

UNIVERSITY OF GHANA

**EXPLORING SUSTAINABILITY PRACTICES IN THE GHANAIAN PETROLEUM
SECTOR – DOWNSTREAM COMPANIES IN FOCUS**



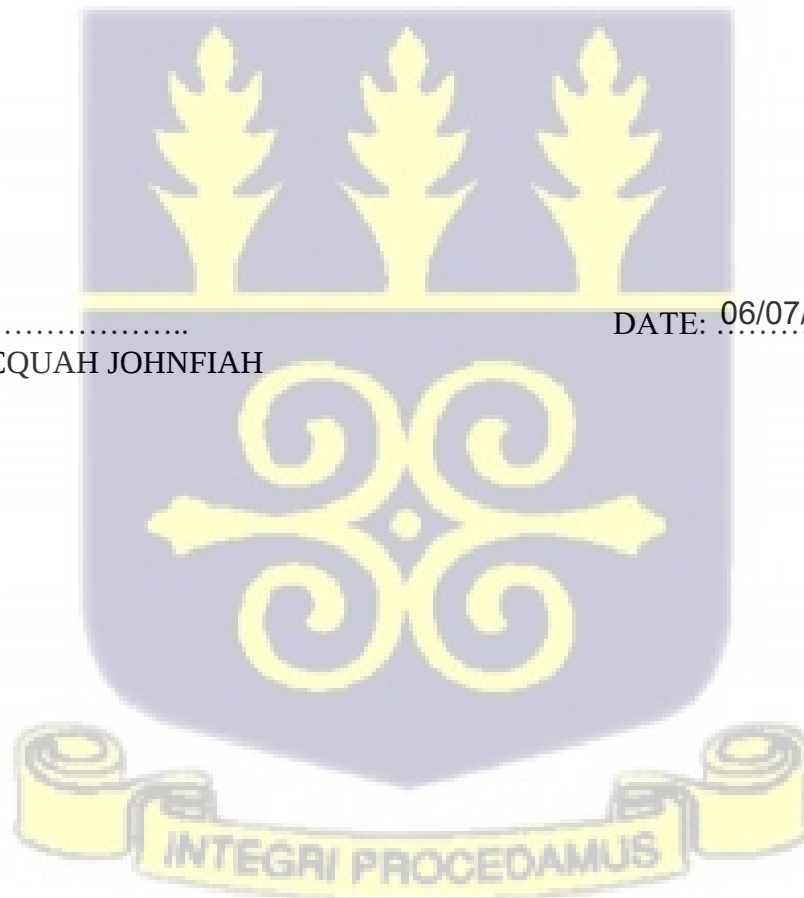
JULY 2022

DECLARATION

I, Raymond Acquah Johnfiah, do solemnly affirm that this project write-up has not been presented by anyone for any academic award in this or any other university, and was conducted under strict supervision. All references used in the work have been duly acknowledged. I, therefore, bear sole responsibility for any shortcoming associated with this work

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.


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DEDICATION

I dedicate this work to my Mum (of Blessed Memory), Dad and Siblings.



ACKNOWLEDGEMENT

Glory be to God in the highest!

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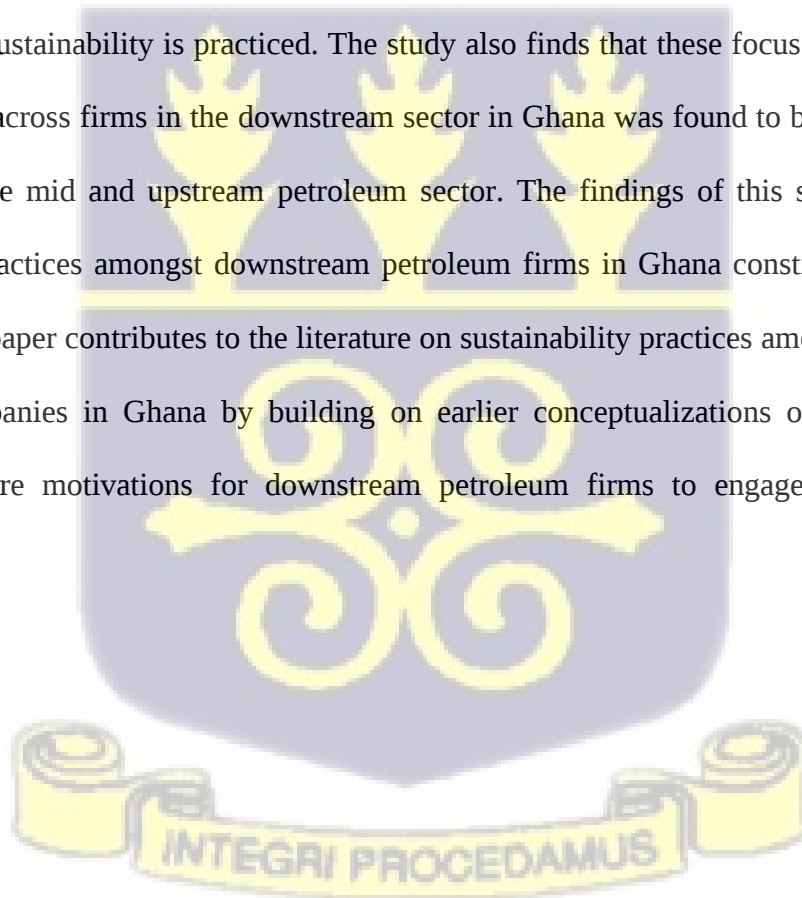
Abbreviation	Full Meaning
GDP	Gross Domestic Product
ESG	Environmental, Social and Governance
WCED	World commission on Environment and Development
MDGs	Millennium Development Goals
UN	United Nations
OECD	Organisation for Economic Co-operation of Development
SDGs	Sustainable Development Goals
GRI	Global Reporting Initiative
NGL	Natural Gas Liquids
GNPC	Ghana National Petroleum Corporation
NPA	National Petroleum Authority
NEP	National Energy policy
EITI	Extractive Industry Transparency Initiative
PREFS	Petroleum Regulatory Framework fiscal system
OMCs	Oil Marketing Companies
KPI	Key Performance Index
EPA	Environmental Protection Agency
WCCSD	World Corporate Council Sustainable Development
OMNC	Oil Marketing national Companies
GHEITI	Ghana Extractive Industries Initiative
PIAC	Public Interest and Accountability
E and P	Exploration and Production
WEP	Wired Equivalent Privacy
CERA	Cambridge Energy Research Associates
TOR	Tema Oil Refinery
BOST	Bulk Oil Storage and Transportation

OTCs	Oil Trading companies
BDCs	Bulk Distribution Companies
GOIL	Ghana oil
CSR	Corporate Social Responsibility
HSSE	Health Safety, Security and Environment
IPIECA	International Petroleum Industry Environmental Conservation Association



ABSTRACT

The study examines the sustainability practices of downstream petroleum firms in Ghana. Particularly, the study explores the focus areas of their sustainability practices and the manner through which sustainability practices are operationalised. This research adapts elements of the institutional theory to interpret the outcome of a series of semi-structured interviews with members of selected downstream petroleum companies in Ghana, thus, the qualitative research approach is adopted for the study. Participants were drawn from downstream petroleum firms in Ghana using the purposive sampling technique. The results of the study show that the focus areas identified, with regards to downstream petroleum firms in Ghana, are paramount channels through which sustainability is practiced. The study also finds that these focus areas, in as much as are common across firms in the downstream sector in Ghana was found to be different among companies in the mid and upstream petroleum sector. The findings of this study suggest that sustainability practices amongst downstream petroleum firms in Ghana constitute an important objective. This paper contributes to the literature on sustainability practices amongst downstream petroleum companies in Ghana by building on earlier conceptualizations of the institutional theory to explore motivations for downstream petroleum firms to engage in sustainability practices.



CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Corporate sustainability practices are significant to the effectiveness, efficiency, and continuous operations as well as the survival businesses (KPMG, 2013; Lasker, 2018). Business in the Ghanaian petroleum industry is no exception. Oil and gas directly account in world gross domestic product (GDP) and is heavily involved in all the other types of economic activity (Taleghani & Tyagi, 2017). Although the petroleum industry contributes to the economic development and the Gross Domestic Product (GDP) of Ghana, it is subjected to prejudices about the negative consequences of its operations on the environment and lives and this, in turn, poses a continual threat to the industry (Hinson et al., 2018). This assertion resonates with the World Bank's (2017) position that the industry in its real sense is characterized by leaving indelible economic, social and environmental footmarks in whichever place it settles for business. This is a result of the constant interaction in any form that businesses in the petroleum industry have with their environment as these businesses do not exist in a vacuum (Uwuigbe et al., 2018).

Kumah (2006) identified that a more significant number of petroleum entities in developing countries are key actors in creating diverse socio-economic and environmental problems such as water and air pollution, noise, social disorderliness, mass dislocation, and livelihoods deprivation. Such unsustainable practices by petroleum firms in Ghana have hugely been criticized (Akabzaa, 2009; Akabzaa & Darimani, 2001; Andrews & Essah, 2020) and have therefore ignited the growth of environmental and social concern among stakeholders as well as stirring the interest of stakeholders in knowing and understanding entities' approach of managing

the issues of sustainability (O'Dwyer & Owen, 2005; Laskar, 2018). Sustainability practices are required from firms in the petroleum industry to compensate for the damages they cause to the environment even though they significantly contribute to Ghana's economic development by employing aging taxes and providing other social amenities (Arthur, Wu, Yago & Zhang, 2017).

The concept of Sustainability has become a mainstay usually in the discussion of issues around the environment and society. According to the description of Bursa Malaysia, sustainability can variously be described as corporate responsibility. Environmental, social, and governance (ESG), and economic, environmental, and social responsibility are all terms used to describe corporate social responsibility (Johari & Komathy, 2019). Sustainability has virtually become a generally accepted archetype of development, jingle for universal aid activities, the rallying cry for eco-friendly and development campaigners, and a topic for academic discussion and studies (Ukaga, Maser & Reichenbach, 2011; Okeniyi et al., 2020). Sustainability cuts across several industries such as manufacturing and others (Oyewo et al., 2022; Deberdt & Le Billon, 2022; Atiase et al., 2022; Singh, 2022).

Sustainability is defined by the World Commission on Environment and Development [WCED] (1987) as "development that fulfils current demands without jeopardizing future generations' ability to satisfy their own needs." This brings on board Elkington's (1994) tripartite bottom-line approach which consists of Planet, People, and Profit, mirroring environmental, social, and economic corporate responsibility, respectively. In addition, it stipulates that corporations must undertake other responsibilities such as the welfare of the local people, its employees, and the communities within which they operate aside from the pursuit of profit in a manner that will not harm or endanger the environment in any form (Hinson et al., 2018).

Firms worldwide embrace sustainability reports as a means (Lozano & Huisinigh, 2011) to effectively relay their sustainability practices to their stakeholders (Du, Bhattacharya & Sen, 2010; Hsu, Lee & Chao, 2013). This notion of sustainability practices gained prominence after Brundtland reported on linking the chasm between human and environmental development concerns in 1987 (Bebbington & Larrinaga, 2014; Bebbington & Unerman, 2018). According to Aifuwa (2020), the notion gained traction following the United Nation's Transformation Agenda, expected to be completed by 2030. In addition, United Nations (UN) accepted the Millennium Development Goals (MDGs) created by the Organization for Economic Co-operation and Development (OECD) in 1966. They amended them into seventeen sustainable development goals (SDGs) (Bebbington & Unerman, 2018). As defined by the Global Reporting Initiatives (2015), a sustainability report is a report promulgated by an entity concerning its social, environmental, and economic impacts caused by its day-to-day actions, thus reporting sustainability practices. It is referred to as triple-bottom-line corporate citizenship disclosure, corporate citizen research, sustainable development reporting, non-financial report, corporate responsibility reporting, or integrated reporting (Amoako, 2018). The rising costs and penalties associated with environmental damage (Burrit, Hahn & Schaltegger, 2002; Bartolomeo et al., 2000) have caused an increase in stakeholder's demand for reports on sustainability practices (Gadenne et al., 2012) thereby encouraging entities to incorporate sustainability into all levels of managerial decision (Amoako, 2018).

