the following statements which can best describe how this information can be generated. A total of 54.1% opined that information can be generated by a free standing system, which does not directly access data in other systems, 23.9% indicated that information is generated by a free standing system, using data electronically transferred from the general or management system, 14.9% believed that information is generated by some other type of system, 3.9% revealed that information is generated as part of the management accounting system separate from the general ledger system and 2.9% showed that information is generated as part of the general ledger system. The finding concurs with Fekrat et al. (1996) who identify recognition and disclosure of environmental costs as a priority management accounting information and cost recognition issue. The result obtained is shown in the table 4.7.

Table 4.7 Statements describing how the company generates environmental cost information.

Response	Frequency	Percent
Generated as part of your general ledger system.	12	2.9
Generated as part of your management accounting system, separate from your general ledger system.	16	3.9
Generated by a free standing system, using data electronically transferred from your general or mgt system	98	23.9
Generated by a free standing system, which does not directly access data in other systems	222	54.1
Generated by some other type of system.	61	14.9
Total	**410**	**100.0**

Respondents were asked in their own opinion to indicate the recipients of the information in table 4.8. The study indicated that 51.2% of the respondents opined that accounts department is the recipient of the information, 23.4% management accounts and accounts department, 20.2% environmental department, 3.4% management accounting system department and 1.7% corporate department. This reveals that majority of the respondents opined that accounts department is the recipients of the information. The finding is in line with Fekrat et al. (1996) who identify recognition and disclosure of environmental costs as a priority management accounting information and cost recognition issue. The result obtained is shown in the table 4.8.

Table 4.8 Recipients of the information

Response	Frequency	Percent
Corporate Dept. only	7	1.7
Management Accounting system Dept	14	3.4
Mgt. accounts & Accounts Dept	96	23.4
Accounts Dept. only	210	51.2
Environmental Dept. only	83	20.2
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate what internal barriers affect the ability of the company to collect environmental cost information. A total of 36.6% opined inadequate manpower resources, 24.9% indicated environmental accounting is yet to be enforced, 15.6% agreed training in environmental accounting is yet to take place, and 11.5% revealed that absence of classification of costs on environmental bases and others affect the ability of the company to collect environmental cost information. Failure to pay attention to environmental issues may expose a firm to sanctions and penalties (Cormier & Magnan 1997; Burritt et al. 2002).The result obtained is shown in the table 4.9.

Table 4.9 Internal barriers affect the ability of the company to collect environmental cost information

Response	Frequency	Percent
Absence of classification of costs on environmental bases	47	11.5
Training in Environmental Accounting is yet to take place	64	15.6
Environmental Accounting is yet to be enforced	102	24.9
Inadequate manpower resources	150	36.6
Others	47	11.5
Total	**410**	**100.0**

The respondents were asked to indicate the level to which the company makes estimates of the less tangible environmental costs or benefits such as liabilities from past operations, the indirect cost of regulation, the benefit of environmental pro-activity, etc. A significant majority 72.2% indicated high, 23.7% were neither high nor low and 4.1% opined low to the level at which the company makes estimates of the less tangible environmental costs or benefits such as liabilities from past operations, the indirect cost of regulation, the benefit of environmental pro-activity, etc. As the benefits of environmentally conscious design and manufacturing include reduced disposal costs, lower environmental and health risks, waste minimization and higher productivity (Zhang et al. 1997). The result obtained is shown in the table 4.10.

Table 4.10 Estimation of less tangible environmental costs or benefits of the company

Response	Frequency	Percent
Very Low	7	1.7
Low	10	2.4
Neither High nor Low	97	23.7
High	224	54.6
Very High	72	17.6
Total	**410**	**100.0**

Table 4.11 provides a summary table based on a cross tabulation between the respondents position with the company and identification of environmental cost in obtaining sufficient and quality report of the company. The data indicated that majority of the respondents 199 representing 48.5% comprising of managers (41 out of 80 respondents), chief accountants (64 out of 118 respondents) and auditors (94 out of 212 respondents) representing 51.2%, 54.2% and 44.3% respectively agree that effective management accounting improves the identification of cost in the company. Fewer respondents with 13 representing 3.2% comprising of 2.5% and 4.7% for chief accountant and auditors respectively strongly disagree with the statement. The cross tabulation analysis in table 4.11 implies that larger percentage of respondents agree that effective management accounting improves the identification of cost in the company which influences quality of disclosure. From the indication of cross tabulation analysis in table 4.11, it shows that the proportion of chief accountants agreeing with identification of environmental cost on the quality of disclosure of shipping lines is more than that of the managers and auditors.

Table 4.11: Summary Table for Cross Tabulation of Effective Management Accounting improves the identification of cost in the company. *Respondents position in the company.

			Respondents position			
			Manager	**Chief Accountant**	**Auditor**	**Total**
Effective management accounting improves the identification of cost on quality of disclosure in the company.	Strongly Disagree	Frequency	0	3	10	13
		% within respondents position in the company	0.0%	2.5%	4.7%	3.2%
	Disagree	Frequency	0	3	15	18
		% within respondents position in the company	0.0%	2.5%	7.1%	4.4%
	Neutral	Frequency	23	33	46	102
		% within respondents position in the company	28.8%	28.0%	21.7%	24.9%
	Agree	Frequency	41	64	94	199
		% within respondents position in the company	51.2%	54.2%	44.3%	48.5%
	Strongly Agree	Frequency	16	15	47	78
		% within respondents position in the company	20.0%	12.7%	22.2%	19.0%
Total		**Frequency**	**80**	**118**	**212**	**410**
		% within respondents position in the company	**100.0%**	**100.0%**	**100.0%**	**100.0%**

4.4.2 Objective 2: Effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria

The study sought to determine the effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria. In response to whether the company pays taxes of the environmental contamination. A significant majority 74.7% agreed with the statement, 18.8% remained neutral and 6.6 % disagreed. This implies that majority of the respondents agreed that the company pay taxes of the environmental contamination. The responses had a mean of 4. Most responses were 4, confirming that the company pay taxes of the environmental contamination. The finding is in line with McElroy who noted that under IRC (Internal Revenue Code) Section 162, which states that corporations may deduct "ordinary and necessary expenses (that are) paid or incurred during the taxable year in carrying on a trade or business.

The respondents were asked in their opinion whether the company incurs cost of draining the waste from the old tanks. A total of 75.9% agreed with the statement, 19% were neutral and 5.1% disagreed. This indicates that majority of the respondents agreed that the company incurs cost of draining the waste from the old tanks. Most responses were 4, confirming that the company incurs cost of draining the waste from the old tanks. The finding is in line with Judge and Douglas (1998) who reported that firms can often reduce waste and hence cost through the use of environmentally preferable material substitutes.

Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. Majority of the respondents 73.6% agreed with the statement, 21.2% remained neutral and 5.2% disagreed. This reveals that majority of the respondents agreed that investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. Most responses were 4, confirming

that investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. The study concurs with Mohamed and Faouzi (2014) who suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity.

The respondents were asked to indicate their opinion whether the company incurs cost to transfer the waste to new composite material tanks. A significant majority 72.4% agreed with the statement, 22.4% remained neutral and 5.1% disagreed. This indicates that majority of the respondents agreed that the company incurs cost to transfer the waste to new composite material tanks. Most responses were 4, confirming that the company incurs cost to transfer the waste to new composite material tanks. Environmentally conscious design and manufacturing aims to reduce disposal costs and environmental risks, improve product quality at lower cost, minimize waste, and increase productivity (Mannion 1996; Rugman & Verbeke 1998; Zhang *et al.* 1997).

An expenditure that repairs a defect that exists prior to acquisition is capitalized. A total of 73.6% agreed with the statement, 20.2% were neutral and 6.1% disagreed. This implies that majority of the respondents agreed that expenditure that repairs a defect that exists prior to acquisition is capitalized. Most responses were 4, confirming that expenditure that repairs a defect that exists prior to acquisition is capitalized. Failure to pay attention to environmental issues may expose a firm to sanctions and penalties, as well as to a reduction in its market capitalization (Cormier and Magnan 1997; Burritt *et al.* 2002).

Asked to indicate in their opinion whether the company allows capitalization of deductions of any contamination of property. Majority of the respondents 74.7% agreed with the statement, 18.8% remained neutral and 6.6% disagreed. This indicates that most of the respondents agreed that the company allows capitalization of deductions of any

contamination of property. Most responses were 4, confirming that the company allows capitalization of deductions of any contamination of property. If value increases in this context, then the remediation costs must be capitalized. The finding supports McElroy (2007) who find out that increased value is determined by comparing the value "of the asset after the expenditure with the status of the asset before the condition arose that necessitated the expenditure". If value increases in this context, then the remediation costs must be capitalized.

My company incurs costs to remove the old steel underground storage tanks. A significant majority 73.2% agreed with the statement, 20.5% were neutral and 6.3% disagreed. This reveals that most of the respondents agreed that the company incurs costs to remove the old steel underground storage tanks. Most responses were 4, confirming that the company incurs costs to remove the old steel underground storage tanks. The finding is consistent with the findings of USEPA (1995b) which noted that many environmental costs may be reduced or eliminated by operational changes, investment in greener technology, and product redesign. The responses are presented in the table 4.12.

Table 4.12 Responses on Capitalization of Environmental Cost

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean	S.D
My company pays taxes of the environmental contamination	2.9	3.7	18.7	53.2	21.5	4	1
My company incurs cost of draining the waste from the old tanks	2.2	2.9	19.0	53.9	22.0	4	1
Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity	2.0	3.2	21.2	53.4	20.2	4	1
My company incurs cost to transfer the waste to new composite material tanks	1.7	3.4	22.5	52.2	20.2	4	1
An expenditure that repairs a defect that exists prior to acquisition is capitalized	2.0	4.1	20.3	52.4	21.2	4	1
My company allows capitalization of deductions of any contamination of property	2.9	3.7	18.8	53.1	21.5	4	1
My company incurs costs to remove the old steel underground storage tanks	2.2	4.1	20.5	51.7	21.5	4	1
Average	**2**	**4**	**20**	**53**	**21**	**100**	

The respondents were asked to indicate the extent to which the company set aside expenses for remediation measures. A significant majority 71.2% indicated high, 20.5% were neither high nor low and 7.3% indicated low. This implies that majority of the respondent indicated high extent to which the company set aside expenses for remediation measures. McElroy (2007) noted that the IRS addressed the deduction of remediation costs in Revenue Ruling 94-38, 1994-1 C.B. 35, in which a deduction was allowed when the costs are not incurred for permanent improvements to the land and will not produce significant future benefits. The result obtained is shown in the table 4.13.

Table 4.13 Expenses for remediation measures set aside by the company

Response	Frequency	Percent
Very Low	12	2.9
Low	18	4.4
Neither High nor Low	84	20.5
High	209	51.0
Very High	87	21.2
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company clearly identifies wastes where appropriate. The study revealed that 69.5% of the respondents indicated yes, 27.6% no and 2.9% sometimes. This indicates that majority of the respondents opined that the company clearly identifies wastes where appropriate. The finding is in line with Judge and Douglas (1998) who reported that firms can often reduce waste and hence cost through the use of environmentally preferable material substitutes. The result obtained is shown in the table 4.14.

Table 4.14 Identification of waste by the company

Response	Frequency	Percent
No	113	27.6
Sometimes	12	2.9
Yes	285	69.5
Total	**410**	**100.0**

Another indicator of capitalization of environmental cost is the quality of investors' information. Respondents were asked in their own opinion to indicate the extent to which quality of investors' information influences the cost of equity capital. A significant majority 72.5% indicated high, 20.7% were neither high nor low and 6.8% indicated low. This implies that majority of the respondent indicated high extent to which quality of investors' information influences the cost of equity capital. Botosan *et al*. (2004) find that an inverse relation exists between the quality of public disclosure and cost of equity capital. The result obtained is shown in the table 4.15.

Table 4.15 Cost of equity capital influences quality of investors' information

Response	**Frequency**	**Percent**
Very Low	11	2.7
Low	17	4.1
Neither High nor Low	85	20.7
High	209	51.0
Very High	88	21.5
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether content analysis describes the practices of environmental disclosure in the company. The study revealed that 74.1% of the respondents indicated yes, 25.9% no. This indicates that majority of the respondents opined that content analysis describes the practices of environmental disclosure in the company. Shen and Huang (2010) in their study an analysis of environmental disclosure of listed companies in China based on the content analysis of annual reports of listed companies find out that a lot of environmental information has

been disclosed, either voluntarily or mandatorily, and has covered most of the content themes suggested by Environmental Disclosure Guideline (EDG). The result obtained is shown in the table 4.16.

Table 4.16 Content analysis describes the practices of environmental disclosure in the company

Response	Frequency	Percent
No	106	25.9
Yes	304	74.1
Total	**410**	**100.0**

Table 4.17 provides a summary table based on a cross tabulation between the respondents position with the company and capitalization of environmental cost in obtaining sufficient and quality report of the company. The data indicated that majority of the respondents 218 representing 53.2% comprising of managers (32 out of 80 respondents), chief accountants (66 out of 118 respondents) and auditors (120 out of 212 respondents) representing 40.0%, 55.9% and 56..6% respectively agree that the company allows capitalization of deductions of any contamination of property. Fewer respondents with 12 representing 2.9% comprising of 7.5%, 2.5% and 1.4% for managers, chief accountants and auditors respectively strongly disagree with the statement. The cross tabulation analysis in table 4.17 implies that larger percentage of respondents agree that the company allows capitalization of deductions of any contamination of property which influences quality of disclosure. From the indication of cross tabulation analysis in table 4.17, it shows that the proportion of chief accountants agreeing with capitalization of environmental cost on quality of disclosure of shipping lines is more than that of the managers and auditors.

Table 4.17: Summary Table for Cross Tabulation of Capitalization of Deductions of any Contamination of Property in the Company. *Respondents position in the company.

			Respondents Position			
			Manager	**Chief Accountant**	**Auditor**	**Total**
The company allows capitalization of deductions of any contamination of property.	Strongly Disagree	Frequency	6	3	3	12
		% within respondents position in the company	7.5%	2.5%	1.4%	2.9%
	Disagree	Frequency	5	7	3	15
		% within respondents position in the company	6.2%	5.9%	1.4%	3.7%
	Neutral	Frequency	23	18	36	77
		% within respondents position in the company	28.8%	15.3%	17.0%	18.89%
	Agree	Frequency	32	66	120	218
		% within respondents position in the company	40.0%	55.9%	56.6%	53.2%
	Strongly Agree	Frequency	14	24	50	88
		% within respondents position in the company	17.5%	20.3%	23.6%	21.5%
Total		**Frequency**	**80**	**118**	**212**	**410**
		% within respondents position in the company	**100.0%**	**100.0%**	**100.0%**	**100.0%**

4.4.3 Objective 3: Effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria

The study sought to establish the effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria. In response to whether the company identify & assess all potential clean-up sites. Majority of the respondents 76.3% agreed with the statement, 17.1% remained neutral and 6.6% disagreed. This implies that majority of the respondents agreed that the company identify & assess all potential clean-up sites. Most responses were 4, confirming that the company identify & assess all potential clean-up sites. McElroy (2007) conducted a study on Environmental Remediation Costs: To Deduct or to Capitalize and noted that Under IRC (Internal Revenue Code) Section 162, corporations may deduct "ordinary and necessary expenses (that are) paid or incurred during the taxable year in carrying on a trade or business." The IRS addressed the deduction of remediation costs in Revenue Ruling 94-38, 1994-1 C.B. 35, in which a deduction was allowed when the costs are not incurred for permanent improvements to the land and will not produce significant future benefits.

My company has a responsibility of each cross-functional area been identified. A total of 74.8% agreed with the statement, 18.8% were neutral and 6.4% disagreed. This indicates that most of the respondents agreed that the company has a responsibility of each cross-functional area been identified. Most responses were 4, confirming that the company has a responsibility of each cross-functional area been identified. The study corroborate with McElroy (2007) noted that IRS has allowed taxpayers to deduct the clean-up costs when there is a temporary break in ownership of the property, but deductions are not available for pre-acquisition contamination.

The respondents were asked in their own opinion to indicate whether detailed accounting standards relating to environmental issues facilitate more complete

disclosure. A significant majority 72% agreed with the statement, 19.7% remained neutral and 8.3% disagreed. This reveals that majority of the respondents agreed that detailed accounting standards relating to environmental issues facilitate more complete disclosure. Most responses were 4, confirming that detailed accounting standards relating to environmental issues facilitate more complete disclosure. The study is supported by Rezaee and Rick Elam (2000) who discussed there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities.

