THE EFFECT OF ENVIRONMENTAL RISK MANAGEMENT ON GROWTH AND SUSTAINABILITY OF OIL AND GAS INDUSTRIES: A CASE STUDY OF TOTAL ENERGIES, UGANDA.

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A DISSERTATION
SUBMITTED TO THE SCHOOL OF BUSINESS AND ADMINISTRATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A BACHELOR OF SCIENCE OIL AND GAS MANAGEMENT AT THE INSTITUTE OF PETROLEUM STUDIES KAMPALA IN AFFILIATION TO UCU.

AUGUST 2021

DECLARATION

I Maclean Negesa, hereby declare that this dissertation is my work and it has not been submitted before to any other institution of higher learning for fulfilment of any academic award.

Signed: ……

Date; ……...

APPROVAL

This is to certify that, this dissertation entitled “THE EFFECT OF ENVIRONMENTAL RISK MANAGEMENT ON GROWTH AND SUSTAINABILITY OF OIL AND GAS INDUSTRIES: A CASE STUDY OF TOTAL ENERGIES, UGANDA” has been done under my supervision and now it is ready for submission.

Signature; ……

Ms. Isabella Kasiko

Date; ……

DEDICATION

I dedicate this work to my family for holding my hand throughout my education journey.

ACKNOWLEDGEMENT

I give all glory and honor to you Lord Almighty and most gracious for bringing me this far in life.

I am forever indebted to my supervisor Ms. Isabella Kasiko for sharing her time, wisdom and expertise with me during the entire course of this research.

I also acknowledge the support of my family and all my friends. All of you made this possible, thank you.

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LIST OF ACRONYMS

RM	Risk Management
ERM	Environmental Risk Management
CRO	Chief Risk Officer
O&G	Oil and Gas
EMS	Environmental Management System
UN	United Nations
GHSs	Greenhouse Gases
ERD	Executive Risk Dashboard
SAQ	Self-Administered Questionnaire
SGR	Sustainable Growth Rate
ROE	Return on Equity

ABSTRACT

The study investigated the relationship between Environmental Risk Management and growth and sustainability of the oil and gas industry in Uganda: a case study of Total Energies, Uganda.

The research design used in the study was descriptive research design while using both quantitative and qualitative approaches. The study population consisted of 100 participants. A sample size of 80 respondents was selected using purposive sampling techniques and simple random sampling. Findings showed that there was a positive relationship between Environmental Risk Management and growth and sustainability of oil and gas industries in Uganda.

Despite the fact that there is a positive relationship between Environmental Risk Management and growth and sustainability of oil and gas industries in Uganda, there is a need for management to

ensure that there is compliance and transparency, using the stipulated government policies, rules and regulations.

CHAPTER ONE

GENERAL INTRODUCTION

Introduction

The chapter discusses the effect of Environmental Risk Management on the growth and sustainability of gas industries in Uganda while presenting the background to the study, problem statement, the purpose, objectives, and conceptual framework, and significance, limitations of the study, justification of the study and operational definition of key terms. Environmental Risk Management is the independent variable with variables including control environment, control activity and risk assessment whilst growth and sustainability is the dependent variable with dimensions of earnings per share, return on equity and return on capital employed. The relationship

between the independent and dependent variable is moderated by the following factors; government policies and taxation.

1.1 Background to the study

Environmental Risk Management is becoming a critical component of corporate strategy. Until the 1960s, there was little concern with environmental risks on the part of businesses, governments or societies. An unrealistic and naive attitude existed which considered that natural systems had an infinite capacity to absorb the pollutants and wastes of industrial economies. Environmental Risks and costs were externalized with internal risks and costs effectively at zero; thus there was no financial incentive for Environmental Risk Management systems to exist. Various events, such as Rachel Carson's book Silent Spring, smog levels in Los Angeles, Love Canal, and the burning Cuyuga and Rhine Rivers, began to gradually shift public opinion to the realization that environmental risks do indeed exist and require the attention of risk management systems Anderson D, R (2002).

The first level of Environmental Risk Management was termed command and control and basically involved compliance with various regulations. Compliance responsibilities were typically handled by engineering departments with little involvement of risk managers. While environmental regulations were seen as being necessary to protect the environment, they were often felt by business to be excessive, inefficient, and unreasonably expensive. Regulations were typically seen in a negative light as adding only costs and no benefits to a business. More recently, a newer, second-level approach for dealing with Environmental Risks has been developing. Under this approach environmental risk management is seen as an integral part of overall business and strategic management. Sustainable Development and environmentally friendly systems and products are emphasized. It is proactive rather than reactive. The orientation is positive rather than negative. Environmental Risk Management systems are seen as adding value to products and services, creating a competitive advantage, improving community image, reducing costs, and increasing the bottom line. Recent texts like Natural Capitalism (Hawken, Lovins and Lovins, 1999) and The Sustainable Business Challenge (Williams, 1998) provide strategic direction and numerous corporate examples and models. These second-level systems are largely voluntary and motivated by the notion that this is the right way to go for both ethical and business reasons. European businesses and societies have been the most accepting of these second-level systems. Certainly not all businesses have voluntarily developed second-level, environmental risk

management systems, particularly in Uganda.

According to Andersen (2002), the first level of Environmental Risk Management systems in the United States involved the passage of federal laws like the 1969 National Environmental Policy Act creating the Environmental Protection Agency (EPA), the Clean Water and Air Acts (early 1970s), the Resource Conservation and Recovery Act (RCRA-1976) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA-1980) or the Superfund program. Similar legislation was passed in Europe. At an October l972 conference of the European Union (then the European Community) it was agreed that a common environmental policy was needed. Environmental policy was built into the Treaty of Rome by the Single European Act of 1987 and its scope was extended by the Treaty on European Union of 1992.

In line with the findings of Andersen (2002), the second-level Environmental Risk Management systems have been developing at a rapid pace. These systems include both organization-based and individual company-based programs. This section will briefly discuss some organization-based environmental risk management systems. Several examples of individual company-based programs will be included in later sections of the paper.

The principles of Risk Management (RM) have moved away from its origins of trying to transfer risk to third parties, to take advantage of risk and opportunities by diminish the level of risk itself (Hopking 2012). RM is not just about avoiding negative results, because risk can comprise both negative and positive indeterminacy. During 1990s to 2000s, the concept of Enterprise Risk Management developed from a focus on managerial and corporate governance (Sithipolvanichgul 2016). The Chief Risk Officer (CRO) position was created during this period of time. Businesses were encouraged to develop their own risk management systems by financial scandals, such as Enron and WorldCom, and its fast evolution was as a result of the Sarbanes-Oxley Act of 2002 in the US. The 2008 financial crisis produced that more financial and non-financial companies took a holistic, strategic and process-oriented approach to Enterprise Risk Management that would handle the internal and external risks with the intention of increasing shareholder value.

Risk Management techniques are particularly well suited to identifying and assessing increasing environmental risk costs. While general managers often focus on the short term ± the next quarter ± risk managers are generally more focused on the long term. While general management often sees the precautionary principle as impeding development, Risk Management uses the principle as a critical strategic tool. As risk financers, insurers will be in the first line to absorb increasing

Environmental Risk costs so they have substantial self-interest incentives to analyze the actuarial implications of ignoring the use of Environmental Risk Management Systems. Insurers can also provide risk managers and general managers with more precise estimates of these increasing environmental risk costs. Insurers as major capital investors will also need to incorporate future developments in environmental risk costs into their investment decisions Anderson D, R (2002)

Risk Management makes a vital contribution to organizational excellence, sustainability and growth (Lam, 2014). Risk Management is the anticipation of possible threats and hazards that generate ways of coping with them and also create reliable forms of business value (Crouhy, Galai and Mark, 2000). Due to the benefits attained by the enactment of Risk Management, organizations should adopt this strategy, the plus points of which include a potential rise in the level of success and a notable decrease in the chances of failure thus leading to easier accomplishment of objectives (Bitkowska and Bitkowska, 2018). Risk Management has recently grasped a notable amount of interest. However, its implementation has still been at a comparatively lower rate (Stoneburner, Goguen and Feringa, 2002). With the onset of the economic crisis, it has become even more important for companies to put in efforts to manage risks. However, Risk Management is very similar to achieving the desired organizational goals (Rampini, Sufi and Viswanathan, 2014). A great responsibility rests on the shoulders of senior managers to ensure sustainability by offering value at reasonable risks (Stoneburner, Goguen and Feringa, 2002). Performance reports prepared for senior managers should focus on risk management. The overall organizational performance can be enhanced by getting a better insight into organizational risk (Power, 2008; Lam, 2014). This can be done by incorporating risk into performance management processes.

Different departments and professions are involved in such cases. However, enterprise-wide risk management or environmental resource management framework is more often applied when discussing high-level risks for an organization (Michalski, 2009). Through the environmental resource management framework, an insight into crucial business risks, integration of traditional and function specific risk management is gained (Eckles, Hoyt and Miller, 2014). These include labor safety and information security system. Various kinds of information can constitute this report (Lam, 2014), examples include qualitative information such as risk objectives, audit findings, incidence reports, key risk indicators and measures against financial risk including the value at risk. According to Stulz, (2006), innovative performance management frameworks can be applied to help senior managers gain a better understanding of the risks present.

The current competitive business environment has raised the level of risks for any business firm (Kerzner, 2013). Therefore, the responsibility for people managing human risk factors has become greater. All kinds of business organizations including financial services, energy and gas, manufacturing and other sectors, have to put in greater effort to compete in the market (Bouder, Slavin and L fstedt, 2009). Moreover, new regulations have been introduced that must be followed, keeping in mind the risk factors and managing them efficiently. Board members and executive members are very interested in being informed of risks to the business and being briefed on the methods being adapted to manage these risks (Bouder, Slavin and L fstedt, 2009). They are also interested in deriving methods to best cope with risks to achieve maximum profits for shareholders. Due to different organizational factors, the importance of risks is increasing. Some of these include failures in energy and communication industry, banks suffering from subprime mortgages, the new regulations for corporate governance and Risk Management which surfaced during the financial crisis of 2007/8. These have shifted the focus of organizations towards possible risks (Louisot and Ketcham, 2014).

To reduce losses, management must follow the new regulations (Kerzner, 2013). To do this, operational efficiency must be enhanced, risks and compliance must be adequately managed, and the division of capital must be done considering all the benefits and risks (Rodrigues, Oliveira, and Leitão, 2014).

Generally, in the energy sector, safety refers to those practices that help eradicate any threats to the well-being of the human operators. Early societies regarded accidents as unavoidable events, and no provisions were made in public policies (Stoneburner, Goguen and Feringa, 2002). The global realization of health and safety started mainly in the 1800s (Stulz, 2006). A lot of human lives were lost as a result of a breakdown in industries, making companies realize the importance of taking preventive measures. In the present world, the safety factors are incorporated in nearly every governmental and private organization to reduce the loss of human capital and to achieve organizational excellence (Qinqin et al., 2014). Moreover, separate organizational teams work for the identification of risks and devise mitigating policies to prevent unwanted risks from taking place (Kerzner, 2013).

The area dealing with risk is interconnected with numerous other sciences which include natural science, health, statistical studies, safety engineering, sociology, economics, and psychology. Each field employs a different field approach to handle the risks pertinent to their field. However, none

of the fields can claim to have fully comprehended risks. As asserted by Freudenburg and Gramling (2011) a combined approach from all these connected fields can only offer efficacious risk mitigation services. Hoffman (2011) stated that it is very complex phenomena to sort all the risks involved due to its dependence on many parameters. The same concept was advocated by (Louisot and Ketcham, 2014) who believed that risks are correlated with many factors that make its analysis a challenging task.