Considering calls for reports on sustainability practices, activities in the petroleum industry are no exception to these demands (Taleghani & Tyagi, 2017). According to KPMG (2020), at least 70 percent of N100 companies reported on sustainability in all industries, of which the oil and gas sector ranked fourth with eighty-one percent (81%). Of the G250 companies, the oil and gas

sector ranked first with 100% - rubbing shoulders with technology, retail, and healthcare, and thus, reflecting a full sustainability disclosure amongst the companies. Here, the petroleum industry comprises three major sectors of the industry are upstream, midstream, and downstream. The upstream deals with exploration and production, while the midstream deals with the storage, marketing, and transport of products, including crude oil, natural gas, natural gas liquids (NGLs, primarily ethane, propane, and butane) sulphur. The downstream industry includes oil refineries, petrochemical plants, petroleum product distributors, retail shops, and natural gas distribution companies. The downstream industry includes midstream operations. The Ghana National Petroleum Corporation (GNPC) regulates the upstream business, while the National Petroleum Authority (NPA) regulates the downstream industry. The innovation of advertising oil amounts in 2007 boosted expectations among partners and customers of the oil and gas industry's significant performance and influence on Ghana's developmental activities in terms of strong economic growth, business growth, reducing poverty, and economic progress for Ghanaians (National Energy Policy, 2010).

The downstream petroleum sector is the focus of this research. The following considerations have prompted a focus on the downstream sector. First, accidents and disasters in the downstream petroleum sector (particularly in transportation and retailing activities) have been a major source of safety and environmental issues in Ghana (e.g., see Amponsah & Opei, 2014). Indeed, the transportation, distribution, and retailing sub-sectors of the downstream Ghanaian petroleum business have been highly apparent in terms of environmental pollution, mortality, and other human disasters. However, the upstream sector has received the majority of the emphasis in Ghana's study on oil pollution and safety in the petroleum industry, as well as its regulation (e.g Banful, 2016; Kankam & Ackah, 2014; Benin, 2017; KPMG, 2020).

1.1 Problem statement

The downstream petroleum sector accounts for about 10 percent of Ghana's GDP, with an estimated annual turnover of about GH12 billion (Approximately usd4.01 billion) (NPA, 2019) and a median wage importation of about 8 Percent of its concluded products for national consumption from Europe (CBOD, 2015), to supplement indigenous final product output. They are confronted with various threats, including storage, interface, and transportation risks, while carrying out these tasks (Inkpen & Moffett, 2011; Asare et al., 2021). Instances are the recent Liquefied Petroleum Gas (LPG) tanker that crashed into another vehicle on the Tema-Accra motorway, creating a gridlock in April 2022, a mining vehicle carrying explosives that crashed into a motorcycle, causing an entire town to be wiped out as a result of explosion of the explosives in January 2022. In this regard, downstream patterns are an essential sector, particularly in their sustainability practices, which include various and diverse moves and thus, require much attention.

There has recently been an increased preeminence on the issue of accountability, transparency, openness, and reporting of the downstream petroleum sector (Thorsteinsdottir et al., 2020) and the extractive industry at large. This is powered by various international initiatives, including Extractive Industry Transparency Initiatives (EITI) (2016) and GRI (Thorsteinsdottir et al., 2020). However, greater weight has generically been placed on financial accountability and transparency and meagerly on the disclosure of governance, social and environmental achievement (Ayuk et al., 2020). As per Johari and Komathy (2019), such irresponsible attitude of firms is exhibited in their financial statements. Researchers have asserted that firms, through their financial statements on an annual basis, report huge profits and subsequently claim that they perform at the disadvantage of the community and environment within only a smidgeon bit the

disclosure. Congruous to this fact, scientists have identified that drastically the ecosystem has changed due to the activities of business firms (Kusuma & Koesrindartoto, 2014).

The current paradigmatic approach of sustainability practices of the firms in the petroleum industry, to a large extent, is deficient in satisfying the diversified stakeholders' needs for information (Thorsteinsdottir et al., 2020). According to Thorsteinsdottir et al. (2020), this phenomenon is due to the sector lacking a 'global common vision' relating to sustainable operations, including key performance indicators (KPIs) at the operational level. Furthermore, even though governments play a significant role in executing corporate sustainability reporting via collaborative initiatives with firms, policies, and sustainability practices action plans, these policies, and initiatives generally have not been explicitly targeted to the downstream petroleum industry (Thorsteinsdottir et al., 2020). This case is worsened in the Ghanaian context, yet little has been researched into sustainability practices in the downstream petroleum industry (Amponsah & Opei, 2014; Ofosu-Peasah & Ackah, 2017).

A study conducted by Hinson et al. (2018) with six foreign-owned and four local petroleum companies in Ghana exhibited that the foreign-owned companies are more fluent in reporting their sustainability practices than the local firms irrespective of their sizes. This invariably ranks Ghana low in terms of corporate sustainability practices.

Although it has been identified that it is highly probable for large firms to display a thorough report on their sustainability practices as well as their sustainability initiatives to their stakeholders as a result of their high exposure as compared with the smaller firms (Eweje, 2007), the key findings of the Petroleum Regulatory Framework & Fiscal System (PRFFS) (2020) postulates that their total reporting quality stays poor. According to Thorsteinsdottir et al. (2020), one issue with large companies' environmental accounting is that they focus on the corporate

level (as required by the most widely used sustainable development auditing standards, the GRI) rather than the unique information at the functional and operational levels. This also leaves a massive gap for further studies on sustainability practices in the Ghanaian downstream petroleum industry.

Many studies have been conducted into the antecedents and outcomes of sustainability practices of oil and gas companies engaged in the upstream and midstream sectors of Sub-Saharan Africa's oil and gas industry. Such works include petroleum resource management in Africa, environmental sustainability disclosure and firm performance of quoted petroleum firms in sub-saharan Africa, addressing Nigeria's petroleum sector environmental accountability from stakeholder perspective, and others (Olujobi et al., 2018; Onyebuenyi & Ofoegbu, 2022 Pereira & Omotuyi, 2022; Brisibe, 2022). However, there are few reports on the challenges arising from the sustainability practices of firms operating in the upstream and midstream sectors of the oil and gas industry in Sub-Saharan Africa. Moreover, very little research that is accessible scarcely address sustainability issues in the downstream sector in sub-saharan Africa, including Ghana (Prpich et al., 2019; Wan Ahmad et al., 2016). Here, most works conducted in Ghana also focus on the upstream and midstream petroleum firms (Nyansapoh et al., 2022; Asenso & Ackah, 2022; McQuinn & Sallah, 2022; Adadzi et al., 2022) rendering little research in the Ghanaian context. Furthermore, Abudu and Sai (2020) in their systematic review of the petroleum industry posited that, in as much as there is a lot of literature on petroleum industry, the attention centered on the upstream and midstream have resulted in disjointed and contradictory research outcomes. Abudu and Sai (2020) further indicated that these outcomes have not contributed more to research improvement and policy in the petroleum industry over the years. Considering such

research gaps, the study looks into the sustainability performance of enterprises operating in Ghana's downstream petroleum sector.

This research also seeks to adopt the method-context gap as most previous works in the petroleum industry engaged the quantitative approach and were conducted in foreign jurisdictions and sub-Saharan countries aside Ghana (Abudu & Sai, 2020; Oyewo et al., 2022; Daberdt & Le Billon, 2022).

This research takes a qualitative approach to explore the critical performance indicators, frameworks, and motives for corporate sustainability practices of firms in the Ghanaian downstream petroleum industry.

1.2 Research questions

The primary goal of this research is to look into sustainable methods in the downstream petroleum industry. Here, the focus is on the Ghanaian petroleum sector, with much emphasis on downstream petroleum companies. The primary goal of this research is to investigate sustainable methods. The stated objectives are:

1. What are the key concerns motivating the Oil Marketing Companies'(OMCs) sustainability practices in Ghana's downstream petroleum sector?
2. How is sustainability practised in the downstream petroleum industry by OMCs in Ghana?
3. Why is Sustainability practised in the downstream sector in its present form?

1.3 Significance of the study

This research seeks to contribute to three areas:

Academia

Using the qualitative approach, the work adds to the body of knowledge on resilience practices in the Ghanaian downstream petroleum industry. This is a result of calls by Aifuwa (2020), who proposes that, due to inconclusive results by most researchers in this field, a methodical improvement would be necessary for knowing how sustainability is practiced and reported in the Ghanaian downstream petroleum industry. Therefore, from the perspective of the qualitative research approach and through the lens of the institutional theory, this research intends to add to the repository of knowledge how firms in the downstream petroleum industry have operationalised sustainability practices as well as the motives for doing it the way they do, the consequences of such operations on the environment and society as well, and the main quality metrics, as well as framework for sustainability practices with firms in the downstream petroleum industry of Ghana as well as the underpinning reasons for selecting these KPIs and framework for sustainability practices.

Policy

GSCI (2020) identified below the global average of 77 percent in terms of sustainability reporting. According to Cudjoe (2019), this is due to the deficient regulation and Sustainability initiatives and having few firms providing reports on their sustainability practices. Considering the above stipulations, this research, in the quest of finding remedies for the current problems, will assist policy-makers and professionals the National Petroleum Authority (NPA) and the Environmental Protection Agency (EPA) to formulate sanctionable policies and regulatory frameworks that will peculiarly help firms in the Ghanaian downstream petroleum and extractive industry as a whole to positively and in an accelerated manner respond to the excellent call for sustainability performance and reporting.

Practice

Findings from this research can influence firms in the Ghanaian downstream petroleum sector to up their game in reporting on Sustainability. This study will throw more light on the sustainability practices of players in the downstream sector and identify strategies, media, or frameworks that will facilitate the effective discharge of sustainability practices in Ghana. This consequently can help boost Ghanaian petroleum industry sustainability reporting,

1.4 Scope of the study

The study engrossed in the downstream petroleum Ghana's industry. This industry was selected because it is one of the most contributing sectors to Ghana's GDP. In addition, the downstream industry forms part of the environmentally sensitive industry and, thus, a common externality contributor. In Ghana currently, the downstream petroleum industry encapsulates firms responsible for distributing fuels to various mining sites and fuel stations for commercial purposes. Therefore, selecting the downstream petroleum industry for the study of corporate sustainability practices issues is appropriate because this industry, as per the assertions of Kumah (2006), is also responsible for the diverse socio-economic and environmental problems.

The nature of the selected industry enables research that goes beyond the study of sustainability practices from a cross-sectorial generic point of view as posited by Pojasek (2007) and Therivel and Walsh (2006) to conduct on a specific sector on the subject matter as suggested by Al Hawaj and Buallay (2021). This research will undertake a uniform sectorial study on corporate sustainability practices used in the firms from the sector identified.