My company has a process for proactive internal identification of sites. A total of 73% agreed with the statement, 19% were neutral and 8% disagreed. This implies that majority of the respondents agreed that the company has a process for proactive internal identification of sites. Most responses were 4, confirming that the company has a process for proactive internal identification of sites. The finding is consistent with Lickiss (1991) who found that companies setting the pace on environmental issues will be seen as the leaders of the corporate sector. The company considers disclosure of future cleanup costs. Majority of the respondents 71.7% agreed with the statement, 18.8% remained neutral and 9.5% disagreed. This indicates that majority of the respondents agreed that the company considers disclosure of future cleanup costs. Most responses were 4, confirming that the company considers disclosure of future cleanup costs. According to McElroy (2007), IRS has allowed taxpayers to deduct the clean-up costs when there is a temporary break in ownership of the property, but deductions are not available for pre-acquisition contamination.

The respondents were asked in their own opinion to indicate whether the company takes a proactive approach to identification and assessment that will avoid the inefficiencies. A significant majority 74.2% agreed with the statement, 17.3% were neutral and 8.5%

disagreed. This implies that majority of the respondents agreed that the company takes a proactive approach to identification and assessment that will avoid the inefficiencies. Most responses were 4, confirming that the company takes a proactive approach to identification and assessment that will avoid the inefficiencies. The finding is in line with the findings of USEPA (1995a) which addresses the importance an organization places on the reduction or elimination of process waste, the tracing of costs to environmental activities, the consideration of environmental matters in investment and design decisions. The responses are presented in the table 4.18.

Table 4.18 Responses on Identification of Environmental Liability

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean	S.D
My company identify & assess all potential clean-up sites	2.2	4.4	17.1	56.8	19.5	4	1
My company has a responsibility of each cross-functional area been identified	2.7	3.7	18.8	54.1	20.7	4	1
Detailed accounting standards relating to environmental issues facilitate more complete disclosure	3.2	5.1	19.7	48.8	23.2	4	1
My company has a process for proactive internal identification of sites	3.4	4.6	19.0	51.5	21.5	4	1
My company considers disclosure of future cleanup costs at the identification	4.4	5.1	18.8	49.5	22.2	4	1
My company take a proactive approach to identification and assessment that will avoid the inefficiencies	4.4	4.1	17.3	52.0	22.2	4	1
Average	**3**	**5**	**18**	**52**	**22**	**100**	

The respondents were asked to indicate whether the company undertakes review of current standards and practices with regards to recognition, and measurement of environmental related liabilities generates environmental cost information. A significant majority 71.2% indicated regularly and 28.8% rarely. This implies that majority of the respondent indicated that the company undertakes review of current standards and practices with regards to recognition, and measurement of environmental related liabilities generates environmental cost information. According to Paul (2005) review of

current standards and practices with regard to the recognition, measurement and disclosure of environmental related liabilities would facilitate more complete disclosure. The result obtained is shown in the table 4.19.

Table 4.19 Review of current standards and practices by the company

Response	Frequency	Percent
Rarely	118	28.8
Regularly	292	71.2
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company uses disclosure index to measure the extent to which environmental liability information are disclosed. A significant majority 80.5% indicated yes, 15.1% no and 4.4% sometimes. This implies that majority of the respondent indicated that the company uses disclosure index to measure the extent to which environmental liability information are disclosed. Leary (2011) utilized a comprehensive environmental disclosure index to measure the extent to which sample firms disclosed environmental liability information required by Generally Accepted Accounting Principles (GAAP). The result obtained is shown in the table 4.20.

Table 4.20 Environmental liability information disclosed by the company using disclosure index

Response	Frequency	Percent
No	62	15.1
Sometimes	18	4.4
Yes	330	80.5
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company compile environmental disclosure index based on relevant authoritative guidance contained in the regulation. The study revealed that 91.7% of the respondents indicated yes, 5.6% no and 2.7% sometimes. This indicates that majority of the respondents opined that the company compile environmental disclosure index based on relevant authoritative guidance contained in the regulation. The finding concur with Leary (2011) who find out that environmental disclosure index was compiled based on relevant authoritative guidance contained in Regulation S-K, SAB 92, and SFAS 5. The result obtained is shown in the table 4.21.

Table 4.21 Compilation of environmental disclosure index based on relevant authoritative guidance contained in the regulation

Response	Frequency	Percent
No	23	5.6
Sometimes	11	2.7
Yes	376	91.7
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate the extent to which the company reviews current standards and practices with regards to disclosure of environmental liabilities in corporate financial statement? A significant majority 74.8% indicated high, 18.8% were neither high nor low 6.4% low. This implies that majority of the respondent indicated that the company reviews current standards and practices with regards to disclosure of environmental liabilities in corporate financial statement. The finding is consistent with the findings of UNEP (1996) which reveal that although not many nations are currently reporting disclosures on environmental issues in financial statements. The result obtained is shown in the table 4.22.

Table 4.22 Review of current standards and practices with regards to disclosure of environmental liabilities in corporate financial statement of the company

Response	Frequency	Percent
Very Low	11	2.7
Low	15	3.7
Neither High nor Low	77	18.8
High	222	54.1
Very High	85	20.7
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company report information on contingent environmental liabilities in their financial reports. The study revealed that 84.9% of the respondents indicated yes, 12.2% no and 2.9% sometimes. This indicates that majority of the respondents opined that the company report information on contingent environmental liabilities in their financial reports. The study is supported by Paul (2005) who found that review of current standards and practices with regard to the recognition, measurement and disclosure of environmental related liabilities would facilitate more complete disclosure. The result obtained is shown in the table 4.23.

Table 4.23 Information on contingent environmental liabilities in the financial reports of the company

Response	Frequency	Percent
No	50	12.2
Sometimes	12	2.9
Yes	348	84.9
Total	**410**	**100.0**

Table 4.24 provides a summary table based on a cross tabulation between the respondents position with the company and identification of environmental liability in obtaining sufficient and quality report of the company. The data indicated that majority of the respondents 222 representing 54.1% comprising of managers (44 out of 80 respondents), chief accountants (62 out of 118 respondents) and auditors (116 out of 212 respondents) representing 55.0%, 52.5% and 54..7% respectively indicated high that the company review current standards and practices with regards to disclosure of environmental liabilities in the financial statements. Fewer respondents with 11 representing 2.7% comprising of 1.2%, 4.2% and 2.4% for managers, chief accountants and auditors respectively opined very low that the company review current standards and practices with regards to disclosure of environmental liabilities in the financial statements. The cross tabulation analysis in table 4.24 implies that larger percentage of respondents indicated high that the company review current standards and practices with regards to disclosure of environmental liabilities in the financial statements which influences quality of disclosure. From the indication of cross tabulation analysis in table

4.24, it shows that the proportion of managers agreeing with identification of environmental liability on quality of disclosure of shipping lines is more than that of the chief accountants and auditors.

Table 4.24: Summary Table for Cross Tabulation of Review of Current Standards and Practices with regards to Disclosure of Environmental Liabilities in the Financial Statements of the Company. *Respondents position in the company.

			Respondents Position			
			Manager	**Chief Accountant**	**Auditor**	**Total**
The company review current standards and practices with regards to disclosure of environmental liabilities in the financial statements.	Very Low	Frequency	6	3	3	12
		% within respondents position in the company	7.5%	2.5%	1.4%	2.9%
	Low	Frequency	5	7	3	15
		% within respondents position in the company	6.2%	5.9%	1.4%	3.7%
	Neither Low or High	Frequency	23	18	36	77
		% within respondents position in the company	28.8%	15.3%	17.0%	18.89%
	High	Frequency	32	66	120	218
		% within respondents position in the company	40.0%	55.9%	56.6%	53.2%
	Very High	Frequency	14	24	50	88
		% within respondents position in the company	17.5%	20.3%	23.6%	21.5%
Total		**Frequency**	**80**	**118**	**212**	**410**
		% within respondents position in the company	**100.0%**	**100.0%**	**100.0%**	**100.0 %**

4.4.4 Objective 4: Effect of measurement of environmental liability on quality of accounting disclosure of shipping lines in Nigeria

The study sought to investigate the effect of measurement of environmental liability on quality of accounting disclosure of shipping lines in Nigeria. In response to whether the company has allocated financial resources for liability identification. Majority of the respondents 72.4% agreed with the statement, 22% remained neutral and 6.6% disagreed. This implies that majority of the respondents agreed that the company has allocated financial resources for liability identification. Most responses were 4, confirming that the company has allocated financial resources for liability identification. The finding is in line with Dunk (2002) who investigated the extent to which product quality and the implementation of environmental accounting positively influence quality performance suggested that the integration of environmental issues into financial decision processes by using environmental accounting would contribute to the enhancement of quality performance and firm performance as a whole.

The respondents were asked to indicate whether the company consistently report on environmental matters in their financial statement. A total of 74.1% agreed with the statement, 21% were neutral and 4.9% disagreed. Majority of the respondents agreed that the company consistently report on environmental matters in their financial statement has allocated manpower resources for liability identification. Most responses were 4, confirming that the company consistently report on environmental matters in their financial statement. The finding concurs with Cormier and Magnan (1997) who found that company consistently report on environmental matters in their financial statement.

The respondents were asked in their own opinion to indicate whether there exists a relationship between the components of a firm value and voluntary environmental

disclosure. A significant majority 76.4% agreed with the statement, 18.5% remained neutral and 5.1% disagreed. This indicates that majority of the respondents agreed that there exists a relationship between the components of a firm value and voluntary environmental disclosure. Most responses were 4, confirming that there exist a relationship between the components of a firm value and voluntary environmental disclosure.

The company has complied with requirements for liability identification. A total of 73.4% agreed with the statement, 20.5% were neutral and 6.1% disagreed. This implies that majority of the respondents agreed that the company has complied with requirements for liability identification. Most responses were 4, confirming that the company has complied with requirements for liability identification. The finding is supported by Rezaee and Rick Elam (2000) who discussed there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities.

The respondents were asked in their own opinion to indicate whether the company revises estimates of past liability based on anticipated changes in regulations. Majority of the respondents 70.5% agreed to the statement, 21.5% remained neutral and 8% disagreed. This indicates that majority of the respondents agreed that the company revises estimates of past liability based on anticipated changes in regulations. Most responses were 4, confirming that the company revises estimates of past liability based on anticipated changes in regulations. The study is consistent with the findings of Meek, Roberts and Gray (1995) who found that disclosure of adequate and reliable information is necessary to penetrate these international markets. The respondents were asked to indicate whether the company keeps records of all environmental liabilities. A total of 70.2% agreed with the statement, 22% were neutral and 7.8% disagreed. This implies

that majority of the respondent agreed that the company keeps records of all environmental liabilities. Most responses were 4, confirming that the company keeps records of all environmental liabilities. The finding concurs with Macve and Carey (1992) who recommended that as part of the annual reporting cycle, a company should publish details of environmental performance. The responses are presented in the table 4.25.

Table 4.25 Responses on Measurement of Environmental Liability

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean	S.D
The company has allocated financial resources for liability identification	1.5	4.1	22.0	46.1	26.3	4	1
The company consistently report on environmental matters in their financial statement	2.0	2.9	21.0	49.7	24.4	4	1
There exists a relationship between the components of a firm value and voluntary environmental disclosure	1.2	3.9	18.5	50.2	26.1	4	1
The company has complied with requirements for liability identification	2.4	3.7	20.5	48.8	24.6	4	1
The company revises estimates of past liability based on anticipated changes in regulations.	2.9	5.1	21.5	46.1	24.4	4	1
The company keeps records of all environmental liabilities.	2.9	4.9	22.0	45.6	24.6	4	1
Average	**2**	**4**	**21**	**48**	**25**	**100**	

The respondents were asked to indicate whether the company consistently report on environmental matters in the financial statements. The study revealed that 80.7% of the respondents indicated yes and 19.3% no. This indicates that majority of the respondents opined that the company consistently report on environmental matters in the financial statements. The finding concur with Skinner (1994) who found that good news disclosure tended to be point or range estimates for annual earnings, and motivated by a desire to signal how well the firm is doing. Whereas bad news disclosures tended to be qualitative and related to quarterly earnings announcements and driven by a need to pre-empt large negative quarterly earnings surprises to avoid reputational and litigation costs

if managers failed to disclose bad news promptly. The result obtained is shown in the table 4.26.

Table 4.26 Report on environmental matters in the financial statements of the company

Response	Frequency	Percent
No	79	19.3
Yes	331	80.7
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate how often the company adopts new environmental accounting standards so as to enhance credibility and reduce litigation risk. A significant majority 83.4% indicated regularly and 16.6% rarely. This implies that majority of the respondent indicated that the company adopts new environmental accounting standards so as to enhance credibility and reduce litigation risk. The finding concurs with Li and McConomy (1999) who found that Canadian companies with strong environmental commitment were able to adopt new environmental accounting standards quicker than companies with less environmental commitment, thereby enhancing credibility and reducing litigation risk. The result obtained is shown in the table 4.27.

Table 4.27 Adoption of new environmental accounting standards by the company so as to enhance credibility and reduce litigation risk.

Response	Frequency	Percent
Rarely	68	16.6
Regularly	342	83.4
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate the extent to which external legislation compel the company to integrate environmental issues into their strategic planning process. The study revealed that 72.7% of the respondents indicated high, 20% were neither high nor low and 7.3% low. This indicates that majority of the respondents opined that external legislation compel the company to integrate environmental issues into their strategic planning process. The finding is in line with Banerjee (2001) who found that external pressures such as legislation and public concern, as well as market opportunities arising from environmental concerns, have compelled firms to integrate environmental issues into their strategic planning process. The result obtained is shown in the table 4.28.

Table 4.28 External legislation compel the company to integrate environmental issues into their strategic planning process

Response	Frequency	Percent
Very Low	10	2.4
Low	20	4.9
Neither High nor Low	82	20
High	194	47.3
Very High	104	25.4
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company adopts traditional and contemporary management accounting practices. A significant majority 86.3% indicated yes and 13.7% no. This implies that majority of the respondent indicated that the company adopts traditional and contemporary management accounting practices. The finding corroborate with Liaqat (2006) who found a positive association between the adoption of activity based cost (ABC) and company characteristics (e.g. degree of customization, pressure of competition, business size, and proportion of overhead to total cost).The result obtained is shown in the table 4.29.

Table 4.29 Adoption of traditional and contemporary management accounting practices by the company

Response	Frequency	Percent
No	56	13.7
Yes	354	86.3
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate the extent to which the company uses a disclosure index consistent with global reporting initiative in measuring liabilities. The study revealed that 70.5% of the respondents indicated high, 21.5% were neither high nor low and 8% low. This indicates that majority of the respondents opined that the company uses a disclosure index consistent with global reporting initiative in measuring liabilities. The finding is consistent with the findings of Plumlee, Brown and Marshall (2010) who conducted a study on Voluntary Environmental Disclosure Quality and Firm Value. The authors measured voluntary environmental disclosure quality using a disclosure index consistent with the Global Reporting Initiative disclosure framework for a sample of US firms across five industries and documented a positive relation between voluntary disclosure quality and firm value through both the cash flow and cost of capital components. The result obtained is shown in the table 4.30.

Table 4.30 Consistent disclosure index with global reporting initiative in measuring liabilities of the company

Response	Frequency	Percent
Very Low	12	2.9
Low	21	5.1
Neither High nor Low	88	21.5
High	189	46.1
Very High	100	24.4
Total	**410**	**100.0**

Table 4.31 provides a summary table based on a cross tabulation between the respondents position with the company and measurement of environmental liability in obtaining sufficient and quality report of the company. The data indicated that majority of the respondents 189 representing 46.1% comprising of managers (42 out of 80 respondents), chief accountants (59 out of 118 respondents) and auditors (88 out of 212 respondents) representing 52.5%, 50.0% and 41.5% respectively opined high that the company uses a disclosure index consistent with global reporting initiative in measuring liabilities. Fewer respondents with 12 representing 2.9% comprising of 1.7% and 4.7% for chief accountants and auditors respectively indicated very low that the company uses a disclosure index consistent with global reporting initiative in measuring liabilities. The cross tabulation analysis in table 4.31 implies that larger percentage of respondents indicated high that the company uses a disclosure index consistent with global reporting initiative in measuring liabilities which influences quality of disclosure. From the indication of cross tabulation analysis in table 4.31 it shows that the proportion of managers agreeing with measurement of environmental liability on quality of disclosure of shipping lines is more than that of the chief accountants and auditors.

Table 4.31: Summary Table for Cross Tabulation of Use of Disclosure Index consistent with Global Reporting initiative in Measuring Liabilities of the Company. *Respondents position in the company.