Even the renowned companies over the world have faced serious safety challenges in their history. The O&G sectors often considered as a benchmark industry concerning the field of risk management and safety. In spring 2010, the industry faced a major setback due to significant oil spill ever recorded in US history, thus leaving adverse long-term effects (Louisot and Ketcham, 2014). Currently, deep-water drilling has posed some serious consequences. With the rising depth of seawater, the pressure rises manifold, and studies have revealed that O&G basin exists at even more pressures, with the great possibility of oil spills if the necessary precautions are not taken. These hazards were categorically stated in research. Freudenburg and Gramling (2011) showed their concerns on this underwater disaster, stating it to be not only a huge challenge for engineers but also causes a tremendous amount of costs to rectify it.

As Risk Management is still in the undergrowth phase, a lot of potential in this field is yet to be explored. The research will focus on major risks that companies face, identification of the people authorized to handle risks, expectation levels associated with risk management functions, the duration of risks, and the expertise and guidelines which companies can apply to achieve organizational excellence.

1.2 Statement of the Problem

A feature of industrial enterprises is their constant dependence on emerging environmental risks. Environmental risks can both cause significant damage to the environment, as well as entail a high amount of material losses. Therefore, industrial enterprises must develop effective management systems that are able to consider these risks. The oil and gas industry is rapidly developing in Uganda with many people embracing renewable resources such as gas. The implementation of such a strategy would have had a positive effect on both the individual enterprise and the economy of the region and the country. Modern industrial enterprises aimed at the external market are under some pressure from foreign customers and partners, therefore they are forced to introduce the Environmental Management System and develop the environmental strategy (Earnhart, Khanna,

& Lyon, 2014). Providing competitive advantages is also associated with the formation of a positive environmental image of the industrial enterprise (Gunkov & Kholopov, 2017).

It turns out that sustainable development of industry is an important task of the domestic economy. However, industry is also the main source of environmental pollution. Thus, only the share of the extractive sector accounts for about 30% of emissions from stationary sources that pollute the atmosphere (Popov & Semyachkov, 2014). At the moment, pollution charges paid by industrial enterprises do not cover all damage to the environment. This requires fundamental changes in approaches to environmental protection.

Minimizing and preventing environmental damage can also solve social problems, such as reducing morbidity and improving the quality of life of the population. Environmental responsibility is becoming a necessary characteristic of actively developing industrial enterprises, including those that are aimed at successful operations in the international market.

1.3 Purpose of the Study

To find out the effect of Environmental Risk Management in Total Energies on growth and sustainability of oil and gas industries: A case of Total Energies, Uganda.

1.4 Objectives of the Study

i. To establish the relationship between control environment and growth and sustainability in the oil and gas industry.
ii. To examine the effect of control activities on growth and sustainability in the oil and gas industry.
iii. To establish the effect of risk assessment on growth and sustainability in the oil and gas industry.

1.5 Research Questions

i. What is the relationship between control environment and growth and sustainability in the oil and gas industry?
ii. What is the effect of control activities on growth and sustainability in the oil and gas industry?
iii. What is the effect of risk assessment on growth and sustainability in the oil and gas industry?

1.6 Scope of the Study

1.6.1 Time scope

The researcher will use information in a time scope of (2010-2020); this is because of the relevant information in the books that is still applicable to the current status of Environmental Risk Management policies implemented by Total Energies. The research will be conducted within a period of 6 weeks. The researcher will use this time period to get access to the relevant information and source documents about the topic under study as well as the case study.

1.6.2 Geographical Scope

The study will be carried out at several branches of Total Energies within Kampala and surrounding areas of Wakiso including Total Kyengera, Total Wakaliga, Total Nateete and Total Bakuli. The research will be limited to the employees who work with at the gas stations and will aid the researcher to understand whether Environmental Risk Management has a positive relationship in regard to the growth and sustainability of Total Energies, Uganda.

1.6.3 Content Scope

The study will focus on Environmental Risk Management as the independent variable with dimensions such as control environment, control activities and risk assessment while the dependent variable will be growth and sustainability with dimensions including return on capital earnings per share and return on equity.

1.7 Significance of the Study

The study will help the researcher fulfill the requirements for the award of Bachelor of degree at Institute of petroleum studies Kampala.

The findings of the study will assist the management of oil and gas plants to improve their risk management techniques in order to safeguard e environment and the people around.

The study will help the managers in the oil and gas sector to evaluate the relationship between risk management strategies towards achieving an efficient business strategy and sustainability.

The research study will be considered relevant because it will provide solutions to the challenges faced with policies enacted to ensure Environmental Risk Management.

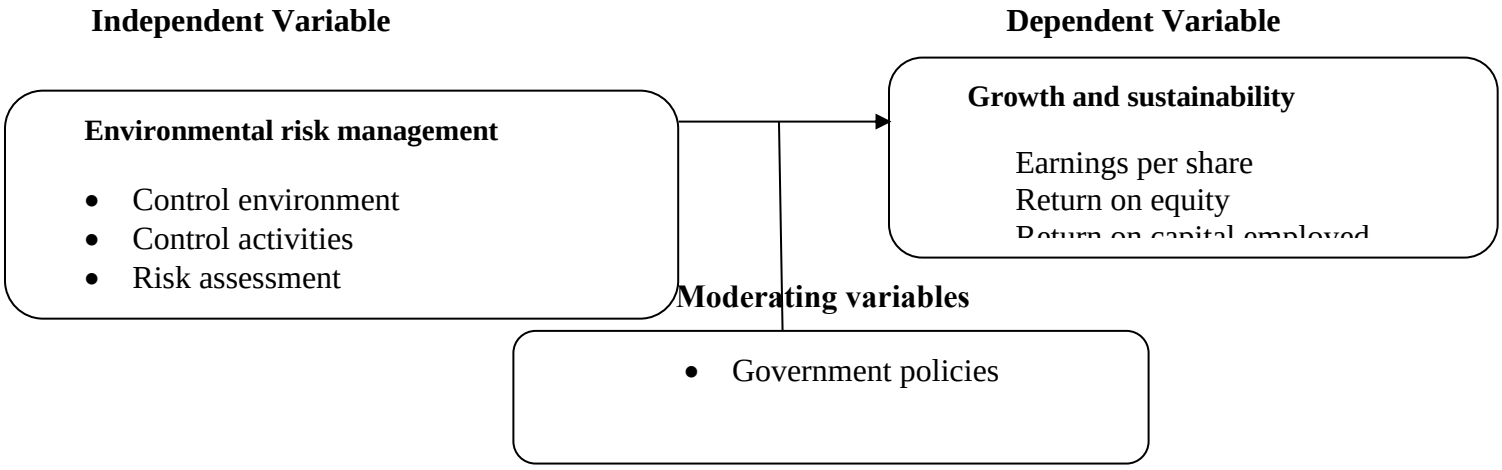
1.8 Justification of the Study

As pressures on the environment increase, there is a need for understanding the resulting environmental risks. Forecasts of risk to the environment could provide basic information needed for sustainable resource development decisions. However, such information is often lacking. In response to this need, based on a review of methodologies used recently in line with the topic, the researcher has opted to establish the effect of environmental risk management on growth and sustainability of gas firms.

1.9 Conceptual Framework

Mugenda and Mugenda (2003) define conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. The conceptual framework shows the effect of Environmental Risk Management on growth and sustainability. The illustration below shows that Environmental Risk Management is an independent variable and growth and sustainability is the dependent variables while government policies are moderating variables.

Figure 1 conceptual framework



Source: As modified by the Researcher 2021

A conceptual framework above linked the three elements of Environmental Risk Management (control environment, control activities and risk assessment) with growth and sustainability (earnings per share, return on equity and return on capital employed). Environmental risk management is the independent variable which in this study influences the depended variable which is growth and sustainability.

Operational definitions

Risk

Risk is defined as the uncertainty associated with a future outcome or event (Banks, 2004).

Risk Management

Risk management refers to "the set of activities aimed at the detection, planning, organization, direction and control of the possible damages that the organization could suffer and its level of vulnerability with the objective to establish strategies that lead to maximize performance". Clarke and Varma (1999) affirm that RM constitutes a strategic business process and management requires assessing whether activities are consistent with strategic objectives, and how RM is linked to investment and growth decisions.

Environmental Risk Management (ERM)

Lam (2014) defines ERM as a structured method to manage the risk. Successful Risk Management can lead the companies and firms to achieve the goals and objectives set for the respective organization and also increase the shareholders' value

Sustainability

According to Contributor (2010) this is a business strategy that aligns profit goals with a company's environmental policies.

Sustainable Growth

Sustainable growth refers to a process of growth where the welfare of society does not steadily decline over time due to excessive use of limited environmental resources or environmental damage caused by production and consumption activities.

Control Environment

Clarke (2020) defines control environment as the "foundation on which an effective system of internal control is built and operated in an organization that strives to; achieve its strategic objectives, provide reliable financial reporting to internal and external stakeholders, operate its business efficiently and effectively, comply with all applicable laws and regulations and safe guard its assets".

Control activities

According to office of finance (2010), these are the policies, procedures, techniques, and mechanisms that help ensure that management's response to reduce risks identified during the risk assessment process is carried out.

Environment risk assessment

According to Lam (2014), there are tools for identifying risk elements within a business environment. There are also tools specially dedicated to assessing and managing those risks. The tools can be divided into three major categories.

Risk Mapping

Preve (2013) describes risk mapping as an important tool for Risk Management. "Risk Mapping is a listing of all the relevant risks that might affect the company, where each single risk is placed in a two-dimensional space: impact and probability of occurrence".

According to Preve (2013), the location of the risks in this space allows top management to reach a decision regarding which risks should be assumed and which risks should be hedged.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

The chapter will make review of the literature studied by other scholars and researchers with regard to exploring the topic of study. The researcher will look at literature from the other researchers, scholars and use the results as a baseline for this research. This chapter also links the research topic

to the effects of marketing strategies on financial performance of the commercial banks in Uganda.

2.1 Theoretical review.

2.1.1Agency Theory

Agency theory covers firm analysis to comprise separation of ownership and control, as well as managerial motivation. In the field of corporate risk management, agency issues have been revealed to influence managerial attitudes toward risk taking and hedging (Smith and Stulz, 1995). The agency theory enlightens on a likely discrepancy of interest among debt holders, shareholders, and management, as a result of irregularities in income distribution.

Subsequently, agency theory suggests that defined hedging policies can have significant influence on firm value (Fite and Pfleiderer, 2001). Stulz (1995) proposed a reason for the managers of a firm to be interested in taking part in risk management. He stresses that company bosses or rather managers are assumed to work on behalf of the main owners of the company, and hence they have a major role to play in the firm's profits and distribution of resource. This means they are inclined to avoid risk as much as possible so as to reduce the returns variability of a firm, to achieve the firm's objectives. By doing this, managers are deemed to be maximizing wealth, which is in line with the shareholders' goal of wealth maximization.

Managerial motivation factors in implementation of corporate risk management have been empirically investigated in a few studies with a negative effect (Faff and Nguyen, 2002; MacCrimmon and Wehrung, 1990; Geczy et al., 1997). However, encouraging evidence was found by Tufano (2000) in his analysis of the gold mining industry in the US. Theories of financial policies were tested in studies of the financial theory, both theories give similar predictions in this respect. The bulk of empirical evidence however, seems to be against the agency theory hypotheses.