1.5 Organization of the study

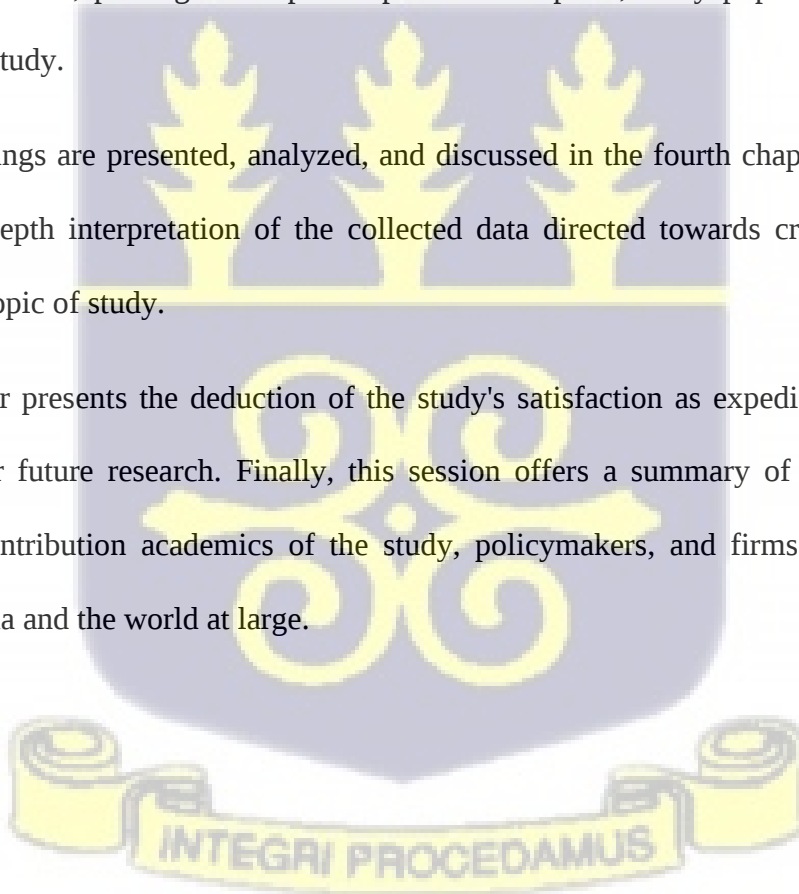
This research comprises five chapters, ranging from chapter one to chapter five, purposefully tackling the objectives of this study thoroughly and chronologically. The first chapter catered for

the introduction, which encapsulated a thorough background and the research problem. Furthermore, questions also explained the study's motivations, as well as the scope as well as the significance of the research. Section two provides a comparative and detailed analysis, review, and criticism of extant academic literature related to the study topic. The literature review provides an empirical backing that justifies the stance of the study in an objective manner and furnishes the research with robust theoretical grounds.

Chapter three deals with the research methodology and methods deemed pertinent for addressing the research questions and the hypothesis in a comprehensive manner. It also throw more light on the research approach, paradigm and philosophical assumption, study population, and sample selected for the study.

The study's findings are presented, analyzed, and discussed in the fourth chapter. In addition, it includes an in-depth interpretation of the collected data directed towards creating knowledge concerning the topic of study.

The final chapter presents the deduction of the study's satisfaction as expedient approvals and opportunities for future research. Finally, this session offers a summary of the research, key answers, and contribution academics of the study, policymakers, and firms in the extractive industry of Ghana and the world at large.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The relevant review includes current and available studies on the research. This contains an estimation procedure of the research as well as the study's theoretical foundation. The literature survey specifies a few study-related topics. Scholarly publications in the field will be examined under the themes identified: sustainable methods, the oil and gas industry, and the downstream sector.

2.1. Definition of key concepts

2.1.1 Sustainability

The notion of sustainability originated with the Brundtland Report in 1987 (Kuhlman & Farrington, 2010). Sustainability was described by the UN General Assembly (1987, p. 43) as "the ability to satisfy the requirements of the present generation without jeopardizing future generations' ability to meet their own needs." As a result, organisations and individuals must make significant efforts to avoid causing harm to people and the environment, which will endanger people's choices and lengthy existence. The notion of sustainability, according to Hansmann and Frischknecht (2012), consists of three main components: environmental, economic, and social, which constitutes the elements of sustainability. Sustainable development is focused on preserving an equilibrium between the earth's environmental systems while allowing humanity to renew themselves in the environment to the greatest extent possible. Humans' capacity to acquire resources to satisfy their requirements is defined as economic sustainability. The capacity of individuals in a society to own equal chances to enhance their

current way of life and have access to all requirements is referred to as social sustainability, which is the final component of sustainability. Elkington (1997) advocated for triple bottom line reporting, which looked at how corporations ensured economic growth, environmental quality, and social fairness. These features mirror the principles of sustainability, making it a phenomenon. To describe (weak) sustainability, neoclassical economics used the concept of substitutable capital. In economics, debate raged over whether this "weak" definition of sustainability was sufficient, or if a more severe definition emphasizing the non-substitutability of "fundamental natural capital" was required (Pearce and Atkinson 1993). In the meantime, ecological economics developed greater ties to living processes, resulting in topics like living analysis, ecological footprint assessment, and diverse national accounting systems (Common & Stagl, 2005). The banking industry adopted elements of the political discussion, resulting in concepts such as the "three pillars of sustainability." Sustainability has now been recognized alongside various other more traditional business goals, as well as a slew of new financial and assurance procedures that factored sustainability issues into business planning and accounting practice (Elkington 1997). According to Schmidheiny and Timberlake (1992), the World Corporate Council for Sustainable Development (WCCSD) was founded, with several major business actors on board. Political analysts such as Andrew Dobson (1999) defined political ideologies that included a "green" social and political point of view, putting environmental challenges at the center of a socially constructed knowledge of social and political change, which was based on more well-known political issues such as the environment, well-being, and social equity struggles. Others provided comprehensive syntheses that connected the economic, environmental, and socio-political aspects of sustainability into a "sustainability science," as Bob Kates and others put it (Kates et al. 2001).

2.1.1.1 The relationship between governments, markets, and businesses in terms of sustainability

In an economic setting where such deed might be seen as costly and harmful to business competitiveness, government agencies contribute significantly to environmental protection by establishing environmental compliance and quality guidelines to preserve effective input data and a high standard of living. Such additional expenditures might pose major issues for businesses in the short term, especially if sufficient preparation of work has not even been completed, but they can be highly costly in the long run. According to Porter and Van der Linde (1995, p. 20), a well-defined environmental standard can encourage novelties that decreases the total price of a product or enhance its value. Economic improvements allow firms to make greater use of a range of resources, such as raw materials, energy, and labor, thus balancing the cost of improving environmental impact and breaking the deadlock. Although environmental protection and its implementation have been standardized to eliminate awareness of international barriers (Brack, 1998; Faucheux and Gheorge, 1998), various states have adopted divergent routes in the battle to create a sustainable future as a result of their government's unique policies and links with industry. Regulatory requirements, for example, have compelled innovation in Germany, including the search for novel uses for solid waste that was previously destined for landfills. In Japan, on the other hand, the same level of cooperation between industry and government has contributed to an even more organized approach (Russo, 1995), with subsidies to Research & Development efforts across the board. In the context of these two countries, even though past American government regulations have resulted in significant reductions in sulphur dioxide emissions from the power industry (Moore and Miller, 1994), the US has shown considerable hostility to policies that interfere with energy business operations (Hill, 1997, pp 165, 171).

Governments, on the other hand, will be unable to address the country's natural environmental problems if indeed the business situation is unfavorable. The same authorities of the preceding planned economy had been widely chastised for an absence of democratic will and a failure to use economic inducements to reduce industrial pollution (Peterson, 1993; Whitefield, 1993), but there is now a growing perception that the progressively leading "market model" is also fading from an environmental standpoint, as the efficiency of "short-term" solutions improves (Peterson, 1993; Whitefield, 1993; Peterson, 1993; Whitefield, 1993; Dunphy & Griffiths, p. 174, 1998). Despite evidence that businesses are trying to stay competitive in environmentally responsible markets by trying to promote "sustainable goods," Dunphy and Griffiths (1998), suggest several factors that are contributing to accumulated crises, such as population growth, natural limits to non-renewable sources, reduced species diversity, growing ecotoxins, over-exploitation of renewable resources, and the incentivization system. Although not all of these factors may be traced exclusively to the market system, the final four can be. These problems "primarily originate from our inability to perceive our ties with the environment as important to our future existence and to approach that relationship systematically," per Dunphy and Griffiths. "In most cases, ecosystems require a significant model other than the market to maintain economics (Dailly and Cobb, 1994).

Politicians, on the other hand, have less influence over private businesses, particularly huge multi-national firms with worldwide reach. Government institutions haven't yet kept pace with the world's marketplace, resulting in severe effects on people and the environment, necessitating the development and strengthening of suitable standards, harmonization, and regulatory frameworks in a multi-context. There is scientific evidence that certain transnational companies will introduce procedures that are stronger than just the demands of certain governmental rules to

standardize business strategies on a worldwide basis (Garrod, 1998), and there is a greater chance for giant firms to encounter these expectations as supply creators and resource consumers and to participate in collaborative efforts.

2.1.2 Practices that promote the long-term viability

Companies may profit from these sustainability solutions because they are based on theory yet have a practical application that can give a competitive edge (Lloret, 2015). With the ability to put sustainability ideas into action through actual efforts, we have the potential to change the situation (Engert & Baumgartner, 2016). Firms have expanded their engagement in issuing sustainability reports in recent years, implementing GRI rules that include the three factors in the bottom line and are among the most widely used and known worldwide (Toppinen et al., 2013). Except in a few European Union nations where special legislation mandates the publication of these studies on sustainability practices, the preparation, and distribution of these reports on sustainability practices is voluntary (Ceulemans et al., 2015; Lozano et al., 2016).

Several industrialized nations use a standard methodology to evaluate data on sustainability practices to provide decision-makers with a strong foundation for strategic planning (Foran et al., 2005). In Brazil, for instance, there is no particular regulation requiring companies to submit their financial reports. In this context, the number of companies in Brazil that voluntarily produce and publish reports using GRI criteria is increasing (Lozano, 2015).

Organisations that want to regulate their sustainability policies are eager to demonstrate to their stakeholders that they aim to follow international criteria while implementing and evaluating sustainable practices (Salvioni et al., 2017; Lozano et al., 2013). Despite the standards, it is nevertheless difficult to monitor and gather the information contained in the reports, owing to the

organisations' uniqueness and a lack of knowledge of how the businesses assess the effects of those activities that are not provided by the reports (Isaksson et al., 2015).

2.2 Empirical research

The study of empirical literature shows what is already known about the issue.

2.2.1 The petroleum industry

Oil and gas also referred to as "oil," are the most feasible forms of energy on the planet, as well as a commodity in business strategy. Manufacturing output, transport in the city, fuel, and the national army all rely on it. At an even more basic level, petroleum is the primary source of energy for capitalist production. Oil MNCs, which manage the industry's large-scale integrated operations on a global scale, are at the core of the oil industry's international political economy. It is a group of the richest and most influential corporations in the world. Multinational oil companies are much richer than the petrostates they trade with. Because they rely on foreign oil rents, such countries are not accountable for their residents, and industry is not responsible for the citizens of the countries in which it operates. As a result, when multinational partners' energy interests are threatened, it is always easy for them to band together and unleash violence. Another factor for oil companies' global domination is their enormous influence through their government ministries. Because they are the only provider of a steady supply of reliable energy, jobs for their citizens, profits for shareholders / investors, and income for their household governments, these companies criticize Western powers' energy security, wealth, and global influence, particularly the United States. The close relationship between multinational oil companies and their domestic government agencies is reflected in the way they are involved. Major Western political parties receive funding from oil multinationals. Exxon Mobil and

Chevron Texaco are donating the cost of a marketing campaign to the Democratic and Republican parties in the United States. In addition, these companies spend large sums of money on passing laws (Hamilton et al. 2004, 19). Cycling links between oil and government agencies are made in Nigeria (Rowell, Marriot, & Stockman 2005). The consolidation of power, such as the projection of economic, geopolitical and energy security interests abroad, is the result of a conflict between multinational oil companies and political elites in their countries. As a result, both players are working together to protect, expand access and control their respective shares of global oil reserves. It is a strong alliance that will promote its trade interests in the international energy policies of its respective countries. An unforgettable global approach to oil is a modern necessity for countries that are or want to become global economic and military giants. Given the growing global energy security paradigm, which is based on four elements: resource supply, consumption centers, geopolitics, and market forces (WEF / CERA, 2006; Yergin, 2006), this is especially significant. The global oil policy economy is supported by the tremendous influence and wealth that oil has as a commodity order, as well as the international power in the "securitization" of its supply, demand, and market stability. Multinational oil companies have increasing power over energy markets and product availability as a result of oil commoditization, which includes the integration of petrochemical states and local oil and gas into geostrategic policy institutions. The main ports of the oil sector remain rooted throughout the world, putting Nigeria in a position as a secure provider of oil reserves internationally, thanks to the rapid entry of oil corporations from China, India, Korea, Brazil, and other nations into the Nigerian oil scene. Nigerian oil and gas have suffered as a result of this circumstance.