			Respondents Position			
			Manager	**Chief Accountant**	**Auditor**	**Total**
The company uses a disclosure index consistent with global reporting initiative in measuring liabilities.	Very Low	Frequency	0	2	10	12
		% within respondents position in the company	0.0%	1.7%	4.7%	2.9%
	Low	Frequency	0	3	18	21
		% within respondents position in the company	0.0%	2.5%	8.5%	5.1%
	Neither Low or High	Frequency	16	22	50	88
		% within respondents position in the company	20.0%	18.6%	23.6%	21.5%
	High	Frequency	42	59	88	189
		% within respondents position in the company	52.5%	50.0%	41.5%	46.1%
	Very High	Frequency	22	32	46	100
		% within respondents position in the company	27.5%	27.1%	27.7%	24.4%
Total		**Frequency**	**80**	**118**	**212**	**410**
		% within respondents position in the company	**100.0%**	**100.0%**	**100.0%**	**100.0%**

4.4.5 Quality of Accounting Disclosure

In this study quality of disclosure was the dependent variable. In response to whether the company sets out its environmental policy and develops information systems for

monitoring its performance. A significant majority 74.9% agreed with the statement, 17.8% remained neutral and 7.3 % disagreed. This indicates that majority of the respondents agreed that the company sets out its environmental policy and develops information systems for monitoring its performance. The responses had a mean of 4. Most responses were 4, confirming that the company sets out its environmental policy and develops information systems for monitoring its performance. The finding concurs with Macve and Carey (1992) who recommended that as part of the annual reporting cycle, a company should publish details of environmental performance.

The company engages more actively in environmental disclosure in its annual report. A total of 75.4% agreed with the statement, 16.8% were neutral and 7.8% disagreed. This implies that majority of the respondents agreed that the company engages more actively in environmental disclosure in its annual report. Most responses were 4, confirming that the company engages more actively in environmental disclosure in its annual report. The finding is consistent with the findings of UNEP (1996) which reveal that although not many nations are currently reporting disclosures on environmental issues in financial statements.

The respondents were asked to indicate in their opinion whether financial information is aggregated and classified according to standard disclosure formats. Majority of the respondents 73.4% agreed with the statement, 20.2% remained neutral and 60.4% disagreed. This indicated that majority of the respondents agreed that financial information is aggregated and classified according to standard disclosure formats. Most responses were 4, confirming that financial information is aggregated and classified according to standard disclosure formats. The study is supported by Rezaee and Rick Elam (2000) who discussed there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with

applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities.

The company publishes its annual report with timely and reliable information useful for making efficient and effective decision. A significant majority 72.7% agreed with the statement, 19.5% remained neutral and 7.8% disagreed. This implies that majority of the respondent agreed that the company publishes its annual report with timely and reliable information useful for making efficient and effective decision. Most responses were 4, confirming that the company publishes its annual report with timely and reliable information useful for making efficient and effective decision. The study agree with Ali, Ahmed and Henry (2004) which reveals that the level of reliable and adequate information by listed companies in developing countries lags behind than in developed ones and government regulatory forces are less effective in driving the enforcement of existing accounting standards.

The respondents were asked to indicate whether the financial information presented is credible and enhances the reliability of the financial statements. A total of 74.9% agreed with the statement, 17.8% were neutral and 7.3% disagreed. This indicates that majority of the respondents agreed that financial information presented is credible and enhances the reliability of the financial statements. Most responses were 4, confirming that financial information presented is credible and enhances the reliability of the financial statements. The finding is supported by Daniel and Ambrose (2013) who recommended that government should give tax credit to organizations that comply with its environmental laws and that environmental reporting should be made compulsory in so as to improve the performance of organizations and the nation as a whole.

The respondents were asked in their own opinion to indicate whether financial statements are prepared in accordance with disclosure requirements. Majority of the

respondents 75.4% agreed with the statement, 16.8% remained neutral and 7.8% disagreed. This implies that majority of the respondents agreed that financial statements are prepared in accordance with disclosure requirements. Most responses were 4, confirming that financial statements are prepared in accordance with disclosure requirements. The finding is supported by Rezaee and Rick Elam (2000) who discussed there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities. The responses are presented in the table 4.32

.**Table 4.32: Responses on Quality of Accounting Disclosure**

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean**	**S.D**
	%	**%**	**%**	**%**	**%**		
The company sets out its environmental policy and develops information systems for monitoring its performance.	3.2	4.1	17.8	51.7	23.2	4	1
The company engages more actively in environmental disclosure in its annual report.	2.7	5.1	16.8	54.9	20.5	4	1
Financial information is aggregated and classified according to standard disclosure formats	2.4	3.9	20.2	47.8	25.6	4	1
The company publishes its annual report with timely and reliable information useful for making efficient and effective decision.	2.7	5.1	19.5	49.0	23.7	4	1
The financial information presented is credible and this enhances the reliability of the financial statements	3.2	4.1	17.8	51.7	23.2	4	1
Financial statements are prepared in accordance with disclosure requirements.	2.7	5.1	16.8	54.9	20.5	4	1
Average	**3**	**5**	**18**	**52**	**23**	**100**	

The respondents were also required to indicate whether the company reports disclosures on environmental issues in its financial statements. The study revealed that 87.1% of the respondents indicated yes and 12.9% no. This indicates that majority of the respondents opined that the company reports disclosures on environmental issues in its financial statements. The finding is in line with Fekrat et al. (1996) who studied the scope and accuracy of environmental disclosures made in corporate annual reports. The result obtained is shown in the table 4.33.

Table 4.33 Disclosure of environmental issues in the financial statements of the company

Response	Frequency	Percent
No	53	12.9
Yes	357	87.1
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate how often the company discloses adequate and reliable information necessary to penetrate the market. A significant majority 83.4% indicated regularly and 16.6% rarely. This implies that majority of the respondent indicated that the company often discloses adequate and reliable information necessary to penetrate the market. The study is consistent with the findings of Meek, Roberts & Gray (1995) who found that disclosure of adequate and reliable information is necessary to penetrate these international markets. The result obtained is shown in the table 4.34.

Table 4.34 Adequate and reliable information disclosed by the company to penetrate the market

Response	Frequency	Percent
Rarely	68	16.6
Regularly	342	83.4
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate the extent to which the company discloses mandatory requirements and significantly disclose more voluntary information that enables them compete globally. The study revealed that 75.4% of the respondents indicated high, 16.8% were neither high nor low and 7.8% low. This indicates that majority of the respondents opined that the company discloses mandatory requirements and significantly disclose more voluntary information that enables them compete globally. The finding corroborates with Meek, Roberts & Gray (1995) who found that disclosure of adequate and reliable information is necessary to penetrate these international markets. Those competing for funds in the international capital arena have been found to comply with disclosing mandatory requirements and in addition disclose significantly more voluntary accounting information that enables them to compete globally. The result obtained is shown in the table 4.35.

Table 4.35 Mandatory requirements and voluntary information disclosed by the company enable them compete globally

Response	Frequency	Percent
Very Low	11	2.7
Low	21	5.1
Neither High nor Low	69	16.8
High	225	54.9
Very High	84	20.5
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether managers disclose information about the value of the firm. A significant majority 88.3% indicated yes and 11.7% no. This implies that majority of the respondent indicated that managers disclose information about the value of the firm. The finding concurs with Meek, Roberts & Gray (1995) who found that disclosure of adequate and reliable information is necessary to penetrate these international markets. The result obtained is shown in the table 4.36.

Table 4.36 Value of the firm information disclosed by the managers

Response	Frequency	Percent
No	48	11.7
Yes	362	88.3
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether financial regulation imposes a considerable amount of mandatory reporting via a variety of regulated financial reports. A significant majority 94.6% indicated yes and 5.4% no. This implies that majority of the respondent indicated that financial regulation imposes a considerable amount of mandatory reporting via a variety of regulated financial reports. The finding concur with Karthik, Xi and Holly (2012) who investigates the interaction between mandatory financial reporting and voluntary disclosure by employing the mandatory adoption of International Financial Reporting Standards (IFRS) as an exogenous change to mandatory reporting to examine changes in firms' voluntary disclosure practices. The result obtained is shown in the table 4.37.

Table 4.37 Mandatory reporting imposes a considerable amount via variety of regulated financial reports

Response	Frequency	Percent
No	22	5.4
Yes	388	94.6
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company complied and adopted the international financial reporting standard in the preparation and presentation of financial statements. The study revealed that 92.2% of the respondents indicated yes and 7.8% low. This indicates that majority of the respondents opined that the company complied and adopted the international financial reporting standard in the preparation and presentation of financial statements. The finding concur with Karthik, Xi and Holly (2012) who investigates the interaction between mandatory financial reporting and voluntary disclosure by employing the mandatory adoption of International Financial Reporting Standards (IFRS) as an exogenous change to mandatory reporting to examine changes in firms' voluntary disclosure practices. The result obtained is shown in the table 4.38.

Table 4.38 International financial reporting standard compiled and adopted by the company in the preparation and presentation of financial statements

Response	Frequency	Percent
No	32	7.8
Yes	378	92.2
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate the techniques used to evaluate the feasibility of environmental projects. The study revealed that 48.3% indicated NPV, 21.7% profitability index, 19.8% return on total asset, 6.3% payback and 3.9% IRR. This implies that majority of the respondent indicated that NPV technique is used to evaluate the feasibility of environmental projects. The result obtained is shown in the table 4.39.

Table 4.39 Techniques used to evaluate the feasibility of environmental projects

Response	Frequency	Percent
Payback	26	6.3
IRR	16	3.9
Return on Total Assets	81	19.8
NPV	198	48.3
Profitability Index	89	21.7
Total	**410**	**100.0**

The respondents were asked in their own opinion to indicate whether the company discloses information on environmental accounting A significant majority 95.1% indicated yes and 4.9% no. This implies that majority of the respondent indicated that the company disclose information on environmental accounting. The study is consistent with the findings of Meek, Roberts & Gray (1995) who found that disclosure of adequate and reliable information is necessary to penetrate these international markets. The result obtained is shown in the table 4.40.

Table 4.40 Environmental accounting information disclosed by the company

Response	Frequency	Percent
No	20	4.9
Yes	39	95.1
Total	**410**	**100.0**

4.5 Diagnostic Tests

4.5.1 Normality Tests

Inferential statistics are meant to infer whether there is underlying relationship within the respective variables for purposes of sequential analysis. The dependent variable was subjected to normality to check whether the data provided was normally distributed or not. The best to evaluate how far data is normal is to test for one sample Kolmogorov-Smirnov and plot normal Q.Q for the dependent variable (Garson, 2012). For one to fit a linear model to some given data, the dependent variable (quality of accounting disclosure) has to be normally distributed.

4.5.2 One Sample Kolmagorov-Smirnov Test (KS)

A One-Sample Kolmogorov-Smirnov Test was done to test the normality of the dependent variable quality of disclosure. The Kolmogorov-Smirnov test (also known as the K-S test or one sample Kolmogorov-Smirnov test) is a non parametric procedure that determines whether a sample of data comes from a specific distribution, i.e., normal, uniform, Poisson, or exponential distribution. It is mostly used for evaluating the assumption of univariate normality by taking the observed cumulative distribution of scores and comparing them to the theoretical cumulative distribution for a normally distributed variable. The null and alternative hypotheses were stated as follows:

H_0: The data is not normally distributed

H_1: The data is normally distributed

The rule is that if the p-value is greater than 0.05, H_0 is not rejected and H_1 is rejected, if the p -value is less than 0.05, H_0 is rejected and H_1 is accepted. The results obtained in table 4.41 indicate that Kolmogorov-Smirnov Z is 2.331 (p-value=0.245). Since the p-

value is greater than 0.05, the null hypothesis was not rejected and concluded that the data was normally distributed.

Table 4.41 One-Sample Kolmogorov-Smirnov Test

		Quality of Disclosure
N		410
Normal Parameters[a,b]	Mean	26.2536
	Std. Deviation	4.30099
Most Extreme Differences	Absolute	.115
	Positive	.115
	Negative	-.102
Kolmogorov-Smirnov Z		2.331
Asymp. Sig. (2-tailed)		0.245

a. Test distribution is Normal.

4.5.3 Normal Q.Q Plot

Figure 4.4 shows the results of the normal Q.Q plot of the dependent variable (quality of disclosure). The result implies that majority of the data were closer to the normality line. It is evident that quality of accounting disclosure was normally distributed as there were no outliers. This type of data was therefore suitable for all types of statistical analysis.

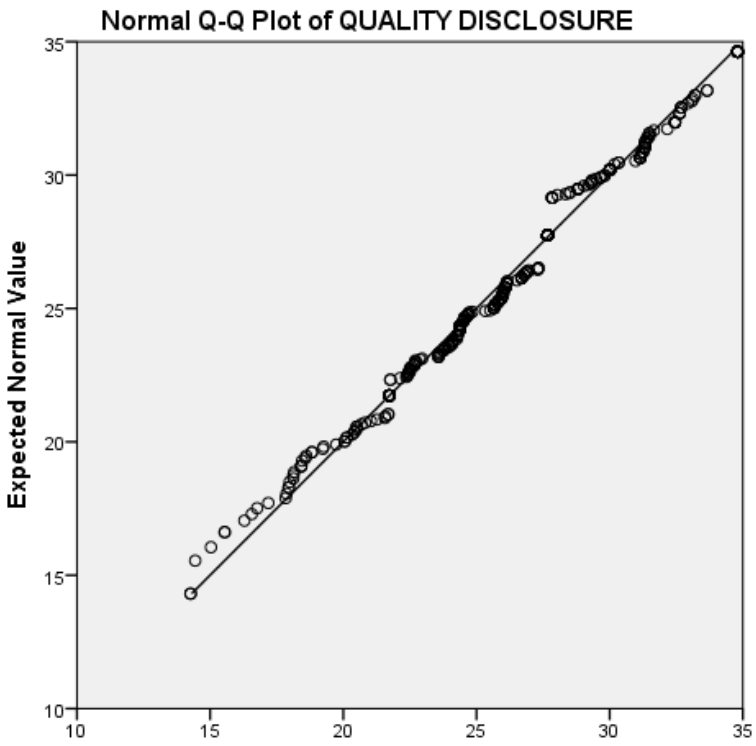

Figure 4.4 Normal Q.Q plot of Quality of Accounting Disclosure

4.5.4 Homoscedastic Test for Quality of Accounting Disclosure

Homoscedasticity suggests that the dependent variable has an equal level of variability for each of the values of the independent variables (Garson, 2012). A test for homoscedasticity is made to test for variance in residuals in the regression model used. If there exist equal variance of the error term, we have a normal distribution. Lack of an equal level of variability for each value of the independent variables is known as heteroscedasticity, The Breusch-Pagan test developed by Breusch and Pagan (1979) was used to test for homogeneity in a linear regression mode. The null and alternative hypotheses are stated below.

H_0: The data is not homogeneous in variance

H_1: The data is homogeneous in variance

The rule is that if the p-value is greater than 0.05, H_o is accepted and H_1 is rejected, if the p -value is less than 0.05, H_o is rejected and H_1 is accepted. The result of the test is shown in table 4.42, which indicate that the test statistic is 6.6494 (p-value = 0.8395) with the degree of freedom. Since the test –Statistic is small with the p-value greater than 0.05, the null hypothesis was accepted and concluded that there was homoscedasticity in the data (that is, the data is not heterogeneous in variance), which satisfies the assumption of regression.

Table 4.42 Test for Homoscedasticity in the Response and Residuals

Test – Statistic	Degree of Freedom	P-Value
6.6494	4	0.8395

4.5.5 Test for Multicollinearity

Multicollinearity is an unacceptable high level of inter correlation among the independent variables, such that effects of independent variables cannot be separated (Garson, 2012). In multiple regression, the variance inflation factor (VIF) is used as an indicator of multicollinearity. Variance inflation factor (VIF) is a factor by which the variance of the given partial regression coefficient increases due to given variable's extent of correlation with other predictors in the model (Dennis, 2011). As a rule of thumb, lower levels of variance inflation factor (VIF) are desirable as higher levels of VIF are known to affect adversely the results associated with multiple regression

analysis. A simple diagnostic of co linearity is the variance inflation factor for each regression coefficient.

Garson (2012) asserts that the rule of thumb is that VIF > 4.0 multicollinearity is a problem and other scholars use more lenient cut off of VIF > 5.0 when multicollinearity is a problem. However, O'Brien (2007) suggests that this rule of thumb should be assessed in contextual basis taking into account factors that influence the variance of regression coefficient. He further argued that the VIF value of 10 or even 40 or higher does not necessarily suggest the need for common treatment of multicollinearity such as using ridge regressions, elimination of some variables or combine into a single variable.

This study adopted a VIF value of 4.0 as the threshold. Identification of environmental cost had a VIF of 3.333, capitalization of environmental liability 3.436, identification of environmental liability 2.033, and measurement of environmental liability 1.776. These results indicate that the VIF values of the independent variables were within the threshold of 4.0. This indicated that that there was no threat of multicollinearity problem and therefore, the study used linear regression model. The results of the analysis are shown in table 4.43.

Table 4.43: Multicollinearity Test

Variable	Tolerance	VIF
Identification of Environmental cost	0.300	3.333
Capitalization of Environmental Cost	0.291	3.436
Identification of Environmental Liability	0.492	2.033
Measurement of Environmental Liability	0.563	1.776

4.6 Correlation Analysis

In this section a scatter plot was done followed by correlation and regression analysis on all the independent variables versus the dependent variable.