The agency theory offers solid support for risk management as a response to discrepancy between shareholder interests and managerial incentives. Shareholders and managers have diverse interests in the firm, and their risk management objectives vary from stakeholder to another. Management prefer low risk and hence lower return on investments, as opposed to shareholders who want higher risk – higher return on investments. Agency theory stresses on the importance of risk management to make even the interests of senior managers and stakeholders to take it up on themselves to the financial performance of the firm.

2.2 Conceptual Review.

2.2.2 Growth and Sustainability

Economic growth is the process by which a society expands its production and consumption opportunities over time. It involves increased output of commodities (goods as well as services) as well as creation of new commodities that are either directly consumed or enter as inputs in production of other commodities. It is reflected in improvements in the material standards of living—though the share of such improvements accruing to individuals may vary widely across society. A generally accepted measure of economic growth is the change in real per capita income over time. Sustained economic growth can be defined as the event that per capita income in a society exhibits a secular or long-run tendency to expand over time, though the process may be marked by intermittent periods of stagnation and decay such as those caused by business cycles.

We live in an era of economic growth. Since the industrial revolution, countries in Western Europe and North America have experienced sustained and often accelerated economic growth in a manner never observed in previous history. The real gross domestic product per worker hour (whose changes over time may be reasonably expected to be closely related to movements in per capita income) experienced dramatic acceleration as the process of industrial revolution, modern technology, and globalization unfolded. During the period 1580–1820 (most of this period precedes the Industrial Revolution), the Netherlands was the leading industrial nation in the world, and there the index (real gross domestic product per worker hour) grew at an average annual rate of about 0.2 %. The United Kingdom, which had become the leader during the period 1820–1890, experienced an annual growth of the index at an average rate of 1.2 %. Since 1890, the United States usurped the position of the leader in economic growth, and there the index has grown at an average annual rate of 2.2 % per year (in the period 1890–1989).

2.4 Actual Review.

2.4.1 Control Environment and growth and sustainability.

Oil and gas industry operations occur in every corner of the globe, in a diverse range of habitats and ecosystems. These operations often place large pressures on the local environment and inhabitants, and as global population growth continues to rise, so too does the demand for useable energy and resources. In 2013, consumption and production increased for all fuel types, surpassing

previously record high levels for all fuels except nuclear.[1] Fossil fuel global consumption rose more rapidly than overall production, resulting in further production pressure for oil and gas companies. Meeting the rising global energy demand comes with high risks and costs to both society and the environment. Oil and gas companies are thus faced with the challenge of meeting the world's expanding energy demands while minimizing the negative externalities associated with these operations.

While there are both international and national regulations regarding best practices, many of the risks these corporations face are site specific, requiring detailed background research and precautionary measures that cannot be solved using a generalized framework. To address these concerns, oil and gas companies must develop their Risk Management Systems and operational practices to minimize harmful environmental impacts and incidents. By embedding environmental concerns into all aspects of daily operations, these companies can achieve socially beneficial outcomes, while avoiding potential disasters and more stringent legislation.

Inserting environmental proactivity is crucial because unsustainable business practices pose serious threats to the environment at both local and global levels. Oil and gas exploration often threatens to destroy habitats, cause biodiversity loss and produce harmful air emissions.[2] Incidents and oil spills can result in soil and groundwater contamination as well as marine and freshwater discharges. These accidents can occur in diverse locations with impacts varying in severity based on the stage of operation. The UN reports that corporate environmental damage costs $2.2 trillion annually, with an estimated global cost of $28 trillion by 2050.[3] Anthropogenic greenhouse gas emissions constitute for 50 percent of this total with local air and water pollution accounting for the remaining 50 percent. High concentrations of carbon dioxide resulting in greenhouse gases (GHGs) have been proven to increase atmospheric temperatures and sea levels as well as cause alterations in precipitation patterns. The incidents that arise from these multinational oil operations threaten more than just environmental quality, causing dramatic changes in the condition of the exploited habitat. These habitats are critical to local populations whose traditional culture and lifestyles are often affected. Exploration of these resources threatens to alter land use patterns in agriculture, fishing, logging and hunting. The highly integrated nature of societal health and safety with the environment poses dangerous consequences to humanity as whole. To decrease the

negative effects of these operations on society and the environment, oil and gas companies need to improve their practices and objectives to incorporate all of the costs associated with the environmental risks.

2.4.2 Control Activities and growth and sustainability.

In addition to traditional risk based approaches like cost-benefit analyses, there are various other strategies companies can utilize to embed environmental considerations into daily operations. Companies have the option of exhorting employees in complying with corporate risk management strategies. Through annual publications and company statements on the importance of considering environmental threats from operations, the company can bring these concerns to the front of the employees' minds and to a top priority for operational awareness.

There are also several kinds of incentive based approaches available for oil and gas companies to use. One option is to include environmental performance in to the promotion process. Evaluating an employees' ability to adhere to and advance corporate environmental initiatives may encourage individuals to pay more attention to these environmental objectives. If job retention and promotion is based on environmental performance, there is a higher likelihood that individuals will adhere to the environmental risk management framework.

Underscoring the importance of the input and output stages of operations as opposed to the ultimate outcome of the process may be another solution to the challenges associated with embedding environmental risks. Often, operating units are able to get away with minimal attention to environmental risks due to the low probability of an incident occurring. Unfortunately, these low probability events are highly costly, which means that limited attention to detail can result in disaster, like the Exxon-Valdez spill of 1989 or more recently, the Deepwater Horizon spill. If operating units are measured and rewarded on their ability to manage inputs and outputs of a project, as opposed to the overall outcome of that product, then these catastrophic events are less likely to occur. This preventative approach may prove to be more beneficial to reducing the number of environmental incidents and the associated costs than addressing situations after they occur.

By placing a monetary value on environmental good works through bonus-based incentives, companies can emphasize the importance of considering environmental risks before initiating operations. Bonus based incentives may encourage employees to place a higher value on

environmental performance. Unfortunately, a bonus based incentive system is accompanied by a few severe pitfalls that make its implementation detrimental. By placing a monetary value on environmental accomplishments, employees have the option to decide on the future of the environmental goal or another goal of the company. The environment's value cannot be traded off against financial valuations; meaning energy companies must rely on one of the other two incentives based approaches.

2.4.3 Risk Assessment and Growth and Sustainability

According to Lam (2014), there are tools for identifying risk elements within a business environment. There are also tools specially dedicated to assessing and managing those risks. The tools can be divided into three major categories. These are qualitative tools, quantitative tools and the mixed quantitative/qualitative tools (Stluz, 2006). The qualitative tools highlighted include risk rankings, risk maps and heat maps, and executive dashboards.

After the identification of a risk, it can be placed on a scale defining its importance from low to moderate or even high (Lam, 2014). Cross-functional groups discuss every single risk element because the importance to every element may vary depending upon the person and how they see the environment and the role that risk element can play in that environment (Ariff et al., 2014). This leads to a broader, deeper and much detailed study of every risk element present in the industry. Heat maps and risk maps are very important tools for assessing and managing risk elements. What this tool does is to visualize the significance of certain risks factors. Price Waterhouse Coopers (2014) in their practical guide emphasized the efficiency of this tool. A risk map is considered a great tool because it can look at a risk factor individually and in comparison, to other elements as well. First, it considers the likelihood that an event is happening. This can range anywhere between high, medium or low.

The next tool used to assess risk is the Executive Risk Dashboard. PWC (2014) have stated that many businesses prefer to alter their policies to suit themselves since they face different risks, they perceive them differently, and they want to deal with them differently using a risk dashboard designed for it. For instance, a business might be in a different kind of environment, or it may be facing different legal and regulatory policies. Companies deal with this by creating policies which affect them at strategic and tactical levels. Due to the complex nature of tasks, organizations sometimes tend to create a very complicated model. As a solution to this, the executive risk dashboard is created. The executive risk dashboard allows the manager to view certain data and

information. It provides a picture of an organization to the managers providing statistics and figures to support each claim (Jeston and Nelis, 2014). This provides managers quick access to all this information without having to go through the otherwise tedious and lengthy process. Executive risk dashboard serves as a means of assessing information about the risk elements involved in the industry (Gordon, 2009).

The procedures that makeup risk management have been highlighted recently through the publication of various scholars and researchers. It has been discovered in previous publications that there are slight differences in the descriptions of the processes of risk management given by different scholars and authors. According to Lam (2014), a risk management framework covers the scope and the procedures of risk management as well as the duties of an individual concerning risk management. A successful risk management structure includes procedures that cover identification, acknowledgment, measurement, monitoring, reporting and controlling of risks (Gordon, 2009).

COSO's (2004) Environmental Risk Management framework argues that Environmental Risk Management in any organization will include among others the alignment of organization's risk appetite with their strategies for good achievements of strategies, enhancement of quick and appropriate risk response decisions, the reduction of operational surprises and losses and the improved deployment of capital. This demonstrates the capabilities provided by the implementation of ERM and its important components that would enhance the achievement of an organization's performance and profitability objectives while preventing loss of resources.

These capabilities which enable ERM to deal with risks and opportunities affecting value creation or preservation are however dependent on the components of Environmental Risk Management implemented in an organization. The components are however integrated with the management process and therefore derived from the way management runs an organization. This implies that the components may highlight the Environmental Risk Management implementation approach, the processes of ERM, and the factors that drive the successful operations of ERM in organizations. The components of Environmental Risk Management, according to COSO (2004) are the internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring.

The internal environment component of ERM concerns the organization's structure, culture, management behavior, integrity and ethics, the operating environment and nature of the business.

This component could be regarded as the risk context which drives risk management or a platform for effective risk management. ISO 31000 refers to this component of a structure as the risk management context. It is also noted that a suitable organization structure is required for successful implementation of risk management, provision of adequate support and the sustenance of the risk management process (COSO, 2004; ISO 31000, 2010). The internal environment component may, therefore, be regarded as a critical success factor for ERM implementation and operation. It is thus a major requirement of risk management that should be in place to ensure good standards of risk governance. Shenkir and Walker (2006) also opined that an effective ERM implementation might require an organization context characterized with strong top management commitment, risk management philosophy with risk appetite, integrity, and ethical values, and also the scope and infrastructure for ERM.

The risk assessment component of the ERM is a follow up of the event identification component and is focused on the analysis of identified risks with a view of establishing the likelihood and impact of each risk which will determine the management of different risk. This component is also part of the risk protocols in an organization and is to ensure that, suitable and sufficient risk assessments are carried out and recorded in an appropriate manner (COSO, 2004; ISO 31000, 2010). This component is, therefore, a necessary component for a successful ERM implementation and practice in an organization.

In relation to earnings per share, return on equity, return on capital employed and Growth and sustainability, according to Murphy (2020), Sustainable Growth Rate (SGR) refers to the maximum rate of growth that an organization can sustain without having to finance growth with additional equity or debt. SGR aims to maximize sales and revenue growth not having to increase its financial leverage. Having an Oil and Gas company achieve the SGR, this will assist it in the prevention of being over leveraged and divert from financial distress.

In order to attain SGR, the return on equity of the company needs to be obtained. ROE measures the profitability of a company through comparison of its net income to company's shareholder's equity. Sustaining SGR in the long-term can be difficult. The SGR calculation assumes that a company or companies wants to maintain a target capital structure of debt and equity and accelerate sales as fast as the organization allows.

In a case where an organization's growth becomes greater than what it earns can self-fund, a firm handles it by devising a financial strategy to raise that capital required to fund its rapid

growth. An organization can issue equity, increase its financial leverage through debt or increase profit margins by maximizing the efficiency of its revenue. Considering all the above factors, the SGR of an organization can increase making it an important factor in management of risks.