2.2.2 The Evolution of Petroleum in Ghana

Ghana has had oil and gas exploration since 1896, according to Hosi et al. (2019); wells were sunk around Half Assini following the discovery of oil seeps onshore in the Tano Basin. Commercial oil exploration and production began in 1978 when Phillips Petroleum drilled the Dixcove 1X offshore Cape Three Points in 900 meters of water. Exploration efforts advanced much further with the creation of the Ghana National Petroleum Corporation (GNPC) (Hosi et al., 2019). In the offshore zone, 89 wells were drilled under GNPC, including six important discoveries (ibid.). Hosi et al. (2019) add that the Saltpond Field, which began commercial oil production in 1978, averaged 4,500 barrels of oil per day until it was shut down in 1985. It was Ghana's first commercial oil field. According to Hosi et al. (2019), between 1983 and 2007, the GNPC collected approximately 30,000 km of 2-D seismic data and over 5,000 km of 3-D seismic data. Tullow discovered hydrocarbons in the 1N-3X survey fitted in the near shore Shallow Water Tano block in October 2007, marking a turning point in Ghana's efforts to find hydrocarbons within its territorial seas (ibid). Tully went ahead and drilled the Mahogany-1 and Hyedua-1 wells, which uncovered significant oil resources, according to Tully. During the drilling of the Odum-1 well, Kosmos Energy and its partners discovered hydrocarbons (Hosi et al., 2019). To administer and control Ghana's upstream oil sector, the Petroleum (Exploration and Production) Law, 1984 (PNDC Law 84), and the Ghana National Petroleum Corporation Law, 1983 (PNDC Law 64) were passed. Ghana has approved 18 petroleum partnership agreements so far (Hosi et al., 2019).

According to United Nations Environment Programme (UNEP) and The E & P Forum (1997), the oil and gas sector is worldwide, with businesses in every corner of the globe. Oil was discovered in Ghana in 2007 (Ackah & Mohammed, 2018). The exploitation of these resources,

on the other hand, commenced in 2010 (ibid.). According to UNEP and The E & P Forum (1997), the oil and gas sector is separated into two segments: "ambitious" – search and invention, and "downriver" – crude oil refining and processing, as well as delivery and advertising. Companies might be fully integrated, which means they operate both upstream and downstream, or they can specialize in one area. Companies that specialize in one business, such as exploration and production (E & P) and refining and marketing, are known as exploration and production (E & P) and refining and marketing firms (ibid). According to Pelegry and Bravo (2018), the oil and gas value chain consists of three parts: upstream (exploration and production), midstream (transportation, storage, and trade), and downstream.

2.2.2.1 The Institutional Setting of the Industry of Oil and Gas

The Republic of Ghana's designation as a "petrol state" stem from the fact that oil rents account for 10% of the country's GDP (Heilbrunn, 2014), as well as the fact that the oil industry has drawn significant foreign direct investment. For example, Ghana received \$2.27 billion in oil-induced foreign direct investment in 2010. This is 19 times better than Ghana's average yearly FDI before the oil discoveries between 2000 and 2005 (Hendrix & Noland, 2014, p.53). In 2021, Ghana Investment Promotion Centre in their FDI report indicated an oil-induced FDI of \$874.01 million. Ghana's petroleum is intricately organized. Table 1 merely runs a photograph of the situation.



Table 1: Roles and responsibilities of key oil industry entities.

Agency	Responsibilities
Volta River Authority (VRA)	Power generation
Bui Power Authority	Power generation
Independent Power Products (IPPS)	Power generation
Ghana Grid Company (GRIDCo)	Power transmission
Electricity Company of Ghana (ECG)	Power distribution in South Ghana
Northern Electricity Department (NED)	Power distribution in North Ghana

Table 2: Petroleum sub-sector

Ghana National Petroleum Corporation	Oil and gas exploration development and production
Tema Oil Refinery (TOR)	Crude oil refining and sale of petroleum products
Bulk Oil Traders	Petroleum products importation and sale
Bulk Oil Storage and Transportation Company (BOST)	Bulk petroleum products transportation and storage
Oil Marketing Companies (OMCs)	Petroleum products distribution
Ghana Cylinder Manufacturing Company	LPG cylinder manufacturing

Table 3: Regulatory agencies

The Public Utilities Regulatory Commission (PURC) is a government agency that regulates public utilities (PURC)	Approval of electricity prices, monitoring of service quality, and consumer protection
Energy Commission (EC)	Licensing power sector operators and establishing technical criteria for their performance, sector planning, and policy recommendations to the Minister of Energy
National Petroleum Administration (NPA)	Licensing power sector operators, as well as defining technical requirements and enforcing them

Aside from the organisations recorded in Table 1, several more recently remained established, primarily to avoid the resource curse. One of them is the Committee on Public Interest and Accountability (PIAC), which is responsible for ensuring strict adherence to agreed-upon methods of handling and using oil revenues, as well as providing a forum for the public to participate in debating issues concerning the best use of oil resources, according to the legislation that established it (Petroleum Revenues Management Act, Act 815). This well-known design has a number of flaws, including a lack of funds and functional architectural flaws (see, for instance, Amoako-Tuffour and Ghanney, 2013, Gyampo, 2011, Gyimah-Boadi and Prempeh, 2012). Young (2012) shows that this is not the case in his book *The Fate of Sudan*. The failings are small compared to the exacerbated institutional complexity caused by international procedures in the two Sudanese states. In the Republic of Ghana, there are numerous orders and stabilities in place,

both inside the state and from non-state activities and institutions like civil society groups, research institutes, and leaders.

Panford (2015) stated in a recent piece in *Africa Today* (News Magazine) that the academy should make more room for this formal structure as part of its commitment to the "successful administration of the Republic of Ghana's petroleum resources." "The Ghanaian government appears to be inept and serious about correcting current institutional flaws." Other organisations' mandates, for example, have been enhanced to ensure that the Republic of Ghana avoids resource obscurity. This precedes the real establishment of the oil and gas sector in 2007. Transparency in Ghana's Extractive Industries Initiative (GHEITI), for example, was established in 2003, although the country has only developed members who comply with oil and gas regulations since oil exports began in 2010. (Boas et al., 2013). GHEITI is now controlled by the Ministry of Finance and Economic Planning. In addition, organisations include broadcasting, educational institutions, and the law court, each of which has been redesigned to be ready for the oil and gas business, even though they are not oil-specific. Indeed, there have been a few instances where members received specialized training in both foreign and domestic institutions to better prepare for the country's new oil and gas activities. Transparency is a key priority, and a host of transparency-focused institutions, including think tanks, have sprung up as a result (see, for example, Obeng-Odoom, 2010, Panford, 2015; Obeng-Odoom, 2015c). This institutional focus may be explained by the country's democratic route, but the possibility of a resource curse is enough to inspire interest in strengthening institutions. A different concern is whether openness is enough to prevent the economic hardships or any other negative consequences of becoming a petro-state (see Obeng-Odoom, 2010). Ghana's petroleum sector was constructed in a way that distinguished it from other African oil countries, such as Libya, even when it was a

frontier oil economy. Chorin's (2012, pp. 26–30) account of shady oil dealings in Libya during the first wave of oil employment, characterised by ethnic affiliations and clientelism, raises a number of issues that Ghana's critics (e.g., Abo, 2012, Darkwah, 2013) have yet to address.

2.2.3 The downstream petroleum sector in Ghana

Ghana's oil and gas industry is separated into three areas: upstream (investigation, creation, and so forth), halfway (transport, operations, and so on), and downstream (treatment facility, handling, conveyance, and so on.). The National Petroleum Authority (NPA) directs the downstream business, directed by Act 691, to supply naturally feasible oil and gas items. There are north of 7000 vital participants in the downstream oil industry in Ghana managing more than 435 968 metric lots of unrefined petroleum, 1.02 million metric lots of refined oil-based goods (RPP), and contributing about \$4.01 billion (10%) to Ghana's GDP in 2016 (NPA 2016). The presentation of the nearby satisfied strategy and cooperation guideline in 2013 and the liberation strategy in 2015 by the public authority (Acheampong, Ashong and Svanikier 2016; Tawia 2018) have added to the monstrous development of the business. The oil business exercises are significant, and any disharmonies in its tasks might cost the country a tremendous amount of cash.

Literature is scarce on oil and gas, particularly in the downstream petroleum industry. However, as good management becomes more apparent, the tendency is shifting. According to Lewin (2003), the sector's importance in meeting the bulk of transit demands, supplying electricity, and acting as the basis of the oil and gas industry ensures the existence of other critical industries (Lewin, 2003). Because of improved information, communication, and technology, there are now more opportunities for downstream petroleum businesses to coordinate activities (Chima, 2007). Balasubramanian (2010) claims that downstream oil distribution is increasingly adopting a

variety of solutions ranging from crude selection to product distribution at the retail outlet in the face of uncertainties such as oil prices, refining margins, and long lead times associated with crude making purchases and product investing.

2.2.3.1 Players in Ghana's Downstream Petroleum Sector

- **The Ministry of Energy and Petroleum**

The Department of Oil and Gas is accountable for supervising the oil and gas industry. In the energy division, its key liabilities incorporate arrangement advancement, arranging, observing, and assessment. The Ministry's goal is to ensure a protected and long-haul energy hotspot for Ghana and the remainder of the world. The objective is to make petrol benefits generally accessible and reasonable while remaining harmless to the ecosystem (Ministry of Energy and Petroleum, 2013).

- **Ghana National Petroleum Corporation (GNPC) is a state-owned oil company in Ghana.**

The Ghana National Petroleum Corporation controls Ghana's upstream oil and gas area (GNPC). The organization's vision is to venture into an elite organization equipped for making Ghana the quickest developing upstream petrol speculation objective in West Africa (GNPC, 2011). The company, which was made as a state-possessed undertaking in 1983, is represented by PNDC Laws 64 and 84. The GNPC is expected by PNDC Law 64 to partake in raw petroleum investigation, advancement, and creation.

- **The National Petroleum Authority (NPA)**

The NPA was formed in 2005 by NPA Act 691, which gave it the position to make due, control, and track improvements in the petrol downstream business, utilizing the legal oil estimating

recipe where essential. In 2013, the National Petroleum Authority (NPA) was shaped. The Unified Petroleum Pricing Fund (UPPF) was laid out by the Act, with the objectives of guaranteeing a predictable inventory of oil the nation over, guaranteeing that oil-based commodity costs incorporate a component that addresses assessed dissemination costs, and accomplishing an effective refined petrol conveyance framework.