4.6.1 Objective 1: Effect of Identification of Environmental Cost and Quality of Accounting Disclosure of Shipping Lines in Nigeria

To show the kind of a relationship that existed between the independent variable identification of environmental cost and the dependent variable quality of accounting disclosure, a scatter plot was generated. From figure 4.5, the scatter plot shows an upward sloping relationship. This suggests that there is a strong positive linear relationship between identification of environmental cost and quality of accounting disclosure. Therefore the level of influence of identification of environmental cost on quality of disclosure can statistically be determined by undertaking linear correlation and regression analysis. This can be interpreted that the more the identification of environmental cost, the higher the quality of accounting disclosure.

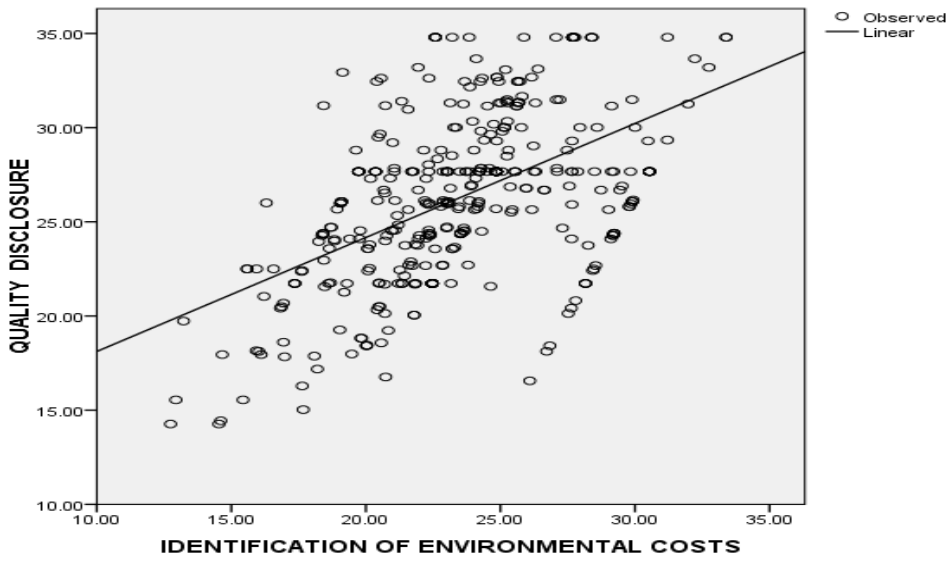

Figure 4.5 Scatter Plot for Identification of Environmental Cost and Quality of Accounting Disclosure

4.6.2 Objective 2: Effect of Capitalization of Environmental Cost and Quality of Accounting Disclosure of Shipping Lines in Nigeria

To show the kind of a relationship that existed between the independent variable capitalization of environmental cost and the dependent variable quality of accounting disclosure, a scatter plot was generated. From figure 4.6, the scatter plot shows an upward sloping relationship. This suggests that there is a strong positive linear relationship between capitalization of environmental cost and quality of accounting disclosure. Therefore the level of influence of capitalization of environmental cost on quality of disclosure can statistically be determined by undertaking linear correlation and regression analysis. This can be interpreted that the more the capitalization of environmental cost, the higher the quality of accounting disclosure.

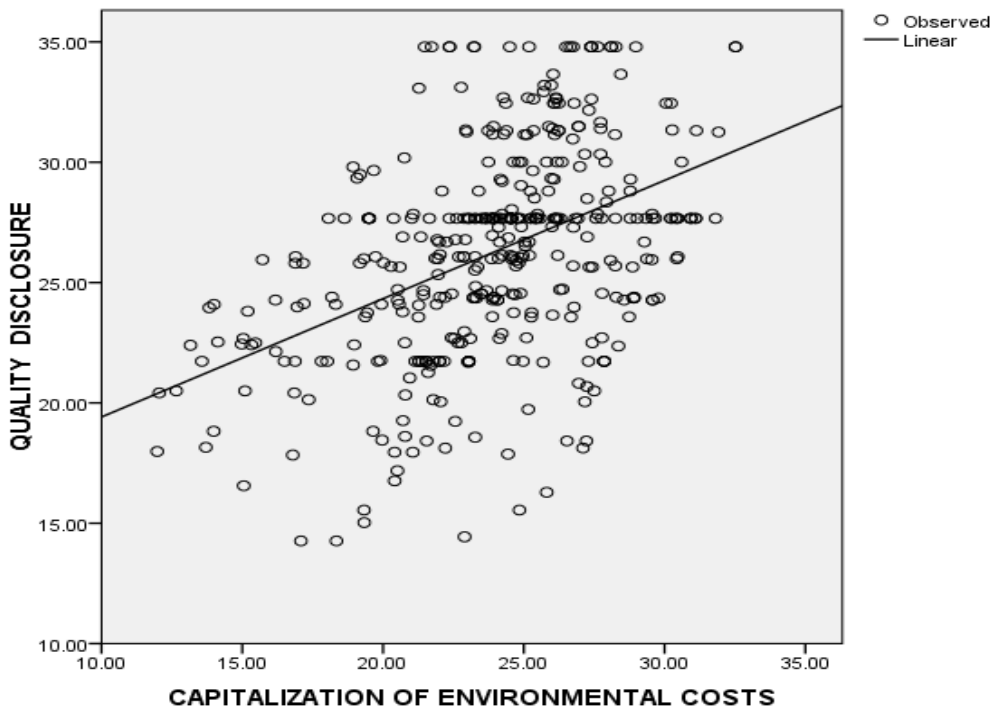

Figure 4.6 Scatter Plot for Capitalization of Environmental Cost and Quality of Accounting Disclosure

4.6.3 Objective 3: Effect of Identification of Environmental Liability and Quality of Accounting Disclosure of Shipping Lines in Nigeria

To show the kind of a relationship that existed between the independent variable identification of environmental liability and the dependent variable quality of accounting disclosure, a scatter plot was generated. From figure 4.7 the scatter plot suggests that there is weak positive linear relationship between identification of environmental liability and quality of accounting disclosure. Therefore the level of influence of identification of environmental liability on quality of accounting disclosure can statistically be determined by undertaking linear correlation and regression analysis.

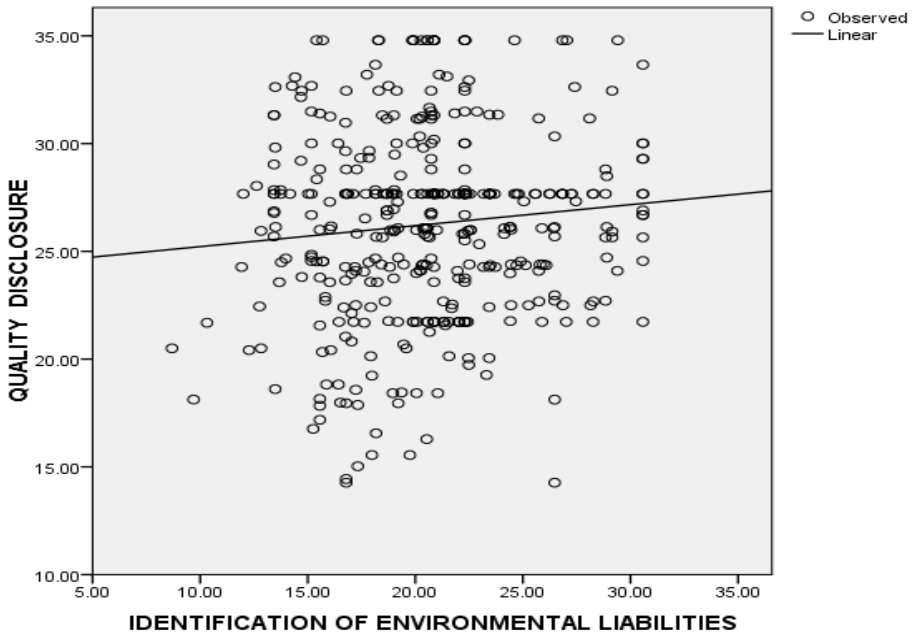

Figure 4.7 Scatter Plot for Identification of Environmental Liability and Quality of Accounting Disclosure

4.6.4 Effect of Measurement of Environmental Liability and Quality of Accounting Disclosure of Shipping Lines in Nigeria

To show the kind of a relationship that existed between the independent variable measurement of environmental liability and the dependent variable quality of accounting disclosure, a scatter plot was generated. From figure 4.8 the scatter plot suggests that there is weak positive linear relationship between identification of environmental liability and quality of accounting disclosure. Therefore the level of influence of measurement of environmental liability on quality of accounting disclosure can statistically be determined by undertaking linear correlation and regression analysis.

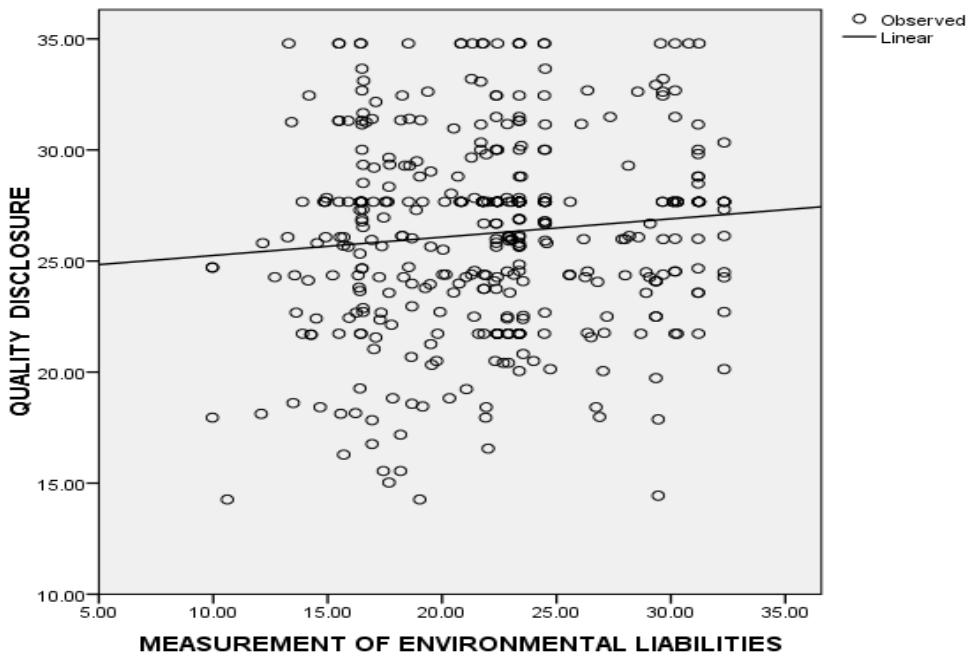

Figure 4.8 Scatter Plot for Measurement of Environmental Liability and Quality of Accounting Disclosure

4.7. Pearson Correlation Matrix for Independent and Dependent Variables

According to Kothari (2004), Karl Pearson Correlation Coefficient is the most widely used method of measuring the degree of relationship between two variables. It ranges from -1 to +1. A correlation coefficient of -1 indicates a perfect negative correlation, 0 indicates no correlation while +1 indicates a perfect positive correlation. It tells a researcher the magnitude and direction of the relationship between two variables.

The Pearson Correlation of identification of environmental cost versus quality of accounting disclosure was computed and established as 0.648 (p-value=0.000) which is a strong significant and positive relationship between the two variables. A relationship therefore exists since it is above the recommended 30% (Mugenda & Mugenda, 2003).

Neungruthai and Mula (2012) in their study on conceptual design for environmental and social cost identification and measurement system found a significant positive relationship between identification of environmental cost and quality of accounting disclosure. From table 4.44, it could then be concluded that there is a positive linear relationship between identification of environmental cost and quality of accounting disclosure.

The Pearson Correlation of capitalization of environmental cost versus quality of accounting disclosure was computed and established as 0.678 (p=0.000) which is a strong significant and positive linear relationship between the two variables as shown in table 4.44. McElroy (2007) in his study on Environmental Remediation Costs: To Deduct or to Capitalize found that comparing the value "of the asset after the expenditure with the status of the asset before the condition arose necessitated the expenditure (i.e., before the land was contaminated by the taxpayer's hazardous waste)." If value increases, then the remediation costs must be capitalized. From table 4.44, it could then be concluded that there is a positive linear relationship between capitalization of environmental cost and quality of accounting disclosure.

The Pearson Correlation of identification of environmental liability versus quality of accounting disclosure was computed and established as 0.754 (p=0.000). This is a strong significant and positive relationship between the two variables. From table 4.44, it could then be concluded that there is a strong positive linear relationship between identification of environmental liability and quality of accounting disclosure. Leary (2011) in his study on Factors Influencing the Level of Environmental Liability Disclosure in 10k reports found that a comprehensive environmental disclosure index is used to measure the extent to which firms disclose environmental liability information. Deegan and Gordon (1996) (Australia) analyzed the environmental disclosure practices of Australian corporate entities and found that there was a positive correlation between

environmental sensitivity and the level of disclosure, and in some sensitive industries between environmental disclosure levels and firm size. From table 4.44, it could then be concluded that there is a positive linear relationship between identification of environmental liability and quality of accounting disclosure.

The Pearson Correlation of measurement of environmental liability versus quality of accounting disclosure was computed and established as 0.734 (p=0.000). This is a strong significant and positive relationship between the two variables. Li and McConomy (1999) found that Canadian companies with strong environmental commitment were able to adopt new environmental accounting standards quicker than companies with less environmental commitment, thereby enhancing credibility and reducing litigation risk. Making adequate provisions for environmental liabilities also prevents the company from going bust or suddenly developing a serious cash flow problem. From table 4.44, it could then be concluded that there is a strong positive linear relationship between measurement of environmental liability and quality of accounting disclosure.

Table 4.44 Pearson Correlation Matrix for Independent and Dependent Variables

		Quality Disclosure	Identification of Environmental Cost	Capitalization of Environmental Cost	Identification of Environmental Liabilities	Measurement of Environmental Liabilities
Quality of Accounting Disclosure	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	410				
Identification of Environmental Cost	Pearson Correlation	.648**	1			
	Sig. (2-tailed)	.000				
	N	410	410			
Capitalization of Environmental Cost	Pearson Correlation	.678**	.246**	1		
	Sig. (2-tailed)	.000	.000			
	N	410	410	410		
Identification of Environmental Liabilities	Pearson Correlation	.754**	.059	.130**	1	
	Sig. (2-tailed)	.000	.234	.009		
	N	410	410	410	410	
Measurement of Environmental Liabilities	Pearson Correlation	.734**	.083	.088	.094	1
	Sig. (2-tailed)	.000	.093	.074	.057	
	N	410	410	410	410	410

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

4.8. Regression Analysis

4.8.1 Objective 1: Effect of identification of environmental cost on quality of accounting disclosure of shipping lines in Nigeria.

Regression is the determination of a statistical relationship between two or more variables (Kothari, 2014). In simple regression, there are two variables, one variable

(defined as independent) is the cause of the behavior of another one (defined as dependent variable). Table 4.45 shows the regression relationship analysis result between Identification of Environmental Cost and Quality of Accounting Disclosure. The regression analysis shows a relationship R=0.648 and R^2=0.420. This meant that 42.0% of variation in the quality of disclosure be explained by a unit change in identification of environmental cost. The remaining percentage of 58.0% is explained by other variables namely, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. This is shown in table 4.45. Cohen (2008) investigates the determinants and economic consequences associated with firms' financial reporting choices. The author finds evidence of a positive association between investors' demands for firm-specific information and financial reporting quality. The author also finds that higher proprietary costs are associated with a lower quality of financial information.

Table 4.45 Model Summary for Identification of Environmental Cost and Quality of Accounting Disclosure

R	R Square
.648[a]	.420

a. Predictors: (Constant), Identification of Environmental Cost

ANOVA is a procedure for testing the difference among different groups of data for homogeneity (Kothari, 2014). The purpose of ANOVA is to show the total amount of variation in a set of data is broken down into two types, that amount which can be attributed to specified causes. F-test was carried out to test the null hypothesis that there is no relationship between identification of environmental cost and quality of accounting disclosure. The ANOVA test in Table 4.46 shows that the significance of the F-statistic

0.000 is less than 0.05 meaning that null hypothesis is rejected and conclude that there is a relationship between identification of environmental cost and quality of accounting disclosure. Cohen (2008) investigates the determinants and economic consequences associated with firms' financial reporting choices. The author finds evidence of a positive association between investors' demands for firm-specific information and financial reporting quality. The author finds no significant evidence that firms choosing to provide financial information of higher quality enjoy a lower cost of equity capital.