2.5 Conclusion.

This chapter presented a critical review of environmental risk management, theoretical and empirical data in existing literature on both the independent variable which is environmental risk management and the dependent variable which is growth and sustainability. It discussed the review of the related literature findings from different authors, publications, magazines, websites and all possible sources as a basis of foundation for this research study, and it also presented literature review on environmental risk management and growth and sustainability. The chapter had sub topics on environmental risk management such as control environment, control activities and risk assessment as concepts factors that affect growth and sustainability and the relationship between environmental risk management and growth and sustainability. Information in this chapter was guided by the research questions and the research objectives.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The purpose of this chapter is to describe the methodology employed in the study. The chapter covers the research design, study population, area of study, sample size, sampling techniques, the data collection methods, the data collection instruments, research procedures, data quality control, data management and analysis, ethical considerations, and limitations of the study.

3.1 Research Design

The research design employed in this study was the descriptive research design. According to Sekaran (2003), adds that this design aims at gathering data just once from a variety of sources for purposes of answering the research questions. Research design permits the establishment of causal relationships between different variables (Sarantakos, 2005).In order to provide both qualitative and quantitative data from the chosen population, the study adopted both qualitative and quantitative approaches because the phenomenon under study had both quantitative and qualitative values. Qualitative methods are suitable for the collection of verbal data while the collection of numerical data requires quantitative methods (Babbie, et. al 2003). The application of these two research methods ensured that defects in one design were compensated for by the other. This was intended to enable the researcher understand Environmental Risk Management in Total Energy, Uganda.

3.2 Area of the Study

The research was conducted at several branches of Total Energies, within Kampala District and Wakiso. These included Total Kyengera, Total Busega, Total Nateete, Total Kabuusu and Total Bakuli. It was at various branches to enable the researcher have adequate sample size for the study.

3.3 Study Population

The study population comprised of 100 respondents classified in the following three departments, namely: illustrated in table 3.1.

Table 3.1: Study Population

SNo.	Department	Population
1	Station Managers	22
2	Pump Attendants	7
3	Station Engineers	71
	Total	**100**

Source: Total Payroll 2021

3.4 Sampling Procedures

3.4.1 Sample Size

Out of a population of 100 (see Table 3.1), a sample of 80 was determined using Krejcie and Morgan (1970) Table for size determination. This sample was deemed representative because it is well over and above 10 to 30 per cent of the target population that Kothari (2004) believes is a sufficient representation of the population.

Table 3.2: The Distribution of the Sample Size of 80 and Sampling Techniques

SNo.	Department	Population Size	Sample Size	Sampling Technique
1	Station Managers	22	22	Purposive Sampling
2	Pump Attendants	7	7	Purposive Sampling
3	Station Engineers	71	51	Simple Random Sampling
	Total	**100**	**80**	

Source: Total payroll 202, Krejcie and Morgan (1970)

3.4.2 Sampling Techniques

In this study, probability sampling was used to select respondents from a sampling frame of 80 respondents from Total Energies, Uganda. The two probability sampling techniques used are purposive sampling and simple random sampling. The researcher employed purposive sampling to select respondents from different departments because the respondents held special positions and were therefore expected to have important information regarding environmental risk management in Total Energies, Uganda. Simple random sampling was used to select respondents from the Operations Department in order to ensure that each member of the target population had an equal chance of being included in the sample.

3.4.2.1 Purposive sampling.

Purposive sampling was based on expert judgments, with the primary goal of allowing the researcher to create a sample that was presumed to be representative of the population. This was frequently accomplished by using expert knowledge to choose a non-random sample of objects that will reflect a cross-section of the population (Lavrakas, 2021). Purposive sampling, on the other hand, necessitates that the researcher have sufficient understanding of the research study's aim in order to appropriately choose and approach eligible respondents who fulfill a specific profile. Purposive sampling helped the researcher to extract a lot of information from the data

collected, allowing them to describe the primary influence the study's findings have on the community (Lauren, 2020).

3.4.2..2 Simple Random Sampling.

The research study adopted stratified Random sampling technique which included the division of a populace into layers. The strata were shaped basing on the common credits (shared attributes) (Steve, 2017). These sub sets of the layers were utilized to establish a random sample, the researcher utilized stratified random sampling on account of the layers, for example, mangers of the branches and employees that were remembered for the exploration to help in the assortment of information (Kothari, 2010). As a result, the researcher advocated for the use of simple random sampling in each stratum. This allowed the researcher to obtain information from management and personnel at the selected Total Energies stations, and ensuring that the research study has high internal and external validity (Steve, 2017).

3.5 Data Collection Procedure

The study involved collection of both primary and secondary data from Total Energies, Uganda. This was possible after presenting a letter of introduction from the Faculty of Business Administration and Management of Uganda Christian University signed by the coordinator to the management of Total Energies, Uganda, seeking for permission to conduct research.

3.6. Data Collection Methods

The study employed the survey method of data collection in which respondents were required to provide answers in a pre-determined order. The survey method involved the use of a questionnaire and a semi-structured interview all aimed collecting primary data. For this particular study, a questionnaire of 32 items was administered to 80 employees of the company. The items on the questionnaire covered two broad areas, namely: risk management system and growth and sustainability. The semi-structured interview on the other hand, was meant to corroborate information obtained from the questionnaire.

The study also involved a documentary review of secondary data from the company’s waste management reports. The reports were reviewed in order to gain an insight into Environmental Risk Management for the five years under study.

3.6.1 Questionnaire Survey

The questionnaire survey was the primary data collection method used with a view of making statistical inferences about the population being studied after collecting data from the sample population selected both randomly and purposively as indicated in Table 3:2. During the survey questionnaires were handed directly to selected respondent and the survey used a paper–and-pen mode. Questionnaire survey was convenient in terms of cost effectiveness with a large sample size that was widely spread, geographically. The questionnaire survey also ensured a good response rate when selected respondent were given time to respond to questions at their convenience.

3.6.2 Interviews

The researcher used semi-structured interviews as a method of data collection. The choice of interviews as a method of data collection was justified on the grounds that the study being partially qualitative would require an intensive interaction with informants in order to gain better insight into the research issues and a collection of detailed and in-depth information; and there is a more likelihood of getting responses. This was applied to purposively selected managers, on a one-on-one basis.

3.6.3 Documentary Review

The researcher also used documentary review method to analyse documents that contain information about the variables under study. The adoption of documentary review and analysis as a method of data collection is justified on the grounds that, reviewing of some documents that relate to the issues under study supplement the information obtained from questionnaire and interviews.

3.7. Data Collection Instruments

This included a questionnaire and an interview guide supplemented by secondary data, which was be collected using a documentary checklist.

3.7.1. Questionnaire

The questionnaire used was a self-administered questionnaire (SAQ) with a majority of questions being closed-ended, and a few open-ended questions on the demographic characteristics of the respondents. The SAQ contained five points of a Likert scale used to measure the views on all the components of the constructs.

According to Kochik (2011), one advantage of using Likert scale questions is the ease within which respondents rate a series of statements by having them circle, tick (√), or otherwise mark numbered categories (for instance 1, 2, 3, 4, 5), thus facilitating the respondents in answering the questions and hence increasing the response rate. The respondents had to indicate how closely their feelings matched the questions on a rating scale having a wide range of choices. The questionnaire was administered to the respondents through a drop and pick method.

3.7.2. Interview Guide

The Interview guide contained only open-ended question. The choice of the interview guide as a data collection instrument was dictated by the fact that no single research design can be purely quantitative. A given study can therefore be more quantitative with some qualitative aspects as well (Creswell, 2009). The guide contained six opinion-based questions.

3.7.3. Documentary Check List

A documentary checklist review was also used for reviewing relevant documents so as to compliment the information collected through the use of the questionnaire and the interview guide. Various relevant documents like reports, budgets, staff registers, minutes of meetings, and financial statements, to mention but only a few, were reviewed

3.8 Measurement of Variables

Environmental Risk Management (the independent variable) was measured in terms of control environment, environmental risk management activities, and risk assessment. On the other hand, (the dependent variable) was measured using questions constructed on financial performance. In all these cases the perception of respondents on each of the questions set on the questionnaire was established using a five point Likert scale of responses with five (5) options ranging from Strongly Disagree (1) to Strongly Agree (5). In between these end-points were the options of 2= Disagree (2), Not Sure (3), and Agree (4).

3.9 Data Quality Control

In order to ensure data quality control, validity and reliability of the study was done by undertaking pilot tests. According to Leedy and Ormrod (2009), the validity of a measurement instrument is the extent to which the instrument measures what it is supposed to measure. It takes different forms each of which is important in different situations (Leedy and Ormrod, 2009).

3.9.1 Validity

Content validity was assessed by conducting a pilot study to find out if the respondents would respond to the questions without difficulty. The instruments (the questionnaire and the interview guide) were given to five risk managers in order to get their expert opinion on the main themes of the study. The results of the test revealed a content validity index of 0.75, which meant that the items on the questionnaire were valid. Researchers like for instance Mande (2014) offer support the figure of 0.75 obtained in this case by asserting a good research should yield a content validity index either equal or greater than 60%.

The content validity index that indicated the extent of expert agreement was calculated using a formula:

$$\text{Content validity index} = \frac{\text{Number of valid items}}{\text{Number of total items.}}$$

By using the formula above the content validity index was calculated as shown in table 3.4 using the scoring of three management consultants who showed the number of valid inquiries out of the total of 32 inquires.

Table 3.3: Content Validity Index Calculation

No	Construct	Number of Total items	Number of Valid Items	Content Validity Index
1.	Expert Opinion One	32	25	0.78
2.	Expert Opinion Two	32	23	0.72
3	Expert Opinion Three	32	24	0.75
4	Expert Opinion Four	32	24	0.75
5	Expert Opinion Five	32	24	0.75
Average Alpha		**32**	**24**	**0.75**

Source: Field data (2021)

3.9.2 Reliability

To ensure reliability of the modified instruments, the researcher did a pilot test on 10 purposively selected respondents from Total Energies, Uganda. Thereafter the responses on the instruments were analysed using SPPS Version 20, and Cronbach's alpha values for each of the variables were obtained. Cronbach's alpha can take any value from zero (no internal consistency) to one (complete internal consistency). The results of the test are shown in Table 3.4.

Table 3.4: Reliability Test

No	Construct	N	Items	Cronbach's Alpha
1.	Risk Management	10	15	0.577
2.		10	12	0.891
Average Alpha		10	27	0.734

Source: Field findings (2021)

From Table 3.4, the average Cronbach's alpha coefficient obtained is 0.734. Emory (2009) suggested that as a rule of thumb, Cronbach's alpha should not be lower than 0.7. In support of Emory (2009) suggestions, Sekaran (2003) further asserts that the higher the coefficients are, the better the instrument. Given the fact that the average coefficient obtained is higher than 0.7, it is appropriate to infer that the scales used in the study were consistent and reliable.

3.10 Data Management and Analysis

The researcher ensured data management by designating responsibilities of every individual involved in the study; adequately stored and backed up data collected; ensured data security by providing for data access and stability.

The researcher used both qualitative and quantitative data analysis techniques to analyse data, summarize the essential characteristics and relationship of the data in order to form generalizations. Before processing the outcome, the completed questionnaires were edited for completeness and consistency, and were quantified, using a scales of **1**- strongly disagree, **2**- disagree, **3**– not sure, **4-** agree, **5**- strongly agree.