- **Tema Oil Refinery**

Tema Oil Refinery (TOR) Limited, Ghana's just treatment facility, is permitted to deal with raw petroleum and market oil-based commodities. All as of not long ago, Ghana needed to depend on an inexhaustible yearly raw petroleum distribution agreement to meet its unrefined petroleum requests. Ghana utilizes around 1.8 million metric lots of refined oil-based goods each year. To oblige the expanded request, Bulk Oil Storage and Transportation (BOST) Company Limited and Oil Marketing Companies (OMCs) import refined items to compensate for deficiencies (Tema Oil Refinery, 2011). Oil specialist co-ops have additionally been granted licenses to import, trade, circulate, and market rough and oil-based goods by the NPA.

- **Bulk Oil Storage and Transportation Company, Limited (BOST)**

BOST (Ghana Bulk Oil Storage and Transportation Company Limited) was founded in 1993 as a private limited liability company with the government of Ghana as its sole shareholder. BOST is in charge of constructing a statewide network of storage tanks, pipelines, and other bulk transportation infrastructure, as well as keeping Ghana's strategic reserve stockpiles up to date. As the Natural Gas Transmission Utility, BOST is also responsible for constructing natural gas infrastructure across the country (NGTU). Its mission is to become the petroleum and energy logistics provider for the West African sub-chosen region.

- **Oil Trading Companies (OTCs) and Bulk Distribution Companies (BDCs)**

The National Petroleum Authority (NPA) has given these organizations mass merchant licenses. They likewise import unrefined petroleum and obtain, store, convey, and sell oil-based goods, with an emphasis on mass clients. During seasons of emergency, these organizations additionally filled in as suppliers of oil-based commodities. What's more, BDCs offer their items to oil advertising organizations, which sell them across the nation (Harmony FM Online, 2013).

- **Oil Marketing Companies (OMC)**

These companies buy and sell oil refining products to the general public and bulk users through retail channels such as gas stations and other resale shops. With the permission of the National Petroleum Authority, they also supply petroleum products during times of crisis.

2.3 Key focus areas, operationalization and Motivations for sustainability practices in the downstream petroleum sector of Ghana

- **Key focus areas driving sustainability practices**

The 17 SDGs, embraced by all UN Member states in 2015, offer a general structure for exploring the most squeezing maintainability difficulties of the present and are a call for the activity to end destitution, safeguard the planet, and guarantee harmony and flourishing by 2030. Every one of the Goals is interlinked between the monetary, social, and natural components of a practical turn of events, including compromises and cooperative energies across the Goals [48]. Communications in which the advancement of one objective backing another is named collaborations, while the contrary association where one objective's advancement frustrates another are called compromises (Prahdan et al., 2017). According to Andela et al. (2021) categorised several drivers of sustainable practices into environmental and social drivers. The environmental drivers included air and greenhouse gas emissions (GHG) (McLellan et al., 2012; Asif & Chen, 2016; Tost et al., 2018; Ranangen & Zobel., 2014; Nasirov & Agostini, 2018),

water and waste management (Lottermoser, 2011; Lebre et al., 2017), spillage and hydrocarbon control (Mudd, 2008; Sonter et al., 2018), whereas the social drivers consist of health and safety management (Mancini & Sala, 2018; Ranangen & Lindman, 2017; Suopajarvi et al., 2016; Hebblewhite, 2009) and, human and labour rights issues, as well as conflicts (Loow & Nygen, 2019; Lahiri-Dutt & Macintyre, 2006; Botha, 2016).

- **Operationalisation of sustainability practices**

One strategy oil and gas companies can employ is the full integration of sustainable operation strategy system (Mooney & Smith, 2012). Operationalisation of sustainability practices in the petroleum industry entails processes and activities downstream firms engage in to ensure successful sustainable practices. According to Parmenter (2015), Key Performance Indicators (KPIs) are mechanisms firms can adopt as part of their operational practices towards sustainability. Simkova et al. (2015) concurs by claiming the importance of these KPIs to the achievement of company's objectives. Here, most of manufacturing and production firms use KPIs to check the performance sectorial and departmental objectives such as unit cost of transportation, storage, and others (Livohi, 2012).

Mancini and Sala (2018) indicated that various means through which companies operationalize their sustainability practices were their focus areas. Nuru et al. (2015) posits that the role of the petroleum industry within a sustainable society has been called into question due to the environmental impacts of its activities and products.

The process of companies reporting their sustainability practices have also been identified as mechanisms of operationalization.

- **Motivations for sustainability practices**

As per Dodds et al. (2020), for people and associations of any sort to embrace manageable and sustainable practices, they should apply the inspiration to do as such. Ryan and Deci (2000) characterize inspiration as '[being] moved to follow through with something. Motivations can be gotten from different sources and can exist in the scope of powers (Ryan and Deci, 2000) yet Wright (1943) proposes that the people who are persuaded may frequently confront boundaries forestalling progress towards their objective.

Many examinations have been led throughout the years attempting to completely comprehend the perspectives and ways of behaving of organizations with respect to participating in ecological and manageability rehearses. Quite a bit of this examination has apparently neglected to get a handle on the real ways of behaving of petrol firms or possibly found dissonance between what organizations say and what they really do concerning natural responsibility (Thomas, 2018). By the by, numerous different investigations likewise feature the referenced 'esteem activity' hole, by which the broad obstructions experienced by business people make their for the most part certain natural mentalities seldom convert into substantial activities Maiteny (2019).

Many examinations tracked down joins between the accompanying individual qualities/mentalities and ecologically reasonable strategic policies (Carlsen et al., 2018; Vernon et al., 2020): a) Locus of control, which is alluded to as the familiarity with natural objectives and individual activities required; b) Self-viability: it is the faith in one's capacity to utilize the important measure of assets, abilities, and skills to get a specific degree of accomplishment on a given movement (Vernon, 2020); c) Goal direction: it depicts the kind of eagerness that people have about learning and new exercises, similar to supportability commitment. The hypothesis recognizes those that are authority objective arranged, for example, have a learning direction,

being quieter with mastering new abilities since they are inspired by new learning; versus those that are execution objective situated, for example, are spurred by acquiring great judgment to their exhibition, therefore more leaned towards exercises they know about, while less leaned towards new learning (Button et al., 2018).

2.4 Theoretical frameworks and lenses

Farooq and de Villiers (2017) conducted a survey of the literature on sustainable practice studies and discovered that 18 out of 50 papers, or 13% of the total, utilized a theoretical approach to sustainability practice studies. Legitimacy theories, stakeholder theories, and institutional theories are the most often employed theories in practical sustainability research. Patten and Romi (2018), O'Dwyer and Unerman (2011), and Fernandez-Feijoo (2018), for instance, utilized the idea of authenticity to satisfy their examination objectives. Accordingly, no single hypothesis has been embraced to portray the idea of constant works, as various creators have illustrated. Through the application of institutional theory, this study adds to the current sustainability literature by investigating the sustainability practices of low-income oil companies in Ghana. This chosen theory serves as a conceptual foundation for comprehending, analyzing, and developing techniques for evaluating a research problem. As a result, an institutional theory has been developed to explain why fundamental societies want to adopt sustainability practices.

2.4.1 Institutional Theory

Associations work inside friendly establishments that either help or prevent authoritative movement, as indicated by the institutional contention (Scott, 2001). Guidelines, regulations, and fines are instances of institutional impacts on corporate way of behaving, however, they can likewise be shared social real factors (McGuinness and Demirbag, 2012). This hypothesis has previously demonstrated its legitimacy across various spaces, as it prompts a superior

comprehension of the elements free of vital examination in maintainability navigation (Dias and Tavares, 2018). Likewise, formal and casual foundations have been isolated in a significant measure of global business and the board research (e.g., Deephouse, Newburry, and Soleimani, 2016; Hearn, 2015; Meyer, Mudambi, and Narula, 2011). Establishments connect with regularizing and social impacts (DiMaggio and Powell, 1983; Scott, 2001) that administer social lead, though hierarchical components, like regulations and rules (Peng, Wang, and Jiang, 2008), incorporate principles and coordinated designs to direct human and authoritative activity. Therefore, in global business and management studies, culture is many times seen as a non-formal institutional viewpoint (e.g., Dakota, Sahib, and van Witteloostuijn, 2010; Peng et al., 2008; Redding, 2005). Scott (2001, p. 57) characterizes the social mental mainstay of foundations as "... shared thoughts that comprise the substance of social reality and the edges through which significance is made." subsequently, on the grounds that schedules are viewed as the regular way of getting things done, they are followed.

The institutional hypothesis centers around the interaction by which personal conduct standards inside associations become steady and socially acknowledged. Establishments are "the development of organized, stable, socially coordinating examples out of unsteady, inexactly coordinated, or barely specialized exercises," as per a more proper definition. Selznick (1996), p. 271. Selznick, 1957), the association's set of experiences, the hierarchical individuals, and variations to the general climate comprises significant components in an institutional cycle.

Some contemporary institutional hypothesis research has zeroed in on the transmission of hierarchical thoughts, like those connecting with the executives, procedure, and human assets of the board. This is especially applicable to crafted by Li et al. (2019). It is expressed in their review that associations are turning out to be all the more fundamentally comparable. This

consistency of associations is filled to some extent by a longing to be viewed as decent organizations by outside entertainers (clients, contenders, specialists, and so forth.). Li et al (2019) express it like this:

"All things considered, the structure blocks for associations come to be littered around the cultural scene; it takes just a little enterprising energy to collect them into construction. Also, on the grounds that these structure blocks are viewed as legitimate, satisfactory, objective, and essential, associations should integrate them to stay away from wrongness. "

Magali et al. (2021) in the study on the port business utilized the institutional hypothesis to research how authoritative attributes are interlinked with outside and logical powers and presumed that heap different institutional tensions are in play with regards to having an impact on the decision-production of Port Managing Bodies (PMBs) as to the reception of supportability practices and announcing. Ali and Tariq (2021) additionally embraced the institutional hypothesis to look at how corporate commitment to maintainable improvement objectives revealing (SDGR) is impacted by Libya's non-empowering institutional climate post the political change in 2011. Kshitij et al. (2021) in their study on the issue of changes in the field of petrol investigation and creation in India, look at an institutional change where the foundation, once altered, progressively returned close to its pre-change state.

The institutional hypothesis contains three components: coercive isomorphism, mimetic isomorphism, and regulating isomorphism, which are talked about in the ensuing sections.

- **Coercive isomorphism**

Coercive isomorphic change includes pressures on an association from different associations on which it is reliant, as well as social assumptions from society. Some are legislative commands; some are gotten from contract regulation or monetary revealing necessities. "Associations are

progressively homogeneous inside given spaces and progressively coordinated around ceremonies of adjustment to more extensive establishments" (Diaz and Tavares, 2018; Li et al., 2019). Political associations standardize this idea conclusively. Coercive isomorphism is as opposed to mimetic isomorphism, where vulnerability energizes impersonation, and like standardizing isomorphism, where proficient norms or organizations impact change.

- **Mimetic isomorphism**

Mimetic isomorphism in the association hypothesis alludes to the propensity of an association to emulate another association's construction on account of the conviction that the design of the last association is valuable. This conduct happens principally when an association's objectives or method for accomplishing these objectives are hazy (Dimaggio and Powell, 1983; Li et al., 2019). For this situation, mirroring one more association seen as genuine turns into a "protected" approach. Mimetic isomorphism is opposed to coercive isomorphism, where associations are compelled to change by outer powers, or standardizing isomorphism, where proficient norms or organizations impact change. The term has been applied by organizations like McKinsey and Co as a feature of their suggestions to organizations going through rebuilding or other hierarchical changes (Mckinsey, 2021).

- **Normative isomorphism**

Pressures welcomed by occupations drive regularizing isomorphic change. The permitting and crediting of instructive achievement is one method of legitimization. Between authoritative organizations, then again, range associations. Associations embrace the standards shaped during training. Isomorphism is additionally energized by between recruiting between laid out modern organizations (Dimaggio and Powell, 1983; Li et al., 2019; Mckinsey, 2021). Individuals with

comparable instructive foundations will handle difficulties along these lines. These congruities are built up through work environment socialization.