Table 4.46 ANOVA Results for Identification of Environmental Cost and Quality of Accounting Disclosure

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3177.679	1	3177.679	295.460	.000[b]
Residual	4388.223	408	10.755		
Total	7565.902	409			

a. Dependent Variable: Quality of Accounting Disclosure

b. Predictors: (Constant), Identification of Environmental Cost

To test the significance of regression relationship between identification of environmental cost and quality of accounting disclosure, the regression coefficients (β), the intercept (α), and the significance of all coefficients in the model were subjected to the t-test to test the null hypothesis that the coefficient is zero. The null hypothesis state that, β (beta) = 0, meaning there is no significant relationship between identification of

environmental cost and quality of accounting disclosure as the slope β (beta) = 0 (no relationship between the two variables). The results on the beta coefficient of the resulting model in table 4.47 shows that the constant α = 12.065 is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient β = 0.605 is also significantly different from 0 with a p-value=0.000 which is less than 0.05.

This implies that the null hypothesis $\beta_1=0$ is rejected and the alternative hypothesis $\beta_1\neq0$ is taken to hold implying that the model Y=12.065+0.605 IEC (Identification of Environmental Cost) is significantly fit. The model Quality of Accounting Disclosure = $\alpha + \beta$ (Identification of Environmental Cost) holds as suggested by the test above. This confirms that there is a positive linear relationship between identification of environmental cost and quality of accounting disclosure. The result is in line with Dunk (2002) who found that the greater the integration of environmental issues into financial decision processes, the better the performance of the company. Preinreich (1938) and Edwards and Bell (1961), also documents a negative association between disclosure level and cost of equity capital for firms with low analyst.

Table 4.47 Coefficient for Relationship between Identification of Environmental Cost and Quality of Accounting Disclosure

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	12.065	1.148		10.506	.000
Identification of Environmental Cost	.605	.048	.648	12.511	.000

a. Dependent Variable: Quality of Accounting Disclosure

4.8.2 Objective 2: Effect of capitalization of environmental cost on quality of accounting disclosure of shipping lines in Nigeria.

Regression analysis was conducted to determine whether capitalization of environmental cost was a significant determinant of quality of accounting disclosure. Regression results in table 4.43 indicate the goodness of fit for the regression between Capitalization of Environmental Cost and Quality of Accounting Disclosure. The regression analysis shows a relationship R=0.678 and R^2=0.460. This shows that 46.0% of variation in the quality of disclosure be explained by a unit change in capitalization of environmental cost. The remaining percentage of 54.0% is explained by other variables namely, identification of environmental cost, identification of environmental liability and measurement of environmental liability. This is shown in table 4.48. Mohamed and Faouzi (2014) examined the Effect of Corporate Environmental Disclosure on the Cost of Equity Capital for a sample of Tunisian firms over the period 2003-2011 and found that firms with better environmental disclosure scores exhibit cheaper equity financing. In particular, their findings suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity.

Table 4.48 Model Summary for Capitalization of Environmental Cost and Quality of Accounting Disclosure

R	R Square
.678[a]	.460

a. Predictors: (Constant), Capitalization of environmental cost

F-test was then carried out to test the null hypothesis that there is no relationship between capitalization of environmental cost and quality of accounting disclosure. Analysis of variance (ANOVA) was used to determine whether there is a regression

relationship, between capitalization of environmental cost and quality of accounting disclosure. The ANOVA test in Table 4.49 shows that the significance of the F-statistic 0.000 is less than 0.05 meaning that null hypothesis is rejected and conclude that there is a relationship between capitalization of environmental cost and quality of accounting disclosure. Botosan *et al*. (2004) examine the association between Disclosure Quality (both private and public) and Cost of Equity Capital at the Aggregate Disclosure Level and found that an inverse relation exists between the quality of disclosure and cost of equity capital.

Table 4.49 ANOVA results for Capitalization of Environmental Cost versus Quality of Accounting Disclosure

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3480.315	1	3480.315	347.544	.000[b]
Residual	4085.587	408	10.014		
Total	7565.902	409			

a. Dependent Variable: Quality of Accounting Disclosure

b. Predictors: (Constant), Capitalization of Environmental Cost

To test the significance of regression relationship between capitalization of environmental cost and quality of accounting disclosure, the regression coefficients (β), the intercept (α), and the significance of all coefficients in the model were subjected to the t-test to test the null hypothesis that the coefficient is zero. The null hypothesis state that, β (beta) = 0, meaning there is no significant relationship between capitalization of

environmental cost and quality of accounting disclosure as the slope β (beta) = 0 (no relationship between the two variables). The results on the beta coefficient of the resulting model in table 4.50 shows that the constant α = 14.500 is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient β = 0.492 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. This implies that the null hypothesis β_1=0 is rejected and the alternative hypothesis $\beta_1 \neq 0$ is taken to hold implying that the model Y=14.500+0.492 (Capitalization of Environmental Cost) + e, is significantly fit. The model Quality of Accounting Disclosure = α + β (Capitalization of Environmental Cost) holds as suggested by the test above. This confirms that there is a positive linear relationship between capitalization of environmental cost and quality of accounting disclosure. Shen and Huang (2010) carried out a study on An Analysis of Environmental Disclosure of Listed Companies in China based on the content analysis of annual reports of listed companies. They found that there are significant differences among industries in content, quality, and quantity of environmental disclosures. The finding of their study is to improve the environmental disclosures and finally the environmental performances of businesses.

Table 4.50 Coefficient for Relationship between Capitalization of Environmental Cost and Quality of Accounting Disclosure

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	14.500	1.196		12.120	.000
Capitalization of Environmental Cost	.492	.049	.678	9.952	.000

a. Dependent Variable: Quality of Accounting Disclosure

4.8.3 Objective 3: Effect of identification of environmental liability on quality of accounting disclosure of shipping lines in Nigeria.

Regression analysis was conducted to determine whether identification of environmental liability was a significant determinant of quality of accounting disclosure. Regression results in table 4.51 indicate the goodness of fit for the regression between Identification of Environmental Liability and Quality of Accounting Disclosure. The regression analysis shows a relationship R=0.754 and R^2=0.570. This shows that 57.0% of the corresponding change in the quality of disclosure be explained by a unit change in identification of environmental liability as shown in table 4.51. This is a strong relationship as the remaining percentage of 43.0% is explained by other variables namely identification of environmental cost, capitalization of environmental cost and measurement of environmental liability. This study concurs with Freedman and Stangliano (1991) who found that companies with better environmental disclosure track records experienced fewer declines in market valuation following the introduction of more stringent environmental legislation, than companies with poorer disclosure practices.

Table 4.51 Model Summary for Identification of Environmental Liability and Quality of Accounting Disclosure

R	R Square
.754[a]	.570

a. Predictors: (Constant), Identification of environmental liability

F-test was further carried out to test the null hypothesis that there is no relationship between identification of environmental liability and quality of accounting disclosure.

Analysis of variance (ANOVA) was used to determine whether there is a regression relationship, between identification of environmental liability and quality of accounting disclosure. The ANOVA test in Table 4.52 shows that the significance of the F-statistic 0.000 is less than 0.05 meaning that null hypothesis is rejected and conclude that there is a relationship between identification of environmental liability and quality of accounting disclosure. Fekrat *et al*. (1996) (US) studied the scope and accuracy of environmental disclosures made in corporate annual reports. Overall, the results indicated significant variations in environmental disclosures, as well as a lack of association between disclosure and environmental performance.

Table 4.52 ANOVA results for Identification of Environmental Liability versus Quality of Accounting Disclosure

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4312.564	1	4312.564	540.896	.000[b]
Residual	3253.338	408	7.973		
Total	7565.902	409			

a. Dependent Variable: Quality of Accounting Disclosure

b. Predictors: (Constant), Identification of Environmental Liability

To test the significance of regression relationship between identification of environmental liability and quality of accounting disclosure, the regression coefficients (β), the intercept (α), and the significance of all coefficients in the model were subjected to the t-test to test the null hypothesis that the coefficient is zero. The null hypothesis state that, β (beta) = 0, meaning there is no significant relationship between identification of environmental liability and quality of accounting disclosure as the slope

β (beta) = 0 (no relationship between the two variables). The results on the beta coefficient of the resulting model in table 4.53 shows that the constant α = 24.246 is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient β = 0.097 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. This implies that the null hypothesis β_1=0 is rejected and the alternative hypothesis $\beta_1 \neq 0$ is taken to hold implying that the model Y=24.246+0.097 (Identification of Environmental Liability) + e, is significantly fit. The model Quality of Accounting Disclosure = α + β (Identification of Environmental Liability) holds as suggested by the test above. This confirms that there is a positive linear relationship between identification of environmental liability and quality of accounting disclosure. Deegan and Gordon (1996) (Australia) analyzed the environmental disclosure practices of Australian corporate entities and found that there was a positive relationship between environmental sensitivity and the level of disclosure, and in some sensitive industries between environmental disclosure levels and firm size.

Table 4.53 Coefficient for Relationship between Identification of Environmental Liability and Quality of Accounting Disclosure

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	24.246	1.022		23.723	.000
Identification of Environmental Liability	.097	.048	.754	2.008	.000

a. Dependent Variable: Quality of Accounting Disclosure

4.8.4 Objective 4: The effect of measurement of environmental liability on quality of accounting disclosure of shipping lines in Nigeria.

Regression analysis was conducted to determine whether measurement of environmental liability was a significant determinant of quality of accounting disclosure. Regression results in table 4.49 indicate the goodness of fit for the regression between Measurement of Environmental Liability and Quality of Accounting Disclosure. The regression analysis shows a relationship R=0.734 and R^2=0.539. This shows that 53.9% of the variation change in the quality of accounting disclosure be explained by a unit change in measurement of environmental liability as shown in table 4.54. This is a strong relationship as the remaining percentage of 46.1% is explained by other variables namely identification of environmental cost, capitalization of environmental cost and identification of environmental liability. Li and McConomy (1999) found that Canadian companies with strong environmental commitment were able to adopt new environmental accounting standards quicker than companies with less environmental commitment, thereby enhancing credibility and reducing litigation risk.

Table 4.54 Model Summary for Measurement of Environmental Liability and Quality of Accounting Disclosure

R	R Square
.734[a]	.539

a. Predictors: (Constant), Measurement of environmental liability

F-test was further carried out to test the null hypothesis that there is no relationship between measurement of environmental liability and quality of accounting disclosure. Analysis of variance (ANOVA) was used to determine whether there is a regression relationship, between measurement of environmental liability and quality of accounting

disclosure. The ANOVA test in Table 4.55 shows that the significance of the F-statistic 0.000 is less than 0.05 meaning that null hypothesis is rejected and conclude that there is a relationship between measurement of environmental liability and quality of accounting disclosure. Liaqat (2006) carried out an empirical study to find out the Application of Contemporary Management Accounting Techniques in Indian industry and found a positive association between the adoption of activity based cost (ABC) and company characteristics (e.g. degree of customization, pressure of competition, business size).

Table 4.55 ANOVA results for Measurement of Environmental Liability versus Quality of Accounting Disclosure

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4085.587	1	4085.587	478.967	.000[b]
Residual	3480.315	408	8.530		
Total	7565.902	409			

a. Dependent Variable: Quality of Accounting Disclosure

b. Predictors: (Constant), Measurement of Environmental Liability

To test the significance of regression relationship between measurement of environmental liability and quality of accounting disclosure, the regression coefficients (β), the intercept (α), and the significance of all coefficients in the model were subjected to the t-test to test the null hypothesis that the coefficient is zero. The null hypothesis state that, β (beta) = 0, meaning there is no significant relationship between measurement of environmental liability and quality of accounting disclosure as the slope

β (beta) = 0 (no relationship between the two variables). The results on the beta coefficient of the resulting model in table 4.56 shows that the constant α = 24.247 is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient β = 0.082 is also significantly different from 0 with a p-value=0.000 which is less than 0.05.

This implies that the null hypothesis β_1=0 is rejected and the alternative hypothesis $\beta_1 \neq 0$ is taken to hold implying that the model Y=24.246+0.097 (Measurement of Environmental Liability) + e, is significantly fit. The model Quality of Accounting Disclosure = α + β (Measurement of Environmental Liability) holds as suggested by the test above. This confirms that there is a positive linear relationship between measurement of environmental liability and quality of accounting disclosure. Plumlee et al. examined the relationship between the quality of a firm's voluntary environmental disclosures and firm value by exploring the relationship between the components of firm value (cost of equity and future expected cash flows) and voluntary environmental disclosure quality. They documented an inverse association between voluntary disclosure quality and a firms cost of equity.

Table 4.56 Coefficient for Relationship between Measurement of Environmental Liability and Quality of Accounting Disclosure

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	24.247	0.942		25.939	.000
Measurement of Environmental Liability	.082	.041	.734	1.991	.000

a. Dependent Variable: Quality of Accounting Disclosure

4.9 Overall Regression Analysis

4.9.1 Overall Regression Model for Identification of Environmental cost, Capitalization of Environmental Cost, Identification of Environmental Liability, Measurement of Environmental Liability and Quality of Accounting Disclosure

The overall regression models for the relationship between the dependent variable quality of accounting disclosure and the independent variables Identification of Environmental Cost, Capitalization of Environmental Cost, Identification of Environmental Liability and Measurement of Environmental Liability is shown in table 4.52. The results indicate that R^2 = .964 and R = .982. R value points that a strong relationship between Identification of Environmental Cost, Capitalization of Environmental Cost, Identification of Environmental Liability and Measurement of Environmental Liability and Quality of Accounting Disclosure of Shipping Lines in Nigeria. R^2 indicates that explanatory power of the independent variables is 0.964. This

means that about 96.4% of the variation in quality of accounting disclosure is explained by the model of the study while 3.6% of the variation in quality of accounting disclosure is unexplained by the model. The multiple linear regression models are stated below as the equation shows the linear regression model of the independent variables against the dependent variable.

$$\mathbf{Y = \beta_0 + \beta_1 IEC + \beta_2 CEC + \beta_3 IEL + \beta_4 MEL}$$

Where Y = dependent variable –odds of Quality of disclosure

X_1 = identification of environmental cost (IEC)

X_2 = capitalization of environmental cost (CEC)

X_3 = identification of environmental liability (IEL)

X_4 = measurement of environmental liabilities (MEL)

β – Parameters to be estimated, while β_1, β_2, β_3, β_4 are coefficient of the independent variable.

Hypothesis for the multiple linear regression models:

H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

H_1: at least one of β_1, β_2, β_3, β_4, is not equal to 0.

From table 4.57, it is concluded that the relationship between the independent variables Identification of Environmental Cost, Capitalization of Environmental Cost, Identification of Environmental Liability and Measurement of Environmental Liability and Quality of Accounting Disclosure is so strong.

Table 4.57 Overall Regression Model on Identification of Environmental cost, Capitalization of Environmental Cost, Identification of Environmental Liability, Measurement of Environmental Liability

R	R Square
.982[a]	.964

a. Predictors: Identification of Environmental cost, Capitalization of Environmental Cost, Identification of Environmental Liability, Measurement of Environmental Liability

The ANOVA test in table 4.58 shows that the independent variables Identification of Environmental Cost, Capitalization of Environmental Cost, Identification of Environmental Liability and Measurement of Environmental Liability have a significant effect on quality of accounting disclosure since the p-value 0.000 is less than 0.05 meaning the null hypothesis is rejected and conclude that there is a relationship between all independent variables jointly and quality of accounting disclosure.

Table 4.58: ANOVA Results for Independent and Dependent Variables

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	279709.587	4	69927.397	2716.832	.000
Residual	10449.863	406	25.739		
Total	290159.450[d]	410			

a. Dependent Variable: Quality of Accounting Disclosure

A further test on the beta coefficients of the resulting model shows that Identification of Environmental cost, Capitalization of Environmental Cost, Identification of Environmental Liability, Measurement of Environmental Liability have a significant positive effect on quality of accounting disclosure with gradients 0.303, 0.179, 0.405 and 0.316 respectively with a p-value of 0.000 less than 0.05. The regression model was:

$$\mathbf{Y = \beta_0 + \beta_1 0.303\ (IEC) + \beta_2 0.179\ (CEC) + \beta_3 0.405(IEL) + \beta_4 0.316(MEL)}$$

This implies that for every unit increase in Identification of Environmental Cost there is an increase in Quality of Disclosure by 0.303, for every unit increase in Capitalization of Environmental Cost there is an increase in Quality of Accounting Disclosure by 0.179, for every unit increase in Identification of Environmental Liability there is an increase in Quality of Disclosure by 0.405 and for every unit increase in Measurement of Environmental Liability there is an increase in Quality of Accounting Disclosure by 0.316. Therefore, it is concluded that there are significant relationships between all the independent variables and the quality of accounting disclosure of shipping lines in Nigeria.

Table 4.59: Overall Regression Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Identification of Environmental Cost	.303	.042	.253	7.288	.000
Capitalization of Environmental Cost	.179	.040	.156	4.494	.000
Identification of Environmental Liability	.405	.050	.321	8.070	.000
Measurement of Environmental Liability	.316	.044	.270	7.192	.000

a. Dependent Variable: Quality of Accounting Disclosure

4.10 Hypothesis Tests

The study used multiple regression analysis to determine the linear statistical relationship between the independent and dependent variables. All the four null hypotheses as stated in chapter one of this study were tested using linear regression models, where the order in which the variables were entered is based on a statistical decision not a theory.