3.10.1 Quantitative Analysis

The raw data quantitative data collected using the SAQ was cleaned by editing to ensure it is accurate, consistent and complete. Thereafter categorisation or coding of the responses was done. This was followed by entry of data into the SPSS programme Version 20. The data was then analysed to generate descriptive statistics on the background information about the respondents each of the three constructs under the independent variable. Furthermore, regression models were also carried out to determine the correlation between the independent and dependent variables.

3.10.2 Qualitative Analysis

Content analysis was used to analyse the qualitative data after having edited it manually, categorised it into concepts, reviewed the data critically in order to clarify concepts, and corroborating the data by evaluating alternative explanations, disconfirming evidence, and searching for negative cases.

3.11 Ethical Consideration

To ensure no one suffers adverse consequences from this research activity ethical considerations were taken into account. The considerations included, getting clearance before going out to conduct the study by obtaining a letter of introduction from the University. The letter was taken to Total Services Inc. to seek permission from the management of the company to allow the researcher to conduct study.

The researcher obtained an informed consent of the respondents by explaining to them why the study was important so that they would have a complete understanding of the purpose and methods to be used in the study, the risks involved, and the demands placed upon them as a participant, all geared towards requesting for their permission to participate in the survey. Confidentiality was upheld in the study by explaining to the respondents that information they were to provide would be kept confidential and that this this would be used for academic purposes only.

3.12 Limitations to the Study

Much as the study had limitations, this did not hinder the researcher from carrying out the study. The main limitations experienced were limitations in terms of content scope, geographical scope, and poor response rates. In terms of content scope, it is important to note that study focused on a limited number of objectives. Moreover, the research problem touches on various components of environmental risk management related issues. Although this was a limitation, the researcher was able to overcome this by making a comprehensive coverage of the components of Environmental Risk Management.

The study was conducted in a single firm with an assumption that the results can be replicated and applied to any other oil and yet oil and gas companies differ in terms of business in that some oil and gas companies are processors, others are miners, while some others deal in other products other than oil and gas. This limitation, however, did not vitiate the results of the study since most

of the companies have similar or related objectives.

The researcher also faced a challenge of poor response rates. However, the researcher overcame this by creating rapport with the respondents and further reminding them from time to time with the help of a research assistant to fill up the questionnaires. In as far as the interview was concerned appointments were made with the respondents at their convenience. With this done, the response rates consequently obtained was above the acceptable level.

3.13 Conclusions

This chapter set out the methodology that was adopted to undertake the research. A descriptive design was adopted involving a case study strategy, associated with a mixed research approach. The sample size was determined by the Krejcie and Morgan table and arrived at by the use of purposive and simple random sampling techniques. The key method and instrument of data collection used was questionnaires supplemented by face to face interviews and documentary review. Ethical considerations were addressed, with the key issues being clearance from the university, consent and confidentiality.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter is on the presentation, analysis and discussion of the findings of the present study on the Environmental Risk Management in Total Energies, Uganda. The presentation, analysis and discussion was done in six sections with the first section being response rate, followed by the section on the background characteristics of the respondents.

This was followed by descriptive statistics. The first objective which was to understand policies established to manage the environmental risks in Total Energies, Uganda, the second objective which was on determining how Environmental Risk Management can affect growth in Total Energies, Uganda, the third objective which was on policies implemented considering uncertainties Total Energies, Uganda. are presented, and the fourth objective was the relationship between sustainable environments in an oil and gas industry and gas sector in a developing country and long term effects of pollution. The last section of the chapter closes with a presentation, analysis, and discussion of findings on the primary objective of the study, which was to examine the environmental risk management in Total Energies, Uganda.

4.1 Response Rate

The sample of the study consisted of 80 respondents drawn from a population of 100 respondents. Out of a sampling frame of 80 respondents, 76 responses were received and this translated to a 95% response rate. The response rate was considered appropriate because any response above 75% is classified as best (Sekaran, 2003). The distribution of the response rates is shown in Table 4.1.

Table 4.1: Response Rate

No	Response	Frequency	Percentage (%)
1.	Responded	76	95
2.	Not responded	4	5
Total		80	100

Source: Field findings (2021)

4.2 Background Characteristics of the Respondents

This section is on the various background characteristics. These characteristics include age, gender, position held, and years of service in Total Energies, Uganda.

4.2.1 Age of the Respondents

The ages of the respondents were categorised into those from 20 years and below, 21-30 years, 31-40 years, 41-50 years, and 51 years and above. The justification for the choice of age as a demographic characteristic in the study is because the inclusion of age brings out the true picture as to whether a respondent is a minor or major (Kothari 2004). The distribution of the respondents' age groups is shown in Table 4.2.

Table 4.2: Age

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 years and below	1	1.3	1.3	1.3
	21-30 years	31	40.8	40.8	42.1
	31-40 years	21	27.6	27.6	69.7
	41-50 years	12	15.8	15.8	85.5
	51 years and above	11	14.5	14.5	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

From Table 4.2 it can be noted that one respondent (1.3% of the sample size) was aged 20 years and below, 31 of the respondents (40.8%) were aged 21-30 years, 21 of the respondents (27.6%) were aged 31-40 years, 12 respondents (15.8%) were aged 41-50 years, and 11 respondents (14.9%) were aged 51 years and above. This implied that Total Energies, Uganda has well balanced staff in terms of age to enable succession planning and continuity of Environmental Risk Management.

4.2.2 Gender

The gender of the respondents was classified into male and female. The idea behind ascertaining the gender of the respondents is because collecting data that incorporates responses from both genders is more reliable than getting data from a single gender sample size. The results of the responses on gender are presented in Table 4.3.

Table 4.3: Gender

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	35	46.1	46.1	46.1
	Female	41	53.9	53.9	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As shown in Table 4.3, the majority of the respondents (53.9%) were female and the rest of the respondents (46.1%) were male. Hence, females significantly dominated Total Energies, Uganda.

4.2.3 Level of Education

According to Sekaran (2003), it is important in any social investigation research to involve people that have attained an acceptable level of literacy and numeracy in order to be in position to understand and interpret content in the questionnaire. Due to this reason, the researcher deemed it fit to include a section on education level in the SAQ covering the following levels: secondary, diploma or first degree, postgraduate and other. The responses are shown in Table 4.4.

Table 4.4: Level of Education

Level of Education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	16	21.1	21.1	21.1
	Diploma or first degree	50	65.8	65.8	86.8
	Postgraduate	9	11.8	11.8	98.7
	Other (please specify)	1	1.3	1.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

The results in Table 4.4 depict that, 21.1% of the respondents had secondary education, 65.8% had diplomas or first degrees, 11.8% had postgraduate degrees, and 1.3% of the respondents had probably other qualifications. This implied that all respondents had attained a certain level of formal education that would help them in understanding the guidelines for Environmental Risk Management and that the responses given would be perceived to be a true expression of their understanding of Environmental Risk Management.

4.2.4 Position Held

In terms of educational level, 19.7% of the respondents held senior management positions, 52.6% of the respondents were officers, and 27.6% of the respondents were clerks. This distribution is illustrated in Table 4.5.

Table 4.5: Position Held

Position		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior Manager	15	19.7	19.7	19.7
	Officer	40	52.6	52.6	72.4
	Clerk	21	27.6	27.6	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

4.2.5. Years of Service in this Organisation

Time of service in the organization comprised of a period less than year, 2-4 years, 5-7 years, and more than 7 years. It was prudent to consider this as a demographic characteristic because time of service on the job is a key determinant of organisation culture. The results on this are presented in Table 4.6.

Table 4.6: Years of Service in this Organization

Years of service		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 year	6	7.9	7.9	7.9
	2-4 years	29	38.2	38.2	46.1
	5-7 years	24	31.6	31.6	77.6
	7 years>	17	22.4	22.4	100.0
	Total	76	100.0	100.0	

Source: Source: Field findings (2021)

As evident in Table 4.6, 7.9% of the respondents had less than 1 years' experience with Total Services Inc., 38.2% had 2-4 years' experience, 31.6% had 5-7 years' experience, and 22.4% had more than 7 years' experience. This implies that there is ample opportunity to share experience to help boost the Risk Management System and guarantee its continuity. This indicated that this experience can be used to improve Environmental Risk Management and orient new employees on Environmental Risk Management to achieve growth and sustainability. Experience also implied that the information given by respondents during the study was reliable.

4.3 Descriptive Statistics

This section presents descriptive statistics on control environment, environmental risk management activities, risk assessment and growth and sustainability.

4.3.1 Control Environment

Descriptive statistics on control environment encompassed the use of frequency tables, means, range and standard deviation. In regard to the use of frequency tables, respondents were asked various questions on issues surrounding control environment in Total Energies, Uganda, including, among other things, as to whether: the organisation has a good accounting and financial management system, if there is a clear organisational structure, policies and procedures are documented for individual reference, and systems have been put in place to correct and avoid errors. The following were the responses.

Table 4.7: This Company has a good Environmental Risk Management System

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	5.3	5.3	5.3
	Disagree	9	11.8	11.8	17.1
	Not sure	12	15.8	15.8	32.9
	Agree	40	52.6	52.6	85.5
	Strongly agree	11	14.5	14.5	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As seen from the Table 4.7, four respondents (5.3%) strongly disagreed that Total Energies, Uganda. had a good accounting and financial management system, nine respondents (11.8%) disagreed, 12 respondents (15.8%) were not sure, 40 respondents (52.6%) agreed, and 11 respondents (14.6%) strongly agreed. The above results imply that Total Energies, Uganda, has a good Environmental Risk Management system. Because the majority (67.1%) agreed and strongly agreed, it outweighed the others.

Table 4.9 there is a clear organisational structure in Total Services

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Strongly disagree	1	1.3	1.3	1.3
	Disagree	5	6.6	6.6	7.9
	Not sure	7	9.2	9.2	17.1
	Agree	41	53.9	53.9	71.1
	Strongly agree	22	28.9	28.9	100.0
	Total	76	100.0	100.0	

Source: Primary data 2021

The analysis as shown in Table 4.8 shows that, one respondent (1.3%) strongly disagreed that there is a clear organisational structure in Total Energies, Uganda., five respondents (6.6%) disagreed, seven respondents (9.2%) were not sure, 41 respondents (53.9%) agreed, and 22 respondents (28.9%) strongly agreed. Basing on this, it is right to say that there is a clear organisational structure in Total Energies, Uganda. These results are in agreement with the findings by Daft (2004) and Wolf (2002) who found that organizational structure defines how job tasks are formally divided, grouped and coordinated and that organizational structure has a direct effect on the success of an organizational operational strategy, respectively.

Table 4.9: Policies and Procedures are documented for Individual Reference

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.3	1.3	1.3(since its only one person, it's a big outlet)
	Disagree	14	18.4	18.4	21.1
	Not sure	15	19.7	19.7	40.8
	Agree	29	38.2	38.2	78.9
	Strongly agree	16	21.1	21.1	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

From Table 4.9, it can be noted that two respondents (2.6%) strongly disagreed that policies and procedures are documented for individual reference in Total Energies, Uganda, 14 respondents (18.4%) disagreed, 15 respondents (19.7%) had neutral views, 29 respondents (38.2%) agreed, and 16 respondents (21.1%) strongly agreed. The results therefore show that there is documentation of policies and procedures for individual reference in Total Energies, Uganda.