Standardizing isomorphism varies from mimetic isomorphism, in which vagueness animates impersonation, and is practically identical to coercive isomorphism, in which outer variables force associations to adjust.

2.4.2. Global Reporting Initiative

The GRI was laid out in 1997, however, it just earned global respect in 1999 in the wake of framing vital collaboration with the United Nations Environment Program. GRI reporting has consistently had a huge commitment to ecological issues. The GRI 2006 manual, for instance, incorporates 30 ecological execution measures. GRI G.3.1 includes 10 new pointers for proficiency, improvement, biodiversity impact management techniques, and green house reduction measures, as published by Marimon et al. (2012) in 2011. This guide presently contains a perfect creation pointer (EN30), which works out ecological control and the management costs in view of the additional expenses of introducing cleaner technologies or purchasing green items. GRI is currently dealing with its G4 rules, changing EN11-15 execution markers, recognizing extra biodiversity execution pointers and measurements, and looking for new biodiversity execution pointers and access instruments. G4 EN16, EN17, and EN18 will incorporate ozone-harming substance outflows execution markers to guarantee that current pointers and new philosophies for ozone-harming substance emanations are predictable (GRI, 2012). Likewise, on the grounds that "numerous areas have explicit maintenance worries that should be tended to in sustainability reports," the GRI adds to the area guidelines. The first reporting principles might not have resolved these issues (GRI, 2012). Sectoral rewards are presently accessible to air terminal administrators, development and real estate firms, energy

providers, occasion coordinators, monetary administration organizations, food processors, mining and metallurgy ventures, NGOs, oil and gas partnerships, and media associations. These endeavors to advance better natural stewardship have shown positive outcomes. GRI revealing has been connected with better natural execution. In a GRI report of 191 organizations at high gamble of contamination and dependent upon severe guidelines in mash and paper, synthetics, oil and gas, metals, and mining, Clarkson and partners (2008) found a positive relationship between's natural exhibition and optional divulgence, as well as open administrations in the United States. Since establishing an ideal environment for them can be testing and noticeable, these creators suggest that organizations with proactive ecological objectives use GRI detailing as an instrument to illuminate financial backers and different partners. Subsequent to directing a similar sort of investigation across 51 Australian mining and assembling firms, Clarkson et al. (2011) found that higher-dirtying endeavors revealed more natural data and depended on GRI answering to certainly communicate their activities and results to the market. As per Gamerschlag et al., more prosperous firms are additionally connected with expanded natural divulgence (2011). Likewise, businesses with solid administrative structures, including utilities (Mio, 2010) and mining (Fonseca, 2010), have consolidated GRI detailing more for the most part and ahead of schedule than others (Tsang et al., 2009). Subsequently, compound escalated firms will generally be more aware of the need to unveil ecological worries and make changes to their activities (Noronha et al., 2012). Different creators (Mitchell and Hill, 2009; Frynas, 2010; Gamerschlag et al., 2011; Kuo et al., 2012) have expressed that more risky businesses, like mining, oil, synthetic substances, and car, as well as exceptionally naturally delicate enterprises, like the timberland business, have embraced GRI announcing (Toppinen et al., 2012). Monetary administration organizations, while having a minor natural effect, take part in GRI revealing, as

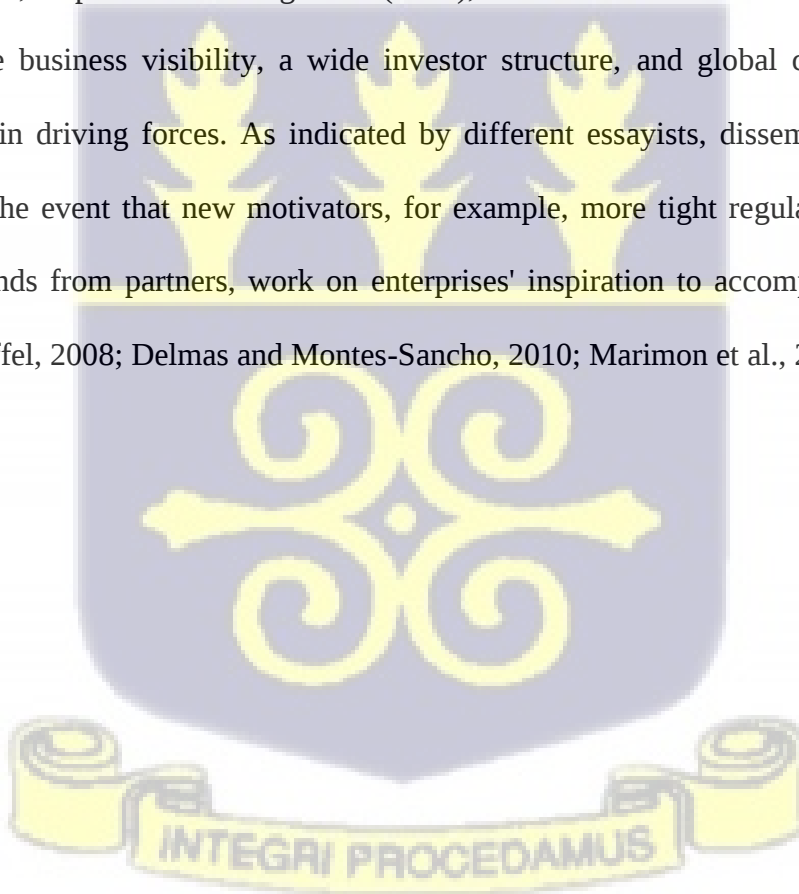
per the creators. Monetary administration firms "buy into supportability records to help the attractiveness of their portions," as per the fundamental reasoning. Thus, apparently, the business is affecting the execution of the GRI (Marimon et al., 2012; Legendre and Coderre, 2012).

As far as friendly issues, the GRI is additionally dedicated to further developing them. Subsequently, the GRI G.3 incorporates 40 social execution measurements. The GRI likewise has a worldwide key organization with the United Nations Global Compact and the Organization for Economic Cooperation and Development (GRI, 2012). The G4 guidelines will likewise incorporate enemy of debasement and word-related wellbeing and security execution benchmarks. Execution pointers SO2-SO4 are being changed specifically, and a new enemy of defilement revelation markers and methodology are being explored. The G4 will require the foundation of the LA6-LA9 execution markers, as well as interesting strategies for word-related wellbeing and security revelations that are predictable with current pointers (GRI, 2012). As per Ioannou and Serafeim (2011), carrying out the GRI works on socially capable activities and assists with limiting shrewd administrative lead and defilement both inside and outside the organization.

Subsequently, most ventures that depend on partners for continuous asset conveyance, like money (Asif et al., 2011) or utilities (Mio, 2010), are expected to indicate how social tasks are dealt with. Thus, monetary administration firms are assuming corporate social liability (CSR) more genuinely than previously. This is for the most part because of legitimate strain and activism, as well as the way that ongoing business sectors all over the planet view the monetary administration area as a supporter of the ongoing monetary emergency (Marimon et al., 2012; Noronha et al., 2012). As per Bravo et al., monetary establishments are taking on GRI answering to show their obligation to great citizenship (2012).

As per Noronha et al. (2012), different explanations behind embracing manageability detailing incorporate the extending number of recorded organizations all over the planet, which makes them more noticeable, and the increment of worldwide exchange between additional controlled business sectors and creating markets. Basic freedoms, work well-being, and local area support are accordingly huge issues in China's turn of events. These equivalent components play had a vital impact on the GRI's execution in industrialized nations (Gamerschlag et al., 2011). Besides, past exploration has found a connection between market esteem and dependable divulgence under GRI standards, in any case, more examination is required (Schadewitz and Niskala, 2010).

Area commitment, as per Gamerschlag et al. (2011), could make sense of the GRI's extension, with factors like business visibility, a wide investor structure, and global connections going about as the main driving forces. As indicated by different essayists, dissemination examples might move in the event that new motivators, for example, more tight regulation or expanded revelation demands from partners, work on enterprises' inspiration to accomplish GRI models (Delmas and Toffel, 2008; Delmas and Montes-Sancho, 2010; Marimon et al., 2012).



CHAPTER THREE

METHODOLOGY AND METHODS

3.0 Introduction

According to Kothari (2004), a research methodology allows a researcher to determine a research topic and the rationale behind it systematically, making it a systematic approach for doing research (Singh, 2006). Every scientist's conceptual premises or perspectives, the survey design, and the research strategy and design utilized to achieve the study's objectives are all part of the research basis for this study. It includes information on the study population and sample, sampling procedures, the study's legitimacy, dependability, and relevance, as well as ethical implications.

3.1 Research Design

3.1.1 Philosophical Assumptions

Rahi (2017) defines research philosophy as "a set of beliefs, a set of agreements about how issues should be understood, and the perspectives from which the world should be regarded when undertaking research." "The full constellation of beliefs, attitudes, procedures, and so forth held by members of a certain community" is what is meant by research paradigms (Kuhn, 1970, p.175). Positivism, constructivism or interpretivism, and pragmatism are the three most popular ideologies. Each of these can be further categorized by looking at their methodology, ontology, and epistemology. Fundamentally, ontology refers to the character of reality, epistemology to the relationship between the researcher's view of reality, and methodology to the numerous methods and instruments employed in research analysis.

According to Thi and Thanh (2015), the interpretive paradigm allows the researcher to observe the environment via the participant's experiences and perceptions and allows the investigator to

have ideas about the realities on the ground. The interpretative paradigm, according to Kivunja and Kuyini (2017), is founded on three fundamental research philosophy principles: subjectivist epistemology, relativist ontology, and balanced axiology. Objective epistemology permits the researcher to build knowledge based on personal observations and interactions with study participants, such as questioning and listening. Relative ontology is founded on the idea that the phenomena under investigation have various realities that may be investigated through interaction between the investigator and his participants. Here, these paradigms encourage the researcher to adopt the qualitative approach to understand the phenomenon under study. According to Kivunja et al. (2017), the balanced axiology of the interpretative paradigm presupposes that the study's findings will, in the end, represent the researcher's values in attempting to present a balanced account of his study's findings. As a result, to comprehend the nature of sustainable practices in Ghana's downstream petroleum business, the researcher employs the interpretative approach. Here, the objectives of the research, which is to identify focus areas of sustainability practices, operationalisation of sustainability practices, and the manner through which sustainability is practiced, will be well understood as there will be a series of interactions between the researcher and the study's participants and their responses.

3.1.2 Research Method

There are two well-known research methods namely the quantitative and the qualitative research methods. The quantitative method utilises statistical methods to analyse data to identify patterns while qualitative research employs a set of strategies and processes that include broad assumptions to specific data gathering and interpretive methods (Grover, 2015). Here, the quantitative research approach cannot be adopted for this study because it is characterized as being structured with predetermined variables, hypotheses and design (Denscombe, 1998, p173;

Bryman, 2012, p408; Creswell, 2009, p17; Christensen and Johnson, 2012, p34-5). As a result of using predetermined working strategies, the approach does not require or encourage imaginative, critical and creative thinking (De Vaus, 1996, p8) and thus cannot be adopted for this study. This study adopts the qualitative method. Discovering meanings, attitudes, values, and beliefs that individuals connect with a phenomenon are what qualitative research is all about (Boateng, 2016). According to Yin (2015), qualitative research is distinct because it focuses on expressing the insights and perceptions of the research participants. Farooq and de Villiers (2017) as well as Ma (2017) believe that sustainable practice research is undervalued and thus, Manetti et al. (2018) posit that qualitative study is required to better understand the subject matter. It is, therefore, appropriate to use the qualitative method to examine sustainability practices amongst downstream petroleum companies in the Ghanaian context.