4.10.1 Hypothesis 1: There is no significant effect of identification of environmental cost on the quality on accounting disclosure on shipping lines in Nigeria

To test the significance of regression relationship between identification of environmental cost and quality of accounting disclosure, the regression equations were first obtained using the standard beta coefficients on the line of best fit. The study also carried out the t-test to each beta coefficients in the fitted regression models. The findings in Table 4.59 indicated that Identification of Environmental Cost positively and

significantly influence quality of accounting disclosure of Shipping Lines in Nigeria with β = 0.303 with p-value = 0.000 < 0.05. It implies that for every unit increase in Identification of Environmental Cost there is an increase in Quality of Accounting Disclosure by 0.303 units.

The result is in line with Neungruthai and Mula (2012) in their study on conceptual design for environmental and social cost identification and measurement system found a significant positive relationship between identification of environmental cost and quality of disclosure. The results of the study indicate that companies are intending to change to new management accounting practices while looking for ways to improve cost identification and measurement of environment and social impacts. Cohen (2008) conducted a study on Quality of Financial Reporting Choice: Determinants and Economic Consequences. The author investigates the determinants and economic consequences associated with firms' financial reporting choices. He also finds that higher proprietary costs are associated with a lower quality of financial information. The author finds no significant evidence that firms choosing to provide financial information of higher quality enjoy a lower cost of equity capital.

Botosan (1997), Botosan and Plumlee (2002), and Botosan, Plumlee, and Xie (2004) investigate Aggregate Disclosure's Direct Link to Cost of Equity Capital. Botosan (1997) limits the sample to the 1990 annual reports of companies in the machinery industry, develops a disclosure index based on disclosures in each firm's annual report, estimates cost of equity capital using an accounting-based valuation formula rooted in early work by Preinreich (1938) and Edwards and Bell (1961), and documents a negative association between disclosure level and cost of equity capital for those firms with a low analyst following.

4.10.2 Hypothesis 2: There is no significant effect of capitalization of environmental cost on the quality on accounting disclosure on shipping lines in Nigeria

To test the significance of regression relationship between capitalization of environmental cost and quality of accounting disclosure, the regression equations were first obtained using the standard beta coefficients on the line of best fit. The study also carried out the t-test to each beta coefficients in the fitted regression models. The findings in Table 4.59 indicated that Capitalization of Environmental Cost positively and significantly influence quality of accounting disclosure of Shipping Lines in Nigeria with β = 0.179 with p-value = 0.000 < 0.05. It implies that for every unit increase in Capitalization of Environmental Cost there is an increase in Quality of Accounting Disclosure by 0.179 units.

The result agrees with McElroy (2007) in his study on Environmental Remediation Costs: To Deduct or to Capitalize found that comparing the value "of the asset after the expenditure with the status of the asset before the condition arose necessitated the expenditure (i.e., before the land was contaminated by the taxpayer's hazardous waste)." If value increases, then the remediation costs must be capitalized. Mohamed and Faouzi (2014) examined the Effect of Corporate Environmental Disclosure on the Cost of Equity Capital for a sample of Tunisian firms over the period 2003-2011. The authors found that firms with better environmental disclosure scores exhibit cheaper equity financing. In particular, their findings suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity. Botosan *et al*. (2004) examine the Association between Disclosure Quality (both private and public) and Cost of Equity Capital at the Aggregate Disclosure Level. They capture the underlying quality of investors' public and private information sets from properties of financial analysts forecasts (which represent an ex posts reflection of the

consequences of all disclosure decisions). They find that an inverse relation exists between the quality of public disclosure and cost of equity capital, but this relation is more than offset by the positive relation that exists between the cost of equity capital and private disclosure quality.

4.10.3 Hypothesis 3: There is no significant effect of identification of environmental liability on the quality of accounting disclosure on shipping lines in Nigeria

To test the significance of regression relationship between identification of environmental liability and quality of accounting disclosure, the regression equations were first obtained using the standard beta coefficients on the line of best fit. The study also carried out the t-test to each beta coefficients in the fitted regression models. The findings in Table 4.59 indicated that Identification of Environmental Liability positively and significantly influence quality of accounting disclosure of Shipping Lines in Nigeria with β = 0.405 with p-value = 0.000 < 0.05. It implies that for every unit increase in Identification of Environmental Liability there is an increase in Quality of Accounting Disclosure by 0.405 units.

The result is supported by Leary (2011) in his study on Factors Influencing the Level of Environmental Liability Disclosure in 10k reports found that a comprehensive environmental disclosure index is used to measure the extent to which firms disclose environmental liability information. Freedman and Stangliano (1992) found that companies with better environmental disclosure track records experienced fewer declines in market valuation following the introduction of more stringent environmental legislation, than companies with poorer disclosure practices. Deegan and Gordon (1996) (Australia) analyzed the environmental disclosure practices of Australian corporate entities. Overall, they found an increase in environmental disclosures over the period 1980-1991, but the standard of the 1991 disclosures was not necessarily very impressive,

with an average of 186 words of self-laudatory material per annual report. Environmental lobby groups appeared to have an effect because there was a positive correlation between environmental sensitivity and the level of disclosure, and in some sensitive industries between environmental disclosure levels and firm size.

4.10.4 Hypothesis 4: There is no significant effect of measurement of environmental liability on the quality of accounting disclosure on shipping lines in Nigeria

To test the significance of regression relationship between measurement of environmental liability and quality of accounting disclosure, the regression equations were first obtained using the standard beta coefficients on the line of best fit. Before the multiple regression equations were used, F test was used to validate the test of significance of the overall regression. The study also carried out the t-test to each beta coefficients in the fitted regression models. The findings in Table 4.59 indicated that Measurement of Environmental Liability positively and significantly influence quality of accounting disclosure of Shipping Lines in Nigeria with $\beta = 0.316$ with p-value = 0.000 < 0.05. It implies that for every unit increase in Measurement of Environmental Liability there is an increase in Quality of Accounting Disclosure by 0.316 units.

The result concur with Li and McConomy (1999) who found that Canadian companies with strong environmental commitment were able to adopt new environmental accounting standards quicker than companies with less environmental commitment, thereby enhancing credibility and reducing litigation risk. Making adequate provisions for environmental liabilities also prevents the company from going bust or suddenly developing a serious cash flow problem. Fekrat *et al*. (1996) (US) studied the scope and accuracy of environmental disclosures made in corporate annual reports. Overall, the results indicated significant variations in environmental disclosures, and no clear support

for the voluntary disclosure hypothesis, as well as a lack of association between disclosure and environmental performance.

Plumlee et al. (2010) examined the relationship between the quality of a firm's voluntary environmental disclosures and firm value by exploring the relationship between the components of firm value (cost of equity and future expected cash flows) and voluntary environmental disclosure quality. The authors measured voluntary environmental disclosure quality using a disclosure index consistent with the Global Reporting Initiative disclosure framework and documented a positive relation between voluntary disclosure quality and firm value through both the cash flow and cost of capital components. Based on this analysis, they documented an inverse association between voluntary disclosure quality and a firms cost of equity.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The overall objective of this study was to determine the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The study explored the relationship between the independent variables; identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability with the dependent variable quality of accounting disclosure. This chapter summarizes the research findings on response rate, the general background information and the statistical analysis. Summary of discussions of specific objectives/research hypothesis has also been done including the assessment of the meaning of the results. The conclusions and recommendations relate directly to the specific research objectives.

5.2 Summary of Findings

The main purpose of the study was to establish the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The theoretical and empirical literature on environmental accounting and quality of accounting disclosure were reviewed. Detailed conceptual framework of the effect of adoption of environmental accounting and quality of accounting disclosure was formulated. The hypothesized effect was tested by the specific objectives of the study. Based on the conceptual framework and objectives of the study, a questionnaire was prepared and tested for validity and reliability using Cronbach's alpha through a pilot study. The independent variables were tested for multicollinearity and Durbin-Watson test was carried out to test the independence of the variables. Normality test was carried out on

the quality of accounting disclosure (dependent variable) using One-Sample Kolmogorov-Smirnov test. Descriptive and inferential statistics were conducted. Linearity test was done with the use of scatter plots to check the existence of the linear relationship and inferential statistical analysis was conducted for each variable. Multiple linear regressions were used to test the combined effect of all the independent variables.

5.2.1 Effect of identification of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria

The first objective of the study was to establish the effect of identification of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria. The study established that according 67.5% of the respondents, the company identified operation cost. The findings revealed that 72.2% of the respondents stated that the company set aside capital investment. Majority of the respondents (67.5%) indicated that environmental operating expenditures are tracked independently. The study established that 72.7% of the respondents indicated that the company set aside research and development cost. The results showed that most respondents (74.4%) indicated that the company has a team for environment administration and planning. Most respondents (67.5%) indicated that effective management accounting improves the identification of cost. The findings revealed that 69.5% of the respondents stated that the company has set aside recovery expenses. The study established that 67.5% of the respondents indicated that the company has set aside expenses for remediation measures.

The results of correlation showed that there was a positive significant linear relationship between identification of environmental cost and the quality of accounting disclosure. This relationship was illustrated by correlation coefficient of 0.648 at 0.01 significant levels and R Square was 42.0%. This shows that identification of environmental cost explains 42.0% of the variation in quality of accounting disclosure of shipping lines in

Nigeria. An F statistic of 295.460 indicated that the model was significant. This was supported by the quality of accounting disclosure value of 0.000 which was less than 0.05.

The significance of all coefficients in the model was subjected to t-test to test the null hypothesis that the coefficient is zero. The results on the beta coefficient of the resulting model shows that the constant $\alpha = 12.065$ is significantly different from 0, since the p-value = 0.000 is less than 0.05. The coefficient $\beta_1 = 0.605$ is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The t value for constant is 10.506, while the t value for identification of environmental cost is 12.511 which indicate they are significant. This indicated that the overall model applied can significantly predict outcome valuable. These findings led to the rejection of null hypothesis and accepted the alternative hypothesis that identification of environmental cost influences quality of accounting disclosure of shipping lines in Nigeria.

5.2.2 Effect of capitalization of environmental cost on the quality of accounting disclosure of shipping lines in Nigeria

In order to determine the extent to which capitalization of cost influences quality of disclosure, descriptive statistics and regression analysis were conducted. Majority of the respondents (74.9%) indicated that the company pays taxes of the environmental contamination. The findings revealed that75.9% of the respondents stated that the company incurs cost of draining waste from old tanks. Majority of the respondents (73.6%) indicated that investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. The study established that 72.4% of the respondents indicated that the company incurs cost to transfer waste to new composite material tanks. The results showed that most respondents (73.6%) indicated expenditure that repairs a defect exists prior to acquisition. Most respondents (74.6%)

indicated that the company allows capitalization of deductions of any contamination of property. The findings revealed that 73.6% of the respondents stated that the company incurs costs to remove old steel underground storage.

The results of correlation showed that there was a positive significant linear relationship between capitalization of environmental cost and quality of accounting disclosure. This relationship was illustrated by correlation coefficient of 0.678 at 0.01 significant levels and R Square was 46.0%. This shows that capitalization of environmental cost explains 46.0% of the variation in quality of accounting disclosure of shipping lines in Nigeria. An F statistic of 347.544 indicated that the model was significant. This was supported by the quality of accounting disclosure value of 0.000 which was less than 0.05. The significance of all coefficients in the model was subjected to t-test to test the null hypothesis that the coefficient is zero.

The results on the beta coefficient of the resulting model shows that the constant α = 14.500 is significantly different from 0, since the p-value = 0.000 is less than 0.05. The coefficient β_1= 0.492 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The t value for constant is 12.120, while the t value for capitalization of environmental cost is 9.952 which indicate they are significant. This indicated that the overall model applied can significantly predict outcome valuable. These findings led to the rejection of null hypothesis and accepted the alternative hypothesis that capitalization of environmental cost influences quality of accounting disclosure of shipping lines in Nigeria.

5.2.3 Effect of identification of environmental liability on the quality of accounting disclosure of shipping lines in Nigeria

The third objective of the study was to establish the effect of identification of environmental liability on the quality of accounting disclosure of shipping lines in

Nigeria. Majority of the respondents (76.3%) indicated that the company identify and assess all potential clean-up sites. The findings revealed that 74.8% of the respondents stated that the company has a responsibility of each cross functional area been identified. Majority of the respondents (72%) indicated that detailed accounting standards relating to environmental issues facilitate more complete disclosure. The study established that 73% of the respondents indicated that the company has a process for proactive internal identification of sites. The results showed that most respondents (71.7%) indicated that the company considers disclosure of future clean-up costs. Most respondents (74.2%) indicated that the company takes a proactive approach to identification and assessment that will avoid inefficiencies.

The results of correlation showed that there was a positive significant linear relationship between identification of environmental liability and quality of accounting disclosure. This relationship was illustrated by correlation coefficient of 0.754 at 0.01 significant levels and R Square was 57.0%. This shows that identification of environmental liability explains 57.0% of the variation in quality of accounting disclosure of shipping lines in Nigeria. An F statistic of 540.896 indicated that the model was significant. This was supported by the quality of accounting disclosure value of 0.000 which was less than 0.05. The significance of all coefficients in the model was subjected to t-test to test the null hypothesis that the coefficient is zero.

The results on the beta coefficient of the resulting model shows that the constant α = 24.246 is significantly different from 0, since the p-value = 0.000 is less than 0.05. The coefficient β_1= 0.097 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The t value for constant is 23.723, while the t value for identification of environmental liability is 2.008 which indicate they are significant. This indicated that the overall model applied can significantly predict outcome valuable. These findings led to the rejection of null hypothesis and accepted the alternative hypothesis that

identification of environmental liability influences quality of accounting disclosure of shipping lines in Nigeria.

5.2.4 Effect of measurement of environmental liability on the quality of accounting disclosure of shipping lines in Nigeria

The study attempted to investigate the effect of measurement of environmental liabilities on quality of accounting disclosure on shipping lines in Nigeria. Majority of the respondents (72.4%) indicated that the company allocated financial resources for liability identification. The findings revealed that 74.1% of the respondents stated that the company has allocated manpower resources for liability identification. Majority of the respondents (76.4%) indicated that the company has invested in training auditors for liability identification. The study established that 73.4% of the respondents indicated that the company has complied with requirements for liability identification. The results showed that most respondents (70.5%) indicated that the company considers revises estimates of past liability based on anticipated changes in regulations. Most respondents (70.2%) indicated that the company keeps records of all environmental liabilities.

The results of correlation showed that there was a positive significant linear relationship between measurement of environmental liability and quality of accounting disclosure. This relationship was illustrated by correlation coefficient of 0.734 at 0.01 significant levels and R Square was 53.9%. This shows that measurement of environmental liability explains 53.9% of the variation in quality of accounting disclosure of shipping lines in Nigeria. An F statistic of 478.967 indicated that the model was significant. This was supported by the quality of accounting disclosure value of 0.047 which was less than 0.05.

The significance of all coefficients in the model was subjected to t-test to test the null hypothesis that the coefficient is zero. The results on the beta coefficient of the resulting

model shows that the constant α = 24.247 is significantly different from 0, since the p-value = 0.000 is less than 0.05. The coefficient β_1= 0.082 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The t value for constant is 25.939, while the t value for identification of environmental liability is 1.991 which indicates they are significant. This indicated that the overall model applied can significantly predict outcome valuable. These findings led to the rejection of null hypothesis and accepted the alternative hypothesis that measurement of environmental liability influences quality of accounting disclosure of shipping lines in Nigeria.

5.3 Conclusion

Based on the findings it was concluded that identification of environmental cost is a critical determinant to quality of accounting disclosure. This study determined that identification of environmental cost enhance quality of accounting disclosure of shipping lines in Nigeria. The regression analysis showed that there is a positive joint relationship R=0.648 between the independent variable identification of environmental cost and quality of accounting disclosure. R-Square = 0.420 meaning that identification of environmental cost explains 42.0% of quality of accounting disclosure. Further analysis indicated that coefficient of identification of environmental cost and quality of accounting disclosure is significant. It can be concluded from this study that there exists a positive significant relationship between identification of environmental cost and quality of accounting disclosure of on shipping lines in Nigeria.

The study concludes that capitalization of environmental cost influences the quality of accounting disclosure of shipping lines in Nigeria. It can be concluded from this study that there exists a positive and significant relationship between capitalization of environmental cost and quality of accounting disclosure. The regression analysis showed that there is a positive joint relationship R=0.648 between the independent variable

capitalization of environmental cost and quality of accounting disclosure. R-Square =0.460 meaning that capitalization of environmental cost explains 46.0% of quality of accounting disclosure. Further analysis indicated that coefficient of capitalization of environmental cost and quality of accounting disclosure is significant. This implies that capitalization of environmental cost were statistically significant in explaining the quality of accounting disclosure of shipping lines in Nigeria.