Table 4.10: Systems have Been Put in Place to Correct and Avoid Errors

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	5.3	5.3	5.3
	Disagree	23	30.3	30.3	35.5
	Not sure	12	15.8	15.8	51.3
	Agree	25	32.9	32.9	84.2
	Strongly agree	12	15.8	15.8	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As shown in Table 4.10, four respondents (5.3%) strongly disagreed that systems have been put in place to correct and avoid errors in Total Energies, Uganda, 23 respondents (30.3%) disagreed, 12 respondents (15.8%) had neutral views, 25 respondents (32.9%) agreed, and 12 respondents (15.8%) strongly agreed. Based on the results in Table 4.10 the researcher inferred that systems have been put in place to correct and avoid errors in Total Energies, Uganda.

In addition to the use of the frequency tables, descriptive analysis was carried out, using the mean, range, and standard deviation. The findings (Table 4.11) indicated an overall mean of 3.6789 and a variance of 1.081 for the six-year period (2015-2021) covered in the study. The results indicate that there was no much variability in control environment in Total Energies, Uganda over the period.

Table 4.11: Descriptive for Control Environment

	Range	Min	Max	Mean	Variance
This organization has a good environmental risk management system	4.00	1.00	5.00	3.5921	1.098
There's a clear organizational structure in Total Services Inc.	4.00	1.00	5.00	4.0263	.773
Policies and procedures are documented for individual reference	4.00	1.00	5.00	3.5658	1.209
Systems have been put in place to correct and avoid errors	4.00	1.00	5.00	3.2368	1.436
Management and the Board are people of high integrity	4.00	1.00	5.00	3.9733	.891
Average	4.000	1.00	5.00	3.6789	1.081

Source: Field findings (2021)

The above results are in tandem with what one of the key informants interviewed pointed out. The interviewee expressed that:

“Control environment is not effective because the board, which is responsible for giving strategic direction of the company, is not involved in the operations of the company and therefore cannot hold the management accountable. In addition, the fact that the general manager has many people reporting to him clogs the system. In other words, appropriate levels of activity are not assigned to the staff”.

Secondly, these results are contrary to the findings of Kinyua et al. (2015) who concluded that there was significant association between internal control environment and growth and sustainability, and recommended that internal control environment should be enhanced to further improve the growth and sustainability of companies.

4.3.2 Environmental risk management activities

Some of the questions on Environmental Risk Management activities that were tabulated are questions as to whether: policies and procedures exist to guide critical decision making, there is proper and close supervision of staff, sensitive information is restricted to certain employees only, employees are rotated periodically, and independent reconciliations of revenue collection is done on a regular basis. The responses on these questions are presented in Tables 4.12, 4.13, 4.14, 4.15, and 4.16.

Table 4.12: Policies and Procedures Exist to Guide Critical Decision Making

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	2.6	2.6	2.6
	Disagree	14	18.4	18.4	21.1
	Not sure	15	19.7	19.7	40.8
	Agree	29	38.2	38.2	78.9
	Strongly agree	16	21.1	21.1	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

Table 4.12 shows that two respondents (2.6%) strongly disagreed that policies and procedures exist to guide critical decision making in Total Energies, Uganda, 14 respondents (18.4%) disagreed, 29 respondents (38.2%) had neutral views, and 16 respondents (21.1%) strongly agreed. Since the majority of the respondents agreed, the researcher concludes that policies and procedures exist to guide critical decision making in Total Energies, Uganda.

Table 4.13: There's Proper and Close Supervision of Staff

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	6.6	6.6	6.6
	Disagree	30	39.5	39.5	46.1
	Not sure	14	18.4	18.4	64.5
	Agree	19	25.0	25.0	89.5
	Strongly agree	8	10.5	10.5	100.0
	Total	76	100.0	100.0	

Source: Source: Field findings (2021)

As revealed in Table 4.13, five respondents (6.5%) strongly disagreed that there's proper and close supervision of staff in Total Energies, Uganda, 30 respondents (39.5%) disagreed, 14 respondents (18.4%) were not sure, 19 respondents (25%) agreed, and eight respondents (10.5%) strongly agreed. Since the majority of the respondents were in disagreement (about 46%) the researcher concludes that there is no proper and close supervision of staff in Total Energies Uganda.

Table 4.14: Sensitive Information is Restricted to Certain Employees Only

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	18	23.7	23.7	23.7
	Not sure	7	9.2	9.2	32.9
	Agree	36	47.4	47.4	80.3
	Strongly agree	15	19.7	19.7	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As evidenced in Table 4.14, 18 respondents (23.7%) disagreed that sensitive information is restricted to certain employees only in Total Energies, Uganda, seven respondents (9.2%)

disagreed, 36 respondents (47.4%) agreed, and 15 respondents (19.7%) strongly agreed. Since the majority of the respondents were in agreement (67.1%) the researcher concludes that sensitive information is restricted to certain employees only in Total Energies, Uganda.

Table 4.15: Employees are Rotated Periodically

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	8	10.5	10.5	10.5
	Disagree	41	53.9	53.9	64.5
	Not sure	14	18.4	18.4	82.9
	Agree	12	15.8	15.8	98.7
	Strongly agree	1	1.3	1.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

On the issue of rotating employees periodically, eight respondents (10.5%) disagreed that employees are rotated periodically, 41 respondents (53.9%) were not sure, 12 respondents (15.8%) agreed, and 1 respondent (1.3%) strongly agreed, as shown in Table 4.15. Since a bigger percentage of the respondents disagreed, the conclusion is that employees are not rotated periodically in Total Energies, Uganda.

Table 4.16: Independent Reconciliations of Revenue Collection is Done on a Regular Basis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	5.3	5.3	5.3
	Disagree	30	39.5	39.5	44.7
	Not sure	20	26.3	26.3	71.1
	Agree	17	22.4	22.4	93.4
	Strongly agree	5	6.6	6.6	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

Table 4.16 shows that four respondents (5.3%) strongly disagreed that independent reconciliations of revenue collection are done on a regular basis in Total Energies, Uganda, 30 respondents (39.5%) disagreed, 20 respondents (26.3%) were not sure, 17 respondents (22.4%), and five respondents (6.6%) strongly agreed. Since more respondents disagreed, the researcher infers that independent reconciliations of revenue collection are not done on a regular basis in Total Energies, Uganda.

In addition to the descriptive statistics presented and interpreted one of the respondents interviewed on the effectiveness of Environmental Risk Management activities in Total Energies, Uganda, had this to say:

“Environmental Risk Management activities are not very effective. Some transactions don’t have parameters to follow and management doesn’t have clearly specified activities that need supervision. Other transactions do not follow any written policies and procedures. This is

especially because of the structure of the organization".

Besides the use of frequency tables, descriptive were carried out for Environmental Risk Management activities and the results as indicated in Table 4.17 show an overall mean of 3.4131 and a variance of 1.289 for the six-year period (2016-2021) and hence, indicating that there was no much variability in Environmental Risk Management activities in Total Energies, Uganda.

Table 4.17: Descriptive for Environmental risk management activities

	Range	Min	Max	Mean	Variance
Policies and procedures are documented for individual reference	4.00	1.00	5.00	3.5658	1.209
Systems have been put in place to correct and avoid errors	4.00	1.00	5.00	3.2368	1.436
Management and the Board are people of high integrity	4.00	1.00	5.00	3.9733	.891
Policies and procedures exist to guide critical decision making	4.00	1.00	5.00	3.3553	1.565
There's proper and close supervision of staff	4.00	1.00	5.00	2.9342	1.342
Average	4.00	1.00	5.00	3.4131	1.289

Source: Field findings (2021)

4.3.3 Risk Assessment

The third objective of the study was to examine the effect of Risk Assessment on the growth and sustainability of Total Energies, Uganda. To achieve this objective descriptive statistics were first carried out and the results obtained are presented in Table 4.18, 4.19, 4.20, 4.21, and 4.22.

Table 4.18: There are Clear Objectives which are Periodically Reviewed and Updated

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	6.6	6.6	6.6
	Disagree	26	34.2	34.2	40.8
	Not sure	17	22.4	22.4	63.2
	Agree	19	25.0	25.0	88.2
	Strongly agree	9	11.8	11.8	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

From the findings in Table 4.18, five of the respondents (6.6%) strongly disagreed that there are clear objectives which are periodically reviewed and updated in Total Energies, Uganda, 26 respondents (34.2%) disagreed, 17 respondents (22.4%) were not sure, 19 respondents (25%) agreed, and nine respondents (11.8%) strongly agreed. Because a majority of the respondents disagreed, the researcher concluded that there are no clear objectives, which are periodically reviewed and updated in Total Energies, Uganda.

Table 4.19: There is a Criteria for Ascertainment of Fraud Related Risks

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	7.9	7.9	7.9
	Disagree	32	43.4	43.4	51.3
	Not sure	17	22.4	22.4	73.7
	Agree	19	25.0	25.0	98.7
	Strongly agree	1	1.3	1.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

From the findings in Table 4.19, 6 respondents (7.9%) strongly disagreed that there is a criterion for ascertainment of fraud related risks in Total Energies, Uganda, 32 respondents (43.4%) disagreed, 17 respondents (22.4%) were not sure, 19 respondents (25%) agreed, and one respondent (1.3%) strongly agreed. Based on the higher percentage of the respondents indicating their disagreement with the fact that there is a criterion for ascertainment of fraud related risks the researcher concluded that there are no criteria for ascertainment of fraud related risks in Total Energies, Uganda.

Table 4.20: There are Mechanisms for Mitigation of Critical Risks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	7.9	7.9	7.9
	Disagree	32	43.4	43.4	51.3
	Not sure	18	23.7	23.7	75.0
	Agree	14	18.4	18.4	93.4
	Strongly agree	5	6.6	6.6	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As shown in Table 4.20, six respondents (7.9%) strongly disagreed that there are mechanisms for mitigation of critical risks in Total Energies, Uganda, 32 respondents (43.4%) disagreed, 18 respondents (23.7%) were not sure, 14 respondents (18.4%) agreed, and 5 respondents (6.6%) strongly agreed. Based on the results in Table 4.20 the researcher inferred that there are no mechanisms for mitigation of critical risks in Total Energies, Uganda.

Table 4.21: Change of New Staff is Clearly Examined for the Risks it can Cause

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	15.8	15.8	15.8
	Disagree	31	40.8	40.8	56.6
	Not sure	18	23.7	23.7	80.3
	Agree	13	17.1	17.1	97.4
	Strongly agree	2	2.6	2.6	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As shown in Table 4.21, 12 respondents (15.8%) strongly disagreed that change of new staff is clearly examined for the risks it can cause in Total Energies, Uganda, 31 respondents (40.8%) disagreed, 18 respondents (23.7%) were not sure, 13 respondents (17.1%) agreed, and two respondents (2.6%) strongly agreed. Based on the results in Table 4.21, the researcher concluded that change of new staff is clearly examined for the risks it can cause in Total Energies, Uganda.

Table 4.22: There are Controls for Approving Decisions Regarding Financial Alternatives

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	7.9	7.9	7.9
	Disagree	32	43.4	43.4	51.3
	Not sure	17	22.4	22.4	73.7
	Agree	19	25.0	25.0	98.7
	Strongly agree	1	1.3	1.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As exhibited in Table 4.22, six respondents (7.9%) strongly disagreed that there are controls for

approving decisions regarding financial alternatives in Total Energies, Uganda, 32 respondents (43.4%) disagreed, 17 respondents (22.4%) were not sure, 19 respondents (25.0%) agreed, and one respondent (1.3%) strongly agreed. Based on the results in Table 4.22 the researcher concluded that there are no controls for approving decisions regarding financial alternatives in Total Energies, Uganda, because 43.4% of the respondents disagreed.