3.1.3 Research approach

This section discusses types of designs for qualitative inquiry. These types of qualitative designs comprise narrative research, phenomenology, grounded theory, participatory action research, and case study. The succeeding section discusses the case study method which is adopted for this study in detail.

Case Study

A case study is an inquiry into a contemporary occurrence to obtain an in-depth understanding of the occurrence within its real-life context (Yin, 2009). It involves a detailed account of a case within its natural setting and builds a rich and contextualised understanding of the case (Cresswell et al., 2007). To do this, the case study design elicits data from documentation, interviews, participant observation, or artifacts to illustrate a phenomenon. In the examination of a case, posing relevant questions - what can we focus on to develop a rich understanding of this

case? how do we capture important details of the case - is crucial to uncover critical situations that are relevant for the study (Buchanan, 2012). Yin (2009) explains that researchers can choose between single-case studies or multiple-case studies which are the two forms of case study design. This study uses the case study design to understand the motivating factors of sustainability practices and how these practices are operationalised in downstream petroleum firms in Ghana. The response of the accounting profession to calls for sustainability practices is visualised as a “bounded system” or case in which the researcher sought to draw on multiple data sources to discover rich and contextualised meanings in the Ghanaian setting (Cresswell et al., 2007, p. 245). The interpretive nature of qualitative inquiry enabled the researcher to reflect on these meanings and develop a report that incorporates the ideas and views of the study’s participants. Besides, the case study design is most suitable for this study because it will help discover regularities, irregularities, patterns, threads, or themes that will emanate from the data collection and analysis processes.

3.2 Data Collection Design

3.2.1 Sampling method

Sampling as defined by Gentles and Ploeg (2015) in qualitative research is the identification of data sources that are obtained to fulfill a study’s objectives. According to Etikan and Alkassim (2016), a sampling approach allows a subset of a populace to be represented, which might be statistical or non-statistical. The study employs a non-probability sampling approach to choose the unit that best reflects the study's population. According to Devers and Frankel (2000), non-probability sampling allows the researcher to improve his awareness of organizations, groups, people, or activities that give the most insight into a subject matter. As a result, the research employs the purposive sampling approach, which according to Tongco (2007), enables the

researcher to target knowledgeable professionals on the sustainability practices of downstream petroleum firms. Here, the researcher sampled petroleum firms in Ghana and for the purpose of the study, narrowed the firms to the downstream firms. These downstream firms are believed to possess the knowledgeable professionals or participants who would contribute to this study.

3.2.2 Sample size and number of samples

A sample is a subset of research participants chosen from a larger group for research purposes (Alvi, 2016). The study's respondents or sample includes downstream petroleum companies in Ghana. The companies considered by the study are Total Energy, Puma Energy, Zen Petroleum, Shell Ghana, and Ghana Oil (GOIL). According to Cho et al. (2014), these companies in the downstream petroleum sector engage in activities that have environmental impacts. Furthermore, all of the companies selected are multinationals except GOIL which is owned by the Government of Ghana. Multinational downstream corporations generate environmental reports since major companies are concerned with CSR or sustainability practices (Amponsah-Tawiah & Dartey-Baah, 2011; Hinson et al., 2010). These five downstream firms were also selected because of easy access to data through interviews.

Establishing the precise sample size for qualitative investigations is challenging; nevertheless, current literature has given guidelines for calculating descriptive small samples (Guetterman, 2015; Tongco, 2007). On the other hand, Mason (2010) contends that the threshold of data collection and analysis should now be the driving concept for determining a response rate during qualitative studies till the point where data can no longer be collected, hence, data saturation. Here, Fusch and Ness (2015) posit that data saturation happens when a sufficient amount of data has been gathered. To attain data saturation, Guest, Bunce, and Johnson (2006) argue that 15 or

fewer interviews are sufficient to detect common themes among highly homogeneous populations. Data saturation was obtained at the sixth interview.

3.2.3 Data collection methods

3.2.3.1 Semi-structured Interviews

Data collection is an important activity in qualitative research, as per Njie and Asimiran (2014), since the efficacy of the data collection technique aids in discovering significant facts about a phenomenon. The researcher considers using interviews to gather data from the respondents to gain full knowledge of the phenomena at hand. Semi-structured interviews, according to McIntosh and Morse (2015), allow for the probing of planned open-ended questions. The purpose of these questions is to elicit uncontrolled replies from respondents. Respondent's engagement is regarded as an acceptable method of data collection since it helps the researcher learn how respondents see the social reality under investigation (Kvale, 2009).

A tractor-trailer interview, as a key data collection instrument, aids in determining participants' perspectives on phenomena-related experiences, which is why it was chosen for this study. For example, Farooq and de Villiers (2017) and Manetti and Toccafondi (2012) have urged ongoing studies on sustainability practices to employ interviews to engage with the people in the study. Interviews, according to Parker and Roffey (1997), are an acceptable medium for investigating social responsibility elements of accounting. To gain a better understanding of the phenomenon, the current study conducted semi-structured, accessible conversations with the study's respondents. Interviews were conducted to get thorough viewpoints on the study's main research topic, namely, what the focal areas of their sustainability practices were and why sustainability is practiced in its current manner. Staff from these selected businesses in the downstream oil and gas industry were interviewed. In the present study, an oral interview guide was created to gather

responses from respondents, with interviews lasting on average between 30 and 45 minutes. Diversity of gender, education level, and job positions were also prioritized in the interview frame; data showing the types of jobs held at the time of the research is supplied in the appendix. In each case, the interview took between 25 and 35 minutes. taking place between April and July 2021.

In addition, secondary data collection technologies were used. Annual reports and official documents, as well as policy papers, were used to corroborate and validate replies from interviewees. All reports and papers were obtained through the use of the internet. Here, websites like google scholar, emerald insight, academia, Ghana.gov, and company websites were combed through for these reports and documents.

Table 4: Code of Analysis

Serial No.	Company Name	Position	Years of Experience	Duration of Interview
Z1	Zen Petroleum	HSE Manager	6	35
Z2	Zen Petroleum	Financial Controller	4	28
G1	Goil	EHS Director	7	25
S1	Shell Ghana	HSE Deputy Manager	7	31
S2	Shell Ghana	HSE officer	3	26
P1	Puma Energy	EHS Supervisor	3	32
T1	Total Ghana	HSE Manager	5	31

3.3 Data Analysis

According to Grbich (2013), qualitative data analysis is a challenging process that combines the researcher's opinions and study decisions, the design and techniques of data collection, the

presentation of one's conclusions, and the logical processing of the findings analyzed. Numerous methods for processing qualitative data have been developed by qualitative researchers like Miles and Huberman (1994) and Wolcott (1994). (1994). For instance, Wolcott (1994) suggests starting a qualitative data analysis by reviewing the results that are the most intriguing first. The study process continues with a graphic representation of the findings, the detection of data trends, and the careful description of what occurred without generalization. According to the scholar, the data analysis process is completed whenever the researcher places the findings in a larger conceptual approach, draws linkages, and connects them to theory. Miles and Huberman (1994) offer a set of guidelines for doing data analysis.

Among the methods are the creation of codes and their application to written techniques such as interviews. The discovery of patterns, themes, and connecting connections between issues. Researchers also suggest utilizing visualizations to categorize and discover patterns, which allows the researcher to observe how the data develop into categories. To capture the meaning of each statistic, the experts suggest summarizing and condensing the data into smaller pieces. The researcher's theoretical lens is utilized to analyze the information, and the insights of the data are reduced to a few phrases and sentences. While the techniques proposed by academics are similar, the researcher applied Miles and Huberman's (1994) methodology to data analysis to fulfil the present study's goal, which includes decreasing the data, showing the data, and concluding by making a verification conclusion from the data displayed. Ngulube (2015), on the other hand, highlights the similarities in the phases of data analysis as a continuing process in which analysis spins around the research enquiries or theoretic framework acknowledged from the literature, thus, tumbling the data into sectors, and connecting them to literature and theory as data interpretation. To ensure that the evidence was examined methodically, the interview recordings

were transcribed and a preliminary reading was done, with an emphasis on finding common themes. Although individuality is inescapable in gaining an understanding of views and beliefs, Husserl (1970) points out that this is not a major problem in qualitative research in terms of logical ideas. Several convincing lines of argument were identified in the transcribed text, and specific quotes were selected to convey them as completely as possible. The hunt for themes began with a thorough analysis of vast portions of text, with an emphasis on word recurrence in particular. The approach revealed a few terms and phrases that interviewers employed while discussing points and concepts, a process that Spradley (1979) calls "interviewing" the text. Each distinct phrase was also identified, and the number of interviewers who used it, as well as the frequency with which it was used, were totaled. The quotes were subsequently registered, together with the interviewee's code and its location in the text, and this information served as the basis for topic definition. The record-holder was utilized as a point of comparison in the last segment. All the quotes have been doubled before agreeing to the structure for the write-up to ensure that they correctly represent the main subject of the talks and the actual impact achieved from the effort. This enables the identification of similarities and differences in perceptions according to Glaser and Strauss' "continuous comparison" method (1967). Flick (2009, p. 318) argues that text coding by themes is acceptable when "random selection is oriented to the groups whose points of view appear to be most illuminating for analysis" and data is obtained by "identifying topics while remaining open to the views linked to them," as in the current study.

Whenever the research was working with the data, the secondary data was used to confirm interviewee responses. The assessment looked for similar words and themes mentioned in the interview, as well as a thorough follow-up check of annual reports to discover issues raised.

3.4 Study Credibility, Reliability, and Validity

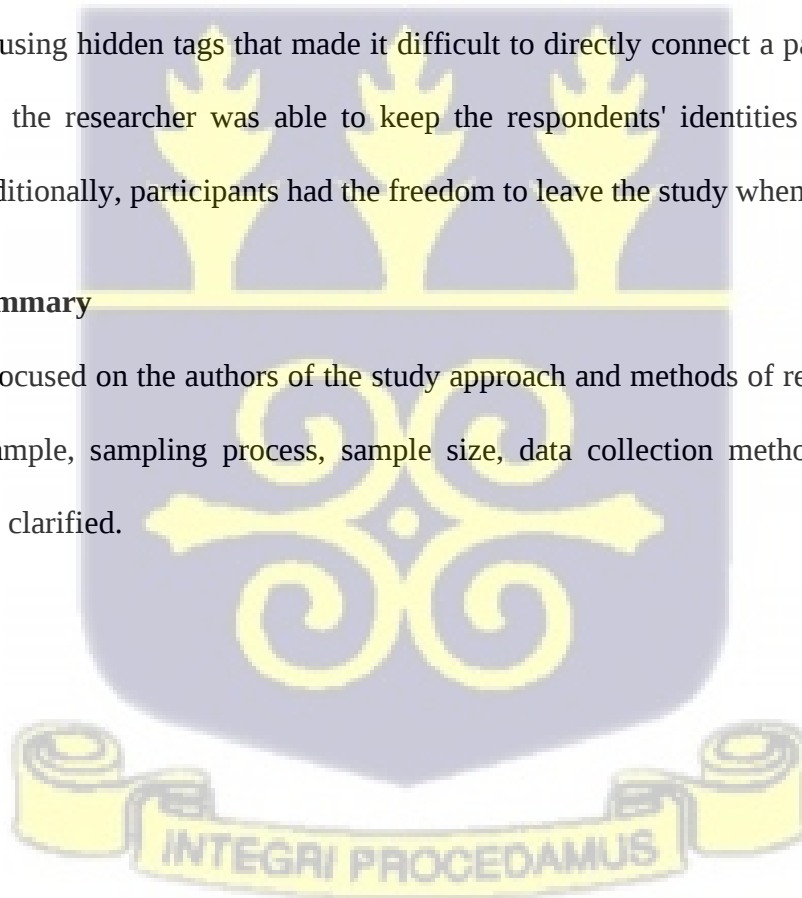
The credibility of the original studies, or belief in the accuracy of the study conclusions, is a significant factor in evaluating the quality of research, according to Polit and Beck (2013). Researchers must focus on evaluating their findings against the many groups whose data was acquired or by people who know them since study credibility is predicated on the assumption that there is a measure of physical reality (Guba, 1981). The credibility of qualitative research relates to the accuracy of the data provided and the interpretation of its researchers (Polit & Beck, 2012). Cutcliffe and McKenna (1999) suggest that a technique to guarantee the reliability of qualitative research is to adopt several theories and other researcher publications, such as policy papers, to better understand the event. The credibility of the current study was thus determined by linking the topics arising from the study's findings with recognized theories, policy documents, and academic reporting practices. Relying on research necessitates researchers' ability to make a trustworthy judgment regarding the acceptability of the methods employed (Noble & Smith, 2015), as well as the methodology's ability to provide consistent results (Brink, 1993). According to Seltiz et al. (1976), qualitative research is reliable because of the researcher's capacity to obtain accurate data and incorporate it into respondents' narrative. This was accomplished by doing a thorough examination of the interview settings to verify that the information analysis was consistent and unambiguous. The validity of qualitative research, according to Whittemore and Chase (2001), is attained when the researchers' findings clearly answer the study questions posed by completion and immersion. Data saturation was obtained for this study during the sixth interview, when all research objectives were met.

3.5 Ethical Concerns

According to Yin (2011), ethical concerns cannot be avoided in any project. According to Diener and Crandall (1978), researchers must ensure that survey participants have sufficient information about the research they are being invited to participate in, that contestants are protected through informed consent, and that the information obtained from them is kept confidential. In an effort to address the ethical issues posed by the current study, participants' consent was requested in writing in the form of an introductory letter that gave them background information about the researcher and what the research entails generally. The participants were made aware that the researcher would only use the data collected for academic purposes and that it would be kept anonymous. By using hidden tags that made it difficult to directly connect a particular comment to a participant, the researcher was able to keep the respondents' identities secret from non-participants. Additionally, participants had the freedom to leave the study whenever they wanted.

3.6 Chapter Summary

These chapters focused on the authors of the study approach and methods of research. The study demographic, sample, sampling process, sample size, data collection methodology, and data analysis were all clarified.



CHAPTER FOUR

DATA ANALYSIS

4.0 Introduction

The study's findings are presented in this chapter. The profile of the firms and their responders, as well as the conclusions from the study based on the research objectives, are included in this chapter, thus, exploring the key concerns motivating the OCs' sustainability practices in Ghana's downstream petroleum sector, how sustainability is practiced in the downstream oil and gas sector in Ghana by the OCs, and why sustainability is practiced in the downstream sector in its present form.

4.1 Profile of Firms and their Respondents

Table 5

Serial No.	Company Name	Position	Years of Experience	Duration of Interview
Z1	Zen Petroleum	HSE Manager	6	35
Z2	Zen Petroleum	Financial Controller	4	28
G1	Goil	EHS Director	7	25
S1	Shell Ghana	HSE Deputy Manager	7	31
S2	Shell Ghana	HSE officer	3	26
P1	Puma Energy	EHS Supervisor	3	32
T1	Total Ghana	HSE Manager	5	31

4.2 Key focus areas driving sustainability practices

Table 6

ZEN	TOTAL	PUMA ENERGY	GOIL	SHELL
Transportation	Entrepreneurship	Minimizing the use of energy	Carbon control	Net Zero Emissions
Climate change	Transport Safety	Reducing Carbon emissions	Transportation	Waste Management
Quality water systems	Education and training	Water and waste responsibility	Hydro Carbon control	Biodiversity Protection
Health and safety management	Spillage control	Transportation		Safe Fuel deliveries
				Life empowerment

The above table reflects the various focus areas of the downstream petroleum firms considered for this study. These focus areas were identified as the researcher engaged and interacted with interview responses from respondents. These focus areas were identified to be common across

the companies, hence the decision to halt data collection since a point of saturation was reached. The reasons for these downstream firms focusing on the identified areas are thoroughly expounded in the following sub-sections.

4.2.1 Transportation and safe fuel deliveries

The logistics network, which consists of pipelines, ships, trains, and trucks, is necessary to transport petroleum products from the refineries to the end customers. Petroleum products are frequently transported through a variety of modes of transportation from refineries, ports, and big terminals to extremely scattered markets across the nation. If the distribution system is not completely managed, degradation or contamination of products in transit may result in an expensive reprocessing at destinations. Providing a high-quality product is crucial from an environmental standpoint. At each functioning entity, some level of autonomous management will typically be required. However, it is implied that the many organisations should be viewed as components of one sizable distribution system due to the requirement for a coordinated response and the desire to save costs. In circumstances like transportation, businesses must engage in a variety of activities, such as product trading, to reach the economic costs. Aside from economic costs, and in as much as there is the need to transport quality products, harm is caused to our environment, especially on roads and atmospheric surroundings. Here, fumes from Bulk delivery vehicles are usually unavoidable, and sometimes road traffic accidents are caused by these vehicles. Here, representatives of these downstream petroleum firms when asked factors for transportation being of their focus areas stated:

“erm....our transportation network is the road, operating 24/7/365 to ensure prompt and efficient fuel deliveries globally. Here, transportation of fuel and other hazardous liquids is a core part of our business, and a key part of the service we provide for our customers. We take the well-being of our drivers very seriously and take every precaution to ensure their safety and that of others”.....PI

“At Shell, one of our focus areas, I would say is transportation. You see our major activity is the transportation and distribution of fuels and our management is concerned with the continuous focus on effectively implementing proven practices across all our businesses especially with transportation of fuels in high-risk countries and also I would say transportation is paramount to us even to the extent that we are working with road contractors to increase the use of advanced technology to support safe driving.”S1

“Ok for us at Totale, because of the risks associated with transportation, and the likelihood of an operational accident as a result of the hazardous nature of the products handled and transported, it has become expedient to place much focus on transportation as a key area of concern. Also, the volumes, length of the journey, and sensitivity of the regions through which products are transported (quality of infrastructure, population density, environment) necessitate the focus on transportation.”T1

“.....Ok so we derive our focus areas from the standards provided by our regulatory bodies, that is the NPA and the Petroleum Commission. And we have transportation as a key focus area, not only because of what has been provided by the regulatory bodies but our vehicles are on the road 24/7 travelling all the regions of Ghana, distributing fuels to these mining firms in the country and individual consumption as well. We are well aware of the risks we pose to the environment and even some road accidents and spillages.... So yes.... We place transportation as an important focus area.”Z1

“.....at Goil, we have a reflection of being owned by the government therefore we are being watched in the society, especially how we conduct ourselves on the road in the process of transporting fuels. So transportation is definitely one of our core areas.”G1

These responses obtained from the representatives of these firms fell in line with the provisions of the regulatory bodies and annual reports. These regulatory bodies on their provisions concerning transport focused on licensing and sanctions to be meted out to transport operators-drivers who in the process of carrying out their duties do not comply with the regulations guiding their activities. Operational activities such as one conveying or transporting fuels to the whole of the country require the use of these roads of which it is imminent for regulations to be provided, contributing to the environmental component of the economy to be sustained. These regulations

by the NPA served as validating statements confirming what the respondents stated from the interviews, and enabling deductive reasoning to be made out of why these downstream firms may have transportation as one of their key focus areas. Some confirmatory statements from the provisions of the NPA regarding the transportation of fuel to the firms' various stations are:

“A person who unlawfully destroys or damages equipment, installation or facility for the refining, storage, bulk transportation, marketing or sale of petroleum products commits an offence and is liable on summary conviction.”NPA 61 (1)

The researcher again sought to include annual and sustainability reports for a more concrete confirmation on the view of respondents. Here, these firms under discussion explicitly reported on why transportation is one of their imminent focus areas. Here, they state:

“Our vehicles can travel vast distances, particularly on highways linking major Cities in Ghan where the delivery runs of long-haul road train drivers can last for days. As part of our commitment to ensuring that our products are transported safely, and to the health and well-being of the drivers making these long runs, and also the environment is protected through accident preventions, they are provided with sleep bunks, GPS tracking, and satellite phones.”P

“We develop best practice standards within Zen and work with others, such as specialist contractors, industry bodies, non-governmental organisations, and governments, to reduce road transport risks”Z

“Serving our customers can involve the long-distance transportation of fuel and other extremely hazardous liquids – sometimes across very dangerous terrain or through rural villages, using poor roads and infrastructure. Although our regional operations use contracted transportation, we follow and apply very strict standards and processes when contracting haulers to ensure that we appoint reputable and reliable service providers that manage their operations safely and sustainably”T

Considering the responses and their relations with their annual reports, it is noticed that indeed transportation and safe fuel deliveries are paramount to achieving a sustainable practice in the downstream petroleum sector.

Given that transportation typically accounts for a higher percentage of logistics expenses than any other logistical activity, it is a crucial area for decision-making in logistics (Ballou, 1999). Despite the existence of numerous modes of transportation, road travel dominates in our region of the world because the other modes, such as rail, water, and air, are under-resourced. Since some externalities are brought about throughout the course of their deliveries, road transport is unfortunately rife with difficulties that must be understood and controlled to minimise their influence on the organisation and their surrounds as well. According to Asare et al. (2014), transportation adds and places value on the commodity as safe fuel deliveries are ensured. Ensuring safe fuel deliveries through transportation should be paramount to the operations of the entire firm's activities (Asare et al, 2014), thereby contributing to maximizing shareholder value.

4.2.2 Carbon emissions reductions

Over the last several decades, governments have collectively pledged to slow global warming. But despite intensified diplomacy, the world could soon face devastating consequences of climate change. Through the Kyoto Protocol and the Paris Agreement, countries agreed to reduce greenhouse gas emissions, but the amount of carbon dioxide in the atmosphere keeps rising, heating the earth at an alarming rate. Maizland (2021) indicates that if this warming continues unabated, it could bring environmental catastrophe to much of the world, including staggering sea-level rise, record-breaking droughts and floods, and widespread species loss.

According to International Energy Agency (IEA) (2020), oil and gas companies are facing a critical challenge as the world increasingly shifts towards clean energy transitions. They posited

that fossil fuels drive the companies' near-term returns, but failure to address growing calls to reduce greenhouse gas emissions could threaten their long-term social acceptability and profitability. These concerns are gradually being addressed by downstream oil and gas firms as these firms have deliberately reduced carbon emissions as part of their key focus areas. Here, respondents from their firms stated:

"Considering the attention drawn onto climate change, we have also decided to contribute our quota by ensuring our vehicles for transportation emit less carbon".....S1

"We are very much concerned with the amount of gas we release into the atmosphere. Now many international organisations are engaging and ensuring the reduction of methane and carbon to prevent climate change and so we have introduced mechanisms that help reduce the carbon we release into the atmosphere such as constantly servicing our bulk vehicles and fuel stations burnings".....Z1

"Because we transport fuels to all parts of the country, we focus on controlling our carbon emissions. We are usually closer to individuals in the society and also closest to customers because of our distribution operations so there is the need to control the number of gases we push into the atmosphere on our roads and during traffic and all".....G1

"We have fuel stations all over the country and as you already know we are transferring fuel to these stations now and then which requires the use of roads and since we are also closer to citizens, we find it expedient to consider the amount of exhaust we emit from our delivery vehicles".....T1

"Carbon control have been of importance to us because we find it necessary to reduce the amount of CO₂s in the atmosphere, we also know regulatory bodies pay attention to