Pertaining to identification of environmental liability, the study concluded that there exist a strong relationship between identification of environmental liability and quality of accounting disclosure. The regression analysis showed that there is a positive joint relationship R=0.754 between the independent variable identification of environmental liability and quality of accounting disclosure. R-Square =0.570 meaning that identification of environmental liability explains 57.0% of quality of accounting disclosure. Further analysis indicated that coefficient of identification of environmental liability and quality of accounting disclosure is significant. This implies that identification of environmental liability were statistically significant in explaining the quality of accounting disclosure of shipping lines in Nigeria.

The study concludes that the study concluded that there exist a strong relationship between measurement of environmental liability and quality of accounting disclosure. The regression analysis showed that there is a positive joint relationship R=0.734 between the independent variable measurement of environmental liability and quality of accounting disclosure. R-Square =0.539 meaning that measurement of environmental liability explains 53.9% of quality of accounting disclosure. Further analysis indicated that coefficient of measurement of environmental liability and quality of accounting disclosure is significant. It can be concluded from this study that there exists a positive significant relationship between measurement of environmental liability and quality of accounting disclosure of shipping lines in Nigeria.

5.4 Recommendations

Companies are to decide in their discretion which expenditures or costs should be included under the environmental expenses or costs. Operating expenses have defined expenses associated with environmental measures to primarily include production related costs and product research and development expenses that are solely incurred for environmental protection as distinct from product improvement.

Environmental costs should be capitalized or expensed as the most controversial subjects for accountants as well as financial analyst. Companies should capitalize environmental cost if they are considered to be a cost of the expected future benefits from the assets regardless of whether there is any increase in economic benefits. Cost incurred to prevent future environmental impacts should be capitalized (treated as an asset, providing expected future economic benefits) whereas clean up costs for past environment damage should be expenses. Capitalization of cost should be allowed if the costs can contribute to additional future economic benefits beyond the originally assessed standard of performance.

Companies should recognize liability in the balance sheet when it is probable that an outflow of resources embodying economic benefits will result from the settlement of a present obligation. Environmental liabilities should be recognized in the financial statement if they are material and if the liabilities or events leading to the liability are probable and can be reliably measured.

Companies should consider the current laws and regulations, extent of regulatory involvement, prior legal, economic, political and scientific experience, the complexity of the problem, existing technologies and available technological experience. Furthermore, information available prior to assurance of the financial statements indicates that it is

probable that an asset had been impaired or a liability incurred at the date of the financial statements should be considered.

5.5 Areas for Further Research

This study only investigated the effect of environmental accounting on the quality of accounting disclosure of shipping lines in Nigeria. The study was confined to four variables namely identification of environmental cost, capitalization of environmental cost, identification of environmental liability and measurement of environmental liability. Further empirical work is encouraged to test the effect of environmental accounting on the quality of accounting disclosure on other sector of the economy.

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APPENDIX I

RE: ACADEMIC RESEARCH PROJECT

I am a Phd student at Jomo Kenyatta University of Agriculture and Technology Juja Main Campus conducting a research titled "***The effect of Environmental Accounting on the Quality of Accounting Disclosures of Shipping Lines in Nigeria".*** This study is undertaken in partial fulfillment of the requirements for the award of Ph.D Degree in Accounting.

A questionnaire has been designed and will be used to gather relevant information to address the research objectives of the study. The purpose of writing to you is to kindly request you to grant me permission to collect information on this important subject from randomly selected members of staff.

Please note that the study will be conducted as an academic research and the information provided will be treated in strict confidence. Strict ethical principles will be observed to ensure confidentiality and the study outcomes and reports will not include reference to any individual

Your acceptance will be highly appreciated.

Yours Sincerely

LAWAL Babatunde Akeem

Research Student

Appendix II: Questionnaire

This questionnaire has statements assessing ***the effect of environmental accounting on the quality of accounting disclosures of shipping lines in Nigeria***. Kindly take few minutes to complete the questionnaire as guided. Your responses will be handled confidentially and ethically.

Thank you for agreeing to participate in this academic study

SECTION A: GENERAL /DEMOGRAPHIC DATA

1. Kindly indicate your gender
    a) Male ☐
    b) Female ☐
2. Please indicate the highest level of education you have ever attained

    a) Secondary level ☐

    b) College level ☐

    c) University level ☐

    d) Post graduate level ☐

3. How many years have your work in the shipping line?

    a) Less than 2 years ☐

    b) 3 to 5 years ☐

    c) Over 5 years ☐

4. Indicate your position?

    a) Manager ☐

b) Chief Accountant ☐

c) Auditor ☐

Section B: Identification of Environmental Cost

This section aims at determining identification of environmental cost. Please indicate your agreement or otherwise with the following statements using the likert scale below.

Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
1	My company has identified operation cost.					
2	My company examines the relation between social disclosures in annual reports and the cost of equity capital.					
3	Identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risk.					
4	My company has set aside research and development cost.					
5	My company has a team for environment administration and planning.					
6	Effective management accounting improves the identification of cost.					
7	My company has set aside recovery expense.					
8	My company has set aside expenses for remediation measures.					

9.) To what extent does your company generate environmental cost information?

a.) Very low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

10.) Which of the following statements (a - e) best describe how you generate this information:

a.) Generated as part of your general ledger system.

b.) Generated as part of your management accounting system, separate from your general ledger system.

c.) Generated by a free standing system, using data electronically transferred from your general ledger or management accounting system.

d.) Generated by a free standing system, which does not directly access data in other systems, including non-automated methods.

e.) Generated by some other type of system.

11.) Who are the recipients of the information?

a.) Corporate Dept. only ☐ b.) Management Accounting System Dept. ☐

(c.) Mgt. accounts & Accounts Dept. ☐ .) Accounts Dept. only ☐

(e.) Environmental Dept. only ☐

12.) What internal barriers affect the ability of the company to collect environmental cost information?

a.) Absence of classification of costs on environmental bases (b.) Training in Environmental

Accounting is yet to take place (c.) Environmental Accounting is yet to be enforced.

(d.) Inadequate manpower resources (e) Others

(Specify please)

13.) To what level does the company make estimates of the less tangible environmental costs or benefits such as liabilities from past operations, the indirect cost of regulation, the benefit of environmental pro-activity, etc?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

Section C: Capitalization of Environmental Cost

This section aims at determining capitalization of environmental cost. Please indicate your agreement or otherwise with the following statements using the likert scale below.

Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
1	My company pays taxes of the environmental contamination					
2	My company incurs cost of draining the waste from the old tanks					
3	Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity					
4	My company incurs cost to transfer the waste to new composite material tanks					
5	An expenditure that repairs a defect that exists prior to acquisition is capitalized					
6	My company allows capitalization of deductions of any contamination of property					
7	My company incurs costs to remove the old steel underground storage tanks					

8.) To what extent does your company set aside expenses for remediation measures?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

9.) Does your company clearly identify wastes where appropriate?

a.) Yes ☐ (b.) No ☐ c.) Sometimes ☐

10.) To what extent does quality of investors' information influences the cost of equity capital?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

11.) Does content analysis describes the practices of environmental disclosure in your company?

a.) Yes ☐ (b.) No ☐

Section D: Identification of Environmental Liability

This section aims at determining identification of environmental liability. Please indicate your agreement or otherwise with the following statements using the likert scale below.

Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

No	**Statement**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
		1	**2**	**3**	**4**	**5**
1	My company identify & assess all potential clean-up sites					
2	My company has a responsibility of each cross-functional area been identified.					
3	Detailed accounting standards relating to environmental issues facilitate more complete disclosure.					
4	My company has a process for proactive internal identification of sites.					
5	My company considers disclosure of future cleanup costs.					
6	My company takes a proactive approach to identification and assessment that will avoid the inefficiencies.					

7.) How often does your company undertake review of current standards and practices with regards to recognition, and measurement of environmental related liabilities?

a.) Regularly ☐ (b.) Rarely ☐

8.) Does your company use disclosure index to measure the extent to which environmental liability information are disclosed?

a.) Yes ☐ (b.) No ☐ c.) Sometimes ☐

9.) Does your company compile environmental disclosure index based on relevant authoritative guidance contained in the regulation?

a.) Yes ☐ (b.) No ☐ c.) Sometimes ☐

10.) To what extent does your company review current standards and practices with regards to disclosure of environmental liabilities in corporate financial statement?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

11.) Does your company report information on contingent environmental liabilities in their financial reports?

a.) Yes ☐ (b.) No ☐ c.) Sometimes ☐

Section E: Measurement of Environmental Liabilities

This section aims at determining measures of liabilities. Please indicate your agreement or otherwise with the following statement using the likert scale below.

Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree.

No	**Statement**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
		1	**2**	**3**	**4**	**5**
1	The company has allocated adequate financial resources for liability identification.					
2	The company consistently report on environmental matters in their financial statements.					
3	There exists a relationship between the components of a firm value and voluntary environmental disclosure.					
4	The company has complied with requirements for liability identification.					
5	The company revises estimates of past liability based on anticipated changes in regulations.					
6	The company keeps records of all environmental liabilities.					

7.) Does your company consistently report on environmental matters in the financial statements?

a.) Yes ☐ (b.) No ☐

8.) How often does your company adopt new environmental accounting standards so as to enhance credibility and reduce litigation risk?

a.) Regularly ☐ (b.) Rarely ☐

9.) To what extent has external legislation compel your company to integrate environmental issues into their strategic planning process?

a.) Very Low ☐ (b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

10.) Does your company adopt traditional and contemporary management accounting practices?

a.) Yes ☐ (b.) No ☐

11.) To what extent does your company uses a disclosure index consistent with global reporting initiative in measuring liabilities?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

Section E: Quality of Accounting Disclosure

This section aims at determining quality of disclosure. Please indicate your agreement or otherwise with the following statements using the likert scale below.

Key: 1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree.

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
1	The company sets out its environmental policy and develops information systems for monitoring its performance.					
2	The company engages more actively in environmental disclosure in its annual report.					
3	Financial information is aggregated and classified according to standard disclosure formats.					
4	The company publishes its annual report with timely and reliable information useful for making efficient and effective decision.					
5	The financial information presented is credible and this enhances the reliability of the financial statements.					
6	Financial statements are prepared in accordance with disclosure requirements.					

7.) Does your company report disclosures on environmental issues in its financial statements?

a.) Yes ☐ (b.) No ☐

8.) How often does your company disclose adequate and reliable information necessary to penetrate the market?

a.) Regularly ☐ (b.) Rarely ☐

9.) To what extent does your company disclose mandatory requirements and significantly disclose more voluntary information that enables them compete globally?

a.) Very Low ☐ b.) Low ☐ c.) Neither High nor Low ☐ High ☐

(e.) Very High ☐

10.) Do managers disclose information about the value of the firm?

a.) Yes ☐ (b.) No ☐

11.) Does financial regulation imposes a considerable amount of mandatory reporting via a variety of regulated financial reports?

a.) Yes ☐ (b.) No ☐

12.) Has your company complied and adopted the international financial reporting standard in the preparation and presentation of financial statements?

a.) Yes ☐ (b.) No ☐

13.) What techniques are used to evaluate the feasibility of environmental projects?

a.) Profitability Index (b.) Return on Total Assets (c.) NPV (d.) IRR (e.) Payback period

14.) Does your company disclose information on environmental accounting?

a.) Yes ☐ (b.) No ☐

APPENDIX III

FACTOR ANALYSIS FOR IDENTIFICATION OF ENVIRONMENTAL COST

Items	Factor loading
My company has set aside capital investment.	.829
To what extent does your company generate environmental cost information?	.829
To what level does the company make estimates of the less tangible environmental costs or benefits such as liabilities from past operations, the indirect cost of regulation, the benefit of environmental pro-activity, etc?	.829
My company has identified operation cost.	.815
Effective management accounting improves the identification of cost.	.815
My company has set aside expenses for remediation measures.	.815
My company has a team for environment administration and planning.	.661
My company has set aside research and development cost.	.650
Environmental operating expenditures are tracked independently of other operating expenditure.	.578
Who are the recipients of the information?	.444
Which of the following statements (a - e) best describe how you generate this information:	.439
What internal barriers affect the ability of the company to collect environmental cost information?	.438
My company has set aside recovery expense.	.421

CRONBACH'S ALPHA FOR IDENTIFICATION OF ENVIRONMENTAL COST

Cronbach's Alpha	Number of Items
0.889	13

APPENDIX IV

FACTOR ANALYSIS FOR CAPITALIZATION OF ENVIRONMENTAL COST

Items	Factor loading
To what extent does quality of investors' information influences the cost of equity capital?	.858
Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity	.841
An expenditure that repairs a defect that exists prior to acquisition is capitalized	.800
My company allows capitalization of deductions of any contamination of property	.777
My company pays taxes of the environmental contamination	.777
To what extent does your company set aside expenses for remediation measures?	.749
My company incurs costs to remove the old steel underground storage tanks	.572
My company incurs cost to transfer the waste to new composite material tanks	.540
My company incurs cost of draining the waste from the old tanks	.486

CRONBACH'S ALPHA

Cronbach's Alpha	Number of Items
0.880	9

APPENDIX V

FACTOR ANALYSIS FOR IDENTIFICATION OF ENVIRONMENTAL LIABILITY

Items	Factor loading
To what extent does your company review current standards and practices with regards to disclosure of environmental liabilities in corporate financial statement?	.862
My company has a responsibility of each cross-functional area been identified	.862
Detailed accounting standards relating to environmental issues facilitate more complete disclosure	.584
My company has a process for proactive internal identification of sites	.567
My company identify & assess all potential clean-up sites	.542
My company considers disclosure of future cleanup costs at the identification	.505
My company take a proactive approach to identification and assessment that will avoid the inefficiencies	.494

CRONBACH'S ALPHA

Cronbach's Alpha	Number of Items
0.752	7

APPENDIX VI

FACTOR ANALYSIS FOR MEASUREMENT OF ENVIRONMENTAL LIABILITY

Item	Factor loading
To what extent does your company uses a disclosure index consistent with global reporting initiative in measuring liabilities?	.885
The company revises estimates of past liability based on anticipated changes in regulations.	.885
The company has allocated financial resources for liability identification	.869
The company has allocated manpower resources for liability identification	.742
The company keeps records of all environmental liabilities.	.724
The company has complied with requirements for liability identification	.537
The company has invested in training auditors for liability identification	.459
To what extent has external legislation compel your company to integrate environmental issues into their strategic planning process?	.413

CRONBACH'S ALAPHA

Cronbach's Alpha	Number of Items
0.847	8

APPENDIX VII

FACTOR ANALYSIS FOR QUALITY OF DISCLOSURE

Item	Factor loading
To what extent does your company disclose mandatory requirements and significantly disclose more voluntary information that enables them compete globally?	.869
What techniques are used to evaluate the feasibility of environmental projects?	.848
Financial information is aggregated and classified according to standard disclosure formats	.785
The company engages more actively in environmental disclosure in its annual report.	.771
The financial information presented is credible and this enhances the reliability of the financial statements	.676
Financial statements are prepared in accordance with disclosure requirements.	.591
The company sets out its environmental policy and develops information systems for monitoring its performance.	.582
The company publishes its annual report with timely and reliable information useful for making efficient and effective decision.	.556

CRONBACH'S ALPHA

Cronbach's Alpha	Number of Items
0.861	8

APPENDIX VIII: Sample Frame

S/N	COMPANIES	Legal Department	Finance & Account	Technical & Marine
1.	3MO Shipping & Trading Company Limited	5	4	4
2.	Advanced International Merchants Limited	4	5	5
3.	African European Lines (Nig.) Limited	7	4	4
4.	African European Lines Nigeria Limited	6	4	5
5.	Air Sea Freighter Limited	5	5	5
6.	Alan Caray Technical Ltd.	6	4	4
7.	Antonio Assaf & Sons (Nig.) Limited	7	4	4
8.	Antwerp Shipping Nigeria Limited	5	5	4
9.	Ayolas Cargo & General Services Limited	6	5	5
10.	Balaquer Limited	6	4	4
11.	Batun Investment Nig. Ltd.	5	4	4
12.	BHN Transport & Logistics Limited	6	4	5
13.	Blue Star Shipping Line Limited	7	5	5
14.	Captino Global Shipping Company Limited	6	5	4
15.	Casablanca Shipping Agency	5	4	5
16.	China Shipping	4	5	5
17.	China Shipping & Container Line (CSC)	5	4	4
18.	Contraco (Nig.) Limited	5	4	4
19.	COSCO	5	5	4
20.	Cross Traders	6	4	5
21.	Deino Maritime Services	7	4	4
22.	Delmas (Nig.) Limited	5	4	4
23.	Denca Services Limited	4	4	5
24.	DLB Concerns Limited	6	5	5

25.	DSR Senator Lines	4	5	5
26.	Dully Shipping & Trading Limited	5	5	5
27.	East Atlantic Cargo & Marine Services Limited	6	4	4
28.	Equitrail marine Oil & Gas Company Limited	4	5	4
29.	Fedrick Marine Services Limited	5	4	4
30.	Fesco Marine Services, Ltd.	6	4	5
31.	Fidepat International Co. Limited	6	4	4
32.	Fleming International Agencies Limited	5	4	4
33.	Frang International Ltd.	4	5	5
34.	Franig International Limited	5	4	4
35.	Frikden Shipping Investment Limited	4	5	5
36.	Gasop Nig. Limited	5	4	4
37.	Gold Star Lines	6	4	4
38.	Green West Africa Nig. Limited	7	4	5
39.	Grimaldi	4	4	4
40.	Gulf Agency & Shipping (Nig.) Limited	6	4	4
41.	Gus Mek Bay (GMB) Nigeria Limited	5	5	5
42.	Hamada Shipping Limited	6	4	4
43.	Investment Keepers Services Limited	4	4	5
44.	Ivory Marine & Oilfield Services Limited	5	5	5
45.	Jafana Ventures Nigeria Limited	6	5	4
46.	Jaros Shipping Company Limited	4	4	4
47.	Jetro Shipping Limited	6	4	4
48.	JNAX	7	5	5
49.	Jotransitos Nigeria Limited	5	5	4
50.	Kanapex Nigeria Lmited	5	4	4
51.	Kein Hung	4	5	4
52.	Kerildbert Holdings Limited	5	4	4

53.	Lat Best Venture Limited	3	5	4
54.	Mabail Nigeria Limited	4	4	4
55.	Maersk Line	5	4	4
56.	Majose (Nig.) Enterprises Limited	4	5	4
57	Mannah Nig. Limited	3	4	4
58.	Marine & Oil International Limited	6	5	5
59.	Maskime Maritime Services Limited	5	4	4
60.	Messina	5	4	4
61.	Michelle Nigeria Limited	4	5	4
62.	Mitsuio S. K.	5	4	4
63.	MSC Line	4	4	4
64.	NAl/Comet Shipping Line	5	5	5
65.	N-Fizah Investment Limited	4	5	4
66.	O.T. Africa	5	4	4
67.	Ocean Blocks Limited	5	4	4
68.	Ocean Handlers International Limited	4	5	5
69.	Oladayo International Agencies Limited	5	5	4
70.	P & O Nedlloyd	4	4	4
71.	Peewee Marine Limited	4	5	4
72.	Petrodel Resources Maritime Limited	5	4	4
73.	Petroleum Projects Intermodal (PPI) Limited	4	5	5
74.	PIL	5	5	4
75.	Polmaz Limited	4	4	4
76.	Prize International Limited	4	5	5
77.	Progress Marine Limited	4	4	4
78.	Quality Freight Agency Limited	5	5	5
79.	Sahara Sea Support Services Limited	5	4	4
80.	SDV	4	5	4

81.	Silver Ocean Shipping Company Limited	5	4	4
82.	Skanga Oil Limited	6	5	4
83.	Stars Investment Co. Ltd.	5	4	4
84.	Sundersons Limited	4	5	4
85.	Temtum Global Services, Limited	5	5	5
86.	Tha Shipping & Marine Service Limited	4	5	5
87.	Tokke Maritime Services Limited	5	4	4
88.	Torm Lines	4	5	4
89.	Trans Oceanic Shipping Ltd	5	4	4
90.	Transmarine Shipping Services Nig. Limited	4	5	5
91.	Tru-Sell Ventures Limited	4	4	4
92.	United Africa Lines (NAL)	5		
93	VTN Dredging Limited	5	5	5
94.	WAL	4	4	4
95.	Wolid international Services Limited	5	5	4
96.	World Link Travel Agencies	4	5	5
97	Socar Talamiz Limited	5	4	4
98.	Michelle Nig. Limited	4	4	4
99	BHN Transport & Logistics Limited	4	5	5
100	Carldon International Agences	5	4	4
101	Trans Atlantic Shipping & Transport Agencies	4	4	4
	Total Target Population	497	444	433

Appendix IX: Registered Shipping Companies

LIST OF SHIPPING COMPANIES IN NIGERIA S/N	COMPANY	AGENT	ADDRESS
1.	3MO Shipping & Trading Company Limited	3MO Shipping & Trading Company Limited	Aquarius Block, 1st Floor, 1 Commercial Road, Eleganza, Plaza, Apapa Lagos
2.	Advanced International Merchants Limited	Advanced International Merchants Limited	22, Oduyemi Street, Anifowoshe, Ikeja
3.	African European Lines (Nig.) Limited	African European Lines (Nig.) Limited	9, Creek Road, Apapa
4.	African European Lines Nigeria Limited	African European Lines Nigeria Limited	9, Creek Road, Apapa
5.	Air Sea Freighter Limited	Air Sea Freighter Limited	213 Aba Road, Opp. Shell RA, Trans Amadi Port Harcourt
6.	Alan Caray Technical Ltd.	Alan Caray Technical Limited	11, Wharf Road, Apapa Lagos
7.	Antonio Assaf & Sons (Nig.) Limited	Antonio Assaf & Sons (Nig.) Limited	41/43 Bombay Crescent, Apapa Lagos
8.	Antwerp Shipping Nigeria Limited	Antwerp Shipping Nigeria Limited	1, Commercial Road, 1st Floor Leo Block, Eleganza Plaza, Apapa
9.	Ayolas Cargo & General Services	Ayolas Cargo & General Services	129, Agege Motor Road, Alakija, Idi-Oro Lagos

	Limited	Limited	
10.	Balaquer Limited	Balaquer Limited	Aquarius Block, 2nd Floor, Eleganza Plaza, 1, Commercial Rd. Apapa
11.	Batun Investment Nig. Ltd.	Batun Investment Nig. Ltd.	1, Aerodrome Road, Eleganza Plaza, Apapa.
12.	BHN Transport & Logistics Limited	BHN Transport & Logistics Limited	Plot 018 Trans Amadi Ind. Layout, P/Harcourt
13.	Blue Star Shipping Line Limited	Blue Star Shipping Line Limited	24, Creek Road, Apapa, Lagos
14.	Captino Global Shipping Company Limited	Captino Global Shipping Company Limited	AO 41/42 Enugu Plaza, trade Fair Complex, Badagry Exp.Way Lagos
15.	Casablanca Shipping Agency	Casablanca Shipping Agency	8, Olofin Street, Apapa
16.	China Shipping	Cross Marine Services	28 Burma Road, Apapa
17.	China Shipping & Container Line (CSC)	Cross Marine Services Limited	28 Burma Road, Apapa
18.	Contraco (Nig.) Limited	Contraco (Nig.) Limited	Suit 8D Princes Court, Ahmed Onibudo Street Victoria Island, Lagos
19.	COSCO	SDV	26, Creek Road, Apapa
20.	Cross Traders	Cross Marine Services	28 Burma Road, Apapa
21.	Deino Maritime Services	Deino Maritime Services	Eleganza Plaza, Aquarius Block, Ground Floor, 1, Commercial Road, Apapa Lagos

22.	Delmas (Nig.) Limited	Wasa Delmas	26, Creek Road, Apapa
23.	Denca Services Limited	Denca Services Limited	37, Alh, Yusuf Adebayo Street, Olodi Apapa
24.	DLB Concerns Limited	DLB Concerns Limited	9A Adeola Odeku, V/I
25.	DSR Senator Lines	Alraine Shipping Agency	4B Balogun Omidiora Road (Former Hinderer Street, Apapa, Lagos)
26.	Dully Shipping & Trading Limited	Dully Shipping & Trading Limited	28, Palace Road, Olodi Apapa Lagos
27.	East Atlantic Cargo & Marine Services Limited	East Atlantic Cargo & Marine Services Limited	1, Station Road, Town Port Harcourt
28.	Equitrail marine Oil & Gas Company Limited	Equitrail marine Oil & Gas Company Limited	30/32 Creek Road, End Floor, Apapa Lagos
29.	Fedrick Marine Services Limited	Fedrick Marine Services Limited	48/50 Rumuolumini Road, Off Wempey Junction, Rumueprikom, Port Harcourt
30.	Fesco Marine Services, Ltd.	Fesco Marine Services, Limited	16, Warehouse Road Apapa
31.	Fidepat International Co. Limited	Fidepat International Co. Limited	Okoi Arikpo House, 5, Idowu Taylor Street, V/island, lagos
32.	Fleming International Agencies Limited	Fleming International Agencies Limited	56/58 Opebi Road, Ikeja
33.	Frang International Ltd.	Frang International Ltd.	33, Creek Road, Apapa

34.	Franig International Limited	Franig International Limited	33, Creek road, Apapa Lagos
35.	Frikden Shipping Investment Limited	Frikden Shipping Investment Limited	12, Ashabi Shoniyi Street, Ijeshatedo S/Lere
36.	Gasop Nig. Limited	Gasop Nig. Limited	19B Birabi Old GRA Phase 1, Port Harcourt
37.	Gold Star Lines	Lagos & Niger Shipping Agency	4, Creek Road, Apapa
38.	Green West Africa Nig. Limited	Green West Africa Nig. Limited	68B Perekule Road, GRA II Port Harcourt
39.	Grimaldi	Roro Oceanic	17, Burma Road, Apapa
40.	Gulf Agency & Shipping (Nig.) Limited	Gulf Agency & Shipping (Nig.) Limited	14, Creek Road, Apapa
41.	Gus Mek Bay (GMB) Nigeria Limited	Gus Mek Bay (GMB) Nigeria Limited	33 Creek road, Ibru Building, Apapa Lagos
42.	Hamada Shipping Limited	Hamada Shipping Ltd.	1, Commercial Road, Eleganza Building, Apapa
43.	Investment Keepers Services Limited	Investment Keepers Services Limited	1/3 Creek Road, Apapa
44.	Ivory Marine & Oilfield Services Limited	Ivory Marine & Oilfield Services Limited	149/153, Broad Street, Lagos
45.	Jafana Ventures Nigeria Limited	Jafana Ventures Nigeria Limited	40, Calcuta Crescent, Apapa Lagos
46.	Jaros Shipping Company Limited	Jaros Shipping Company Limited	2B Burma Road, Apapa Lagos
47.	Jetro Shipping Limited	Jetro Shipping	21, Warehouse Road,

		Limited	Apapa
48.	JNAX	Panalpina Nig. Limited	4, Creek Road, Apapa
49.	Jotransitos Nigeria Limited	Jotransitos Nigeria Limited	8/10, Broad Street, Lagos
50.	Kanapex Nigeria Lmited	Kanapex Nigeria Lmited	175, NAHCO Office Complex, Ikeja Lagos
51.	Kein Hung	Elder Dempster Agency	34 Wharf Road, Apapa
52.	Kerildbert Holdings Limited	Kerildbert Holdings Limited	L/C Prince Court, 37, Ahmed Onibudo Street, V/Island Lagos
53.	Lat Best Venture Limited	Lat Best Venture Limited	1, Commercial Road, Aquarius Block, Eleganza Apapa
54.	Mabail Nigeria Limited	Mabail Nigeria Limited	46, Burma road, Apapa
55.	Maersk Line	Maersk Nigeria Limited	121 Louis Solomon Close, V/Island, Lagos
56.	Majose (Nig.) Enterprises Limited	Majose (Nig.) Enterprises Limited	75, Olorunshogo Street, Mushin Lagos
57.	Mannah Nig. Limited	Mannah Nig. Limited	46, Burma Road, Ground Floor, Apapa Lagos.
58.	Marine & Oil International Limited	Marine & Oil International Limited	26, Norman Williams Street, S/W Ikoyi, Lagos
59.	Maskime Maritime Services Limited	Maskime Maritime Services Limited	50, Napex Suite, Off American Embassy, Eleke Crescent, V/Island
60.	Messina	Comet Shipping	4B Balogun Omidiora

		Agency	Road (Former Hinderer Street, Apapa, Lagos)
61.	Michelle Nigeria Limited	Michelle Nigeria Limited	8, Akanbi Onitir Crescent, Off Eric Moore Road, Iganmu
62.	Mitsuio S. K.	Alraine Shipping Services/ Transcap	28, Burma Road, Apapa
63.	MSC Line	Comet Shipping Agency	4B Balogun Omidiora Road (Former Hinderer Street, Apapa, Lagos)
64.	NAl/Comet Shipping Line	NAl/Comet Shipping Line	4B Balogun Omidiora Road, (Former Hinderer Street) Apapa
65.	N-Fizah Investment Limited	N-Fizah Investment Limited	1A Lander Close, Off Liverpool Road, Apapa.
66.	O.T. Africa	Cross Marine Services	28 Burma Road, Apapa
67.	Ocean Blocks Limited	Ocean Blocks Limited	33 Creek Road, Ibru Boulevard, Ibru Office Yard, Apapa
68.	Ocean Handlers International Limited	Ocean Handlers International Limited	188, Awolowo Road, S.W. Ikoyi, Lagos
69.	Oladayo International Agencies Limited	Oladayo International Agencies Limited	56, kofo Abayomi Avenue, Apapa Lagos
70.	P & O Nedlloyd	Nedlloyd Nig. Limited	5, Creek Road, Apapa
71.	Peewee Marine Limited	Peewee Marine Limited	9, Oyekan Road, Apapa
72.	Petrodel Resources	Petrodel Resources	2B Reeve Road, Ikoyi

	Maritime Limited	Maritime Limited	Lagos
73.	Petroleum Projects Intermodal (PPI) Limited	Petroleum Projects Intermodal (PPI) Limited	22B Temple Road, Ikoyi, Lagos
74.	PIL	Blue Funnel Nig. Ltd.	34, Creek Road, Apapa
75.	Polmaz Limited	Polmaz Limited	14, Old Aba Road, Rumukurushi, PH
76.	Prize International Limited	Prize International Limited	20, Oyekan Road, Apapa
77.	Progress Marine Limited	Progress Marine Limited	20 Thopson Avenue Road, Ikoyi Lagos
78.	Quality Freight Agency Limited	Quality Freight Agency Limited	7B Ezira Close. Kirikiri Town, Apapa Lagos
79.	Sahara Sea Support Services Limited	Sahara Sea Support Services Limited	234B Adeola Odeku Street, V/Island Lagos
80.	SDV	Wasa-Delmas Nigeria Limited.	26, Creek Road, Apapa Lagos
81.	Silver Ocean Shipping Company Limited	Silver Ocean Shipping Company Limited	4, Saka Tinubu Street, Victoria Island, Lagos.
82.	Skanga Oil Limited	Skanga Oil Limited	292, Ajose Adeogun Street, V/Island Lagos
83.	Stars Investment Co. Ltd.	Stars Investment Co. Limited	Reclamation road, Near PH Boat Club, PH
84.	Sundersons Limited	Sundersons Limited	33, Creek Road, Apapa
85.	Temtum Global Services, Limited	Temtum Global Services, Limited	1, Aerodrome Road, Eleganza Plaza, Apapa.
86.	Tha Shipping & Marine Service	Tha Shipping & Marine |Service	3, Pelewura Way, Apapa

	Limited	Limited	
87.	Tokke Maritime Services Limited	Tokke Maritime Services Limited	NNPLC Comm. Building, Tin Can Island, Apapa, Lagos.
88.	Torm Lines	Alraine Shipping Agency	4B Balogun Omidiora Road (Former Hinderer Street, Apapa, Lagos)
89.	Trans Oceanic Shipping Ltd	Trans Oceanic Shipping Limited	Jaros House, 90, Iwofe College of Education Road, Rumuepirikan, PH
90.	Transmarine Shipping Services Nig. Limited	Transmarine Shipping Services Nig. Limited	1 Commercial Road, Eleganza Plaza, Apapa
91.	Tru-Sell Ventures Limited	Tru-Sell Ventures Limited	1/3 Creek road, Apapa Lagos
92.	United Africa Lines (NAL)	United Africa Lines (NAL)	2, Oroabaw Street, Amadi Flat, PH
93	VTN Dredging Limited	VTN Dredging Limited	1, Arine Base Estate Road, Port Harcourt
94.	WAL	Elder Dempster Agency	34 Wharf Road, Apapa
95.	Wolid international Services Limited	Wolid international Services Limited	7, Ogba Road, Sango, Agege Lagos
96.	World Link Travel Agencies	World Link Travel Agencies	Shop 80, Tafawa Balewa Square, Lagos
97. Socar Talamiz Limited		Socar Talamiz Limited	29, Burma Road, Apapa
98. Michelle Nig. Limited		Michelle Nig. Limited	8, Akanbi Onitiri Crescent Off Eric Moore

99. BHN Transport & Logistics Limited	BHN Transport & Logistics Limited	Plot 018, Trans Amadi Ind. Layout P/Harcourt
100 Carldon International Agences	Carldon International Agences	7, Kofo abayomi Avenue, Apapa Lagos
101 Trans Atlantic Shipping & Transport Agencies	Trans Atlantic Shipping & Transport Agencies Limited	89/91, Kofo Abayomi Avenue, Apapa Lagos.