With regard to risk assessment, a key respondent also revealed that:
"Risks are not fully assessed. This is because the company doesn't fully function as a business but also as a social enterprise. Since its mission is to improve the livelihoods of the consumers, the company doesn't do price Risk Management on the purchase prices of oil and gas. For example, it only buys oil and gas from registered members at a high price and yet it could get the same oil and gas from non-members at a much lower price which would earn a huge profit for the company".

The descriptive for risk assessment (see Table 4.23) shows an overall mean of 2.7211, and the variance was 1.099, suggesting that there was no wide dispersion in the Risk Assessment distribution over the six years covered by this study. The maximum for was 5.00 with a minimum of 1.00 and a range of 4.00. Due to fact that the gap between the maximum and minimum was wide, this suggested that there was a great improvement in Risk Assessment in Total Energies, Uganda, over the period.

Table 4.23: Descriptive for Risk Assessment

	Range	Min	Max	Mean	Variance
There are clear objectives which are periodically reviewed and updated	4.00	1.00	5.00	3.0132	1.346
There is a criteria for ascertainment of fraud related risks to the organization	4.00	1.00	5.00	2.6842	.966
There are mechanisms for mitigation of critical risks	4.00	1.00	5.00	2.7237	1.136
Change of new staff is clearly examined for the risks it can cause	4.00	1.00	5.00	2.5000	1.080
There are controls for approving decisions regarding financial alternatives	4.00	1.00	5.00	2.6842	.966
Average	4.00	1.00	5.00	2.7211	1.099

Source: Field findings (2021)

4.3.4. Growth and sustainability

Some of the questions on growth and sustainability that warrant presentation in form of frequency tables included questions on whether the number of shares have increased over the past three years, whether EPS has increased over the past three years, whether the risk management policies are effective, and whether there has been an increase in growth. The responses on these questions are presented in Tables 4.24, 4.25, 4.26, and 4.27.

Table 4.24: The number of Shares Have Increased Over the Past Three Years

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	14.5	14.5	14.5
	Disagree	22	28.9	28.9	43.4
	Not sure	16	21.1	21.1	64.5
	Agree	20	26.3	26.3	90.8
	Strongly agree	7	9.2	9.2	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As seen in Table 4.24, 11 respondents (14.5%) strongly disagreed that the number of shares have increased over the past three years, 22 respondents (28.9%) disagreed, 16 respondents (21.1%) were not sure, 20 respondents (26.3%) agreed, and 7 respondents (9.2%) strongly agreed. Based on the results in Table 4.24, the researcher concluded that that the number of shares have increased over the past three years in Total Energies, Uganda.

Table 4.25: EPS has increased over the Past Three Years

Opinion		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	17.1	17.1	17.1
	Disagree	28	36.8	36.8	53.9
	Not sure	14	18.4	18.4	72.4
	Agree	17	22.4	22.4	94.7
	Strongly agree	4	5.3	5.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As illustrated in Table 4.25, 13 respondents (17.1%) strongly disagreed that EPS has increased over the past three years, 28 respondents (36.8%) disagreed, 14 respondents (18.4%) were not sure, 17 respondents (22.4%) agreed, and 4 respondents (5.2%) strongly agreed. Based on the results in Table 4.25, the researcher inferred that that EPS hasn't increased over the past three years in Total

Services Inc.

Table 4.26: Effectiveness of Policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	14.5	14.5	14.5
	Disagree	19	25.0	25.0	39.5
	Not sure	16	21.1	21.1	60.5
	Agree	26	34.2	34.2	94.7
	Strongly agree	4	5.3	5.3	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As depicted in Table 4.26, 11 respondents (14.5%) strongly disagreed that policies to manage environmental risks were effective, 19 respondents (25.0%) disagreed, 16 respondents (21.1%) were not sure, 26 respondents (34.2%) agreed, and 4 respondents (5.3%) strongly agreed. Because the majority of the respondents agreed that that policies to manage environmental risks were effective it can be concluded that the policies put in place were effective Total Energies, Uganda.

Table 4.27: Effect of Environmental Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	11.8	11.8	11.8
	Disagree	27	35.5	35.5	47.4
	Not sure	21	27.6	27.6	75.0
	Agree	16	21.1	21.1	96.1
	Strongly agree	3	3.9	3.9	100.0
	Total	76	100.0	100.0	

Source: Field findings (2021)

As evidenced in Table 4.27, 9 respondents (11.8%) strongly disagreed that environmental

management was effective, 27 respondents (35.5%) disagreed, 21 respondents (27.6%) were not sure, 16 respondents (21.1%) agreed, and 3 respondents (3.9%) strongly agreed. Because the majority of the respondents (27) disagreed that environmental management was effective in Total Energies, Uganda, it can be concluded that environmental management wasn't effective in Total Energies, Uganda.

Last but not least, the descriptive for performance in Table 4.28 shows an overall mean of 2.7741 with variance of 2.349, suggesting that there was a wide dispersion in performance distribution over the six years covered by this study

Table 4.28: Descriptive for Performance

	Range	Min	Max	Mean	Variance
The number of shares have increased over the past three years	4.00	1.00	5.00	2.8684	1.502
EPS has increased over the past three years	4.00	1.00	5.00	2.6184	1.359
Effectiveness of policies established over the past three years	4.00	1.00	5.00	2.9868	6.866
Effectiveness of policies established	4.00	1.00	5.00	2.9079	1.391
There has been an increase in the profit before interest and tax over the past three years	4.00	1.00	5.00	2.6447	1.405
There's prioritization when employing capital to ensure better returns	4.00	1.00	5.00	2.6184	1.572
Average	4.00	1.00	5.00	2.7741	2.349

Source: Field findings (2021)

4.4. Risk management system and Growth and sustainability

The results of section B of the questionnaire are presented below, designed to address the objectives and research questions.

4.4.1. Relationship between Control Environment and Growth and sustainability of Total Energies, Uganda.

In order to ascertain the effect of control environment on growth and sustainability, a correlation was first performed to assess if a relationship existed between control environment and growth and sustainability and how significant this relationship was. The results of the correlation are summarized in the Table 4.29:

Table 4.29: Correlation between Control Environment and Growth and sustainability

		Control Environment	Growth and sustainability
Control Environment	Pearson Correlation	1	.207
	Sig. (2-tailed)		.072
	N	76	76
Growth and sustainability	Pearson Correlation	.207	1
	Sig. (2-tailed)	.072	
	N	76	76

Source: Field findings (2021)

The results presented in the Table 4.29 shows that there is a weak positive and insignificant correlation between control environment and growth and sustainability in Total Energies, Uganda. The implication of this is that when environmental risk management activities are checked, the growth and sustainability of Total Energies, Uganda will significantly improve.

4.4.2 Relationship between Environmental risk management activities on the Growth and sustainability of Total Energies, Uganda.

Having established information on the nature of Environmental Risk Management activities in

Total Energies, Uganda, the next paragraphs document information on the effect of environmental risk management activities on the growth and sustainability of Total Energies, Uganda. This objective was tested first using a bivariate correlation. The interpretation of these results is that there was a positive significant relationship between Environmental Risk Management activities and growth and sustainability in Total Energies, Uganda. The results of the correlation are shown in Table 4.33.

Table 4.33: Correlation between Environmental Risk Management and Growth and Sustainability

		Environmental Risk Management	Growth and Sustainability
Environmental risk management activities	Pearson Correlation	1	.604**
	Sig. (2-tailed)		.000
	N	76	76
Growth and sustainability	Pearson Correlation	.604**	1
	Sig. (2-tailed)	.000	
	N	76	76

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

Source: Field findings (2021)

4.4.3. Relationship between Risk Assessment on the Growth and sustainability of Total Energies, Uganda.

The third objective of the study was to examine the effect of risk assessment on the growth and sustainability of Total Energies, Uganda.

The third objective of the study was to examine the effect of risk assessment on the growth and sustainability of Total Energies, Uganda. In a bid to achieve this, a correlation was first run. The result of the correlation is shown in the Table 4.37.

Table 4.37: Correlation between Risk Assessment and Growth and sustainability

		Growth and sustainability	Risk Assessment
Growth and sustainability	Pearson Correlation	1	.676**
	Sig. (2-tailed)		.000
	N	76	76
Risk Assessment	Pearson Correlation	.676**	1
	Sig. (2-tailed)	.000	
	N	76	76

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

Source: Field findings (2021)

The results of the bivariate correlation in Table 4.37 yielded a correlation coefficient of r .676, with a P value less than 0.01. The interpretation of these results is that there was a strongly positively significant relationship between risk assessment and growth and sustainability in Total Energies, Uganda.

4.5 Conclusion

In conclusion, the chapter presented findings from the study. The results of multiple linear regressions revealed that Risk Management system contributes about 51% to the growth and sustainability of Total Energies, Uganda, and that the effect was significant.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONAND RECOMMENDATIONS

5.0 Introduction

The study investigated the relationship between Environmental Risk Management and growth and sustainability of the oil and gas industry in Uganda taking a case study of Total Energies, Uganda.

This chapter presents the summary of the findings, discussion, conclusions obtained from the findings and the recommendations on analysis and interpretation of the findings

5.1 Summary of the study findings

5.1.1 Demographic characteristics (background information)

From the findings the majority of the respondents (53.9%) were female and the rest of the respondents (46.1%) were male. Hence, females significantly dominated Total Energies, Uganda. In terms of Age, (1.3% of the sample size) was aged 20 years and below, 31 of the respondents (40.8%) were aged 21-30 years, 21 of the respondents (27.6%) were aged 31-40 years, 12 respondents (15.8%) were aged 41-50 years, and 11 respondents (14.9%) were aged 51 years and above. This implied that TOTAL has well balanced staff in terms of age to enable succession planning and continuity of Environmental Risk Management. In the aspect of the highest level of education, 21.1% of the respondents had secondary education, 65.8% had diplomas or first degrees, 11.8% had postgraduate degrees, and 1.3% of the respondents had probably other qualifications. This implied that all respondents had attained a certain level of formal education that would help them in understanding the guidelines for Environmental Risk Management and that the responses given would be perceived to be a true expression of their understanding of Environmental Risk Management, findings further reveal In terms of educational level, 19.7% of the respondents held senior management positions, 52.6% of the respondents were officers, and 27.6% of the respondents were clerks. 9% of the respondents had less than 1 years' experience with Total Energies, Uganda, 38.2% had 2-4 years' experience, 31.6% had 5-7 years' experience, and 22.4% had more than 7 years' experience. This implies that there is ample opportunity to share experience to help boost the risk management system and guarantee its continuity.

5.1.2 Relationship between Control Environment and growth and sustainability of oil and gas industries in Uganda

Findings show that Majority of the respondents ((67.1%) agreed that the Company has a good Environmental Risk Management System while 17.1% disagreed. Majority of the respondents (82.8%) agreed that there's a Clear Organisational Structure in Total Energies, Uganda while 7.9% disagreed. Results further showed that the highest number of respondents (59.3%) agreed that

Policies and Procedures are documented for Individual Reference while 19.7% disagreed. Majority of the respondents (48.7%) agreed Systems have been put in place to correct and avoid errors while 35.6% disagreed. The findings indicated an overall mean of 3.6789 and a variance of 1.081 for the six-year period (2015-2021) covered in the study. The results indicate that there was no much variability in control environment in Total Energies, Uganda over the period. Lastly, there is a weak positive and insignificant correlation between control environment and growth and sustainability in Total Energies, Uganda.

5.1.3 Relationship between Environmental risk management activities and growth and sustainability

In relation to the study findings, it was observed that Majority of the respondents (59.3%) agreed Policies and Procedures exist to guide critical decision making while 21% disagreed. The findings from the study further revealed that respondents (35.5%) agreed that there's Proper and Close Supervision of Staff while 46.1% of the respondents disagreed. In line with Sensitive Information, the findings showed that Majority of the respondents (67.4%) agreed that Sensitive Information is Restricted to Certain Employees Only while 32.9% of the respondents disagreed to the statement. In relation to the study findings, it was observed that Majority of the respondents (64.4%) disagreed that Employees are Rotated Periodically while 17.1% agreed. Furthermore, Majority of the respondents (44.8%) agreed that Independent Reconciliations of Revenue Collection is done on a Regular Basis while 29% disagreed. Findings further showed an overall mean of 3.4131 and a variance of 1.289 for the six-year period (2016-2021) and hence, indicating that there was no much variability in Environmental Risk Management activities in Total Energies, Uganda. Lastly, there was a positive significant relationship between environmental risk management activities and growth and sustainability in Total Energies, Uganda.

5.1.4 Relationship Risk Assessment and growth and sustainability of gas industry in Uganda

In relation to the study findings, it was observed that the Minority of the respondents (36.8%)

agreed there are Clear Objectives which are Periodically Reviewed and Updated while 40.8% disagreed. The findings further elaborate that Majority of the respondents (51.3%) disagreed that there is a Criteria for Ascertainment of Fraud Related Risks 26.3% of the respondents agreed. In addition, it was observed that (51.3%) of the respondents disagreed that that There are Mechanisms for Mitigation of Critical Risks while 25% disagreed. Furthermore, findings from study show that Majority of the respondents (56.6%) disagreed that Change of New Staff is Clearly Examined for the Risks it can Cause while 19.7% agreed. As seen Majority of the respondents (59.2%) disagreed that there are Controls for Approving Decisions Regarding Financial Alternatives while 26.3% agreed. The maximum for was 5.00 with a minimum of 1.00 and a range of 4.00. Due to fact that the gap between the maximum and minimum was wide, this suggested that there was a great improvement in risk assessment in Total Energies, Uganda, over the period. There is a positive significant relationship between risk assessment and growth and sustainability.

5.2 Conclusion

The research findings showed that there was a positive relationship between Environmental Risk Management and growth and sustainability of oil and gas industries in Uganda. The dimensions of environmental risk management included control environment, control activities and risk assessment and the dimensions of growth and sustainability included earnings per share, earnings per capital invested and return on equity. The effect was positive.

5.2.1 Control environment

Findings show that company has a good Environmental Risk Management System, Clear Organisational Structure, documented policies and procedures for Individual Reference and systems put in place to correct errors. There is a weak positive and insignificant correlation between control environment and growth and sustainability in Total Energies, Uganda.

5.2.2 Control Activities

In relation to the study findings, it was observed Policies and Procedures Exist to Guide Critical Decision Making while 21% disagreed, there is no Proper and Close Supervision of Staff while 46.1% of the respondents disagreed, Sensitive Information is Restricted to Certain Employees

Only, there is no periodic rotation of Employees and Independent Reconciliations of Revenue Collection is done on a Regular Basis. In conclusion, there is a positive significant relationship between environmental risk control activities and growth and sustainability.

5.2.3 Risk assessment

In relation to the study findings, it was observed that there are no Clear Objectives which are Periodically Reviewed and Updated there is no Criteria for Ascertainment of Fraud Related Risks, There are no Mechanisms for Mitigation of Critical Risks, Change of New Staff is not Clearly Examined for the Risks it can Cause there are no Controls for Approving Decisions Regarding Financial Alternatives. Conclusively, there is a positive significant relationship between risk assessment and growth and sustainability.

5.3 Recommendations

a) The study recommends that management should ensure that there is compliance and transparency by using the stipulated government policies, rules and regulations.
b) The researcher recommends that proper budgeting should be done by the firm to ensure that no procurements are done outside the budget.
c) The researcher further recommends that proper job design and specification should be ensured.

5.4 Areas of further research

The study was limited to three attributes of environment risk management and few variables of growth and sustainability. Future research should therefore focus on investigating the relationship between environmental risk management on customer satisfaction and profitability.

REFERENCES

Anderson D,R(2002) Environmental Risk Management: A Critical Part of Corporate Strategy

Bouder, F., Slavin, D. and L fstedt, R. (2009) The tolerability of risk : a new framework for risk management. Earthscan.

Bitkowska, B. and Bitkowska, A. (2018) 'Business process management centre of excellence as a source of knowledge', Business, Management and Education, 16(1), pp. 121– 132.

Crouhy, M., Galai, D. and Mark, R. (2000) Risk management. McGraw Hill.

Eckles, D. L., Hoyt, R. E. and Miller, S. M. (2014) 'The impact of enterprise risk management on the marginal cost of reducing risk: Evidence from the insurance industry', Journal of Banking & Finance, 43, 247–261

Freudenburg, W. R. and Gramling, R. (2011) Blowout in the Gulf : the BP oil spill disaster and the future of energy in America. MIT Press

Gunkov, A.G., & Kholopov, Yu.A. (2017). Environmental management as a tool to improve the economic potential of the enterprise. Vestnik SamGUPS, 1 (35), 80-83.

Gunkov, A.G., Kholopov, Yu.A., & Purygin, P.P. (2018). Prospects and environmental management system assessment from the point of integrated analysis of the enterprise potential. Scientific Journal NRU ITMO. Economics and Environmental Management Series, 1, 126-136

Kerzner, H. (no date) Project management : a systems approach to planning, scheduling, and controlling. Available at: https://www.wiley.com/enke/Project+Management:+A+Systems+Approach+to+Planning,+Scheduling,+and+C ontrolling,+12th+Edition-p-9781119165354 (Accessed: 24 March 2021).

Lam, J. (2014) Enterprise risk management: from incentives to controls. John Wiley and Sons

Louisot, J.-P. and Ketcham, C. H. (2014) ERM - Enterprise Risk Management : Issues and Cases. Wiley. Available at: https://www.wiley.com/enus/ERM+Enterprise+Risk+Management%3A+Issues+and+Cases-p-9781118539521 (Accessed: 24 March 2021).

Michalski, G. (2009) 'Inventory management optimization as part of operational risk management', Economic Computation and Economic Cybernetics Studies and Research, 213-222

Popov, E.V., & Semyachkov K.A. (2014). Empirical valuation of enterprise's ecological management. Management in Russia and abroad, 1, 129-135.

Qinqin, C. et al. (2014) 'Environmental risk source management system for the petrochemical industry', Process Safety and Environmental Protection, 92(3), 251- 260.

Rampini, A. A., Sufi, A. and Viswanathan, S. (2014) 'Dynamic risk management', Journal of Financial Economics, 111(2), 271-296.

Rodrigues, N., Oliveira, E. and Leitão, P. (2014) 'Self-organization Combining Incentives and Risk Management for a Dynamic Service-Oriented Multi-agent System', in IFIP Advances in Information and Communication Technology.

Stulz, R. M. (2006) Rethinking Risk Management. Available at: https://cpb-usw2.wpmucdn.com/u.osu.edu/dist/0/30211/files/2016/05/Rethinking-RiskManagement-1cnhar7.pdf (Accessed: 14 March 2021).

Stoneburner, G., Goguen, A. and Feringa, A. (2002) Risk management guide for information technology systems. Gaithers

APPENDIX ONE QUESTIONNAIRE

UGANDA CHRISTIAN UNIVERSITY (UCU)

INSTITUTE OF PETROLEUM STUDIES KAMPALA

BACHELOR'S RESEARCH PROJECT

Dear Respondent,

Ref: Request to fill a Questionnaire

My name is Maclean Negesa a student of the Institute of Petroleum Studies Kampala, pursuing a Bachelor's degree in Oil and Gas Management. As a requirement for the award of this degree, I am undertaking a research on 'Environmental Risk Management and growth and sustainability of oil industries' focusing on Total Energies Inc.as a Case Study. You are selected to participate in this study and I kindly request for your response which will help us better understand and appreciate the environmental risk management in oil and gas companies. Your responses will be kept strictly confidential. The information will be strictly use for academic research purposes.

Therefore, your participation in this study is highly appreciated. The information provided will be treated with strict confidentiality and shall not be used for any other purpose except for academic purposes.

Thank you for your cooperation.
Yours faithfully

Maclean Negesa

SECTION A: BACKGROUND INFORMATION

Kindly tick as an indication of your choice in the options given below:

1) Age

1) 20 years and below	☐	2) 21-30 years	☐
3) 31-40 years	☐		
4) 41-50 years	☐	5) 51 and above	☐

2) Gender

1) Male	☐	2) Female	☐

3) Level of education

1) Primary education	☐	2) Post Primary education	☐
3) Diploma/first degree	☐	4) Postgraduate	☐

5) Others (please specify) ……

4) Position held

1) CEO	☐	2) Senior Manager	☐
3) Officer	☐	4) Clerk	☐

5) Years of service in this organisation

1) Less than 1 year	☐	2) 2-4 years	☐
2) 3) 5-7years	☐	4) More than 7 years	☐

SECTIONS B TO C

For Sections B and C, you are provided with five (5) options ranging from Strongly Disagree (1) to Strongly Agree (5). In between these end-points are the options of is 2= Disagree (2), Not Sure (3), and Agree (4). Please tick the appropriate response.

SECTION B: INDEPENDENT VARIABLE (Environmental Risk Management)

No	Control Environment	1	2	3	4	5
6	This organisation has a good environmental risk management system					
7	There is a clear organisational structure in Total					
8	Policies and procedures are documented for individual reference					
9	Systems have been put in place to correct and avoid errors					
10	Management and the Board are people of high integrity					
	Control Activities					
11	Policies and procedures exist to guide critical decision making					
12	There is proper and close supervision of staff					
13	Sensitive information is restricted to certain employees only					
14	Employees are rotated periodically					
15	Independent reconciliations of revenue collection on regular basis is done					
	Risk Assessment					
16	There are clear objectives which are periodically reviewed and updated					
17	There is a criteria for ascertainment of fraud related risks to the organisation					
18	There are mechanisms for mitigation of critical risks					
19	Change of new staff is clearly examined for the risks it can cause					
20	There are controls for approving decisions regarding financial alternatives					

SECTION C: DEPENDENT VARIABLE (Growth and sustainability)

No	Earnings Per Share (EPS)	1	2	3	4	5

21	The number of shares has increased over the past three (3) years					
22	EPS have increased over the past three (3) years					
23	There is transparency in the accounting process					
24	The company has a strategy to reduce on production costs					
	Return On Equity (ROE)					
25	There has been an increase on ROE over the past three (3) years					
26	The increase in the ROE is communicated through financial statements					
27	There is a logical explanation of profitability targets for the company					
28	There is due diligence to avoid errors in acquisition of assets					
	Return On Capital Employed (ROCE)					
29	There has been an increase in the profit before interest and tax over the past three (3) years					
30	The organisation's borrowing has increased over the past three (3) years					
31	There has been an increase in ROCE					
32	There is prioritisation when employing capital to ensure better returns					

Appendix TWO: Interview Guide

1) Does Total Energies have and operate any environmental risk management? If yes, how does your role support it?
2) How effective is the environmental risk management in Total Energies Inc.?
3) How effective are the control activities in Total Energies Inc.?
4) Are risks assessed appropriately in Total Energies Inc.?
5) How would rate the financial performance of Total Energies Inc.?
6) In your own opinion do you think environmental risk in Total Energies Inc. has any significant effect on growth and sustainability? If yes, explain in brief?

Thanks you for your Time and Contribution

APPENDIX THREE TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Source: Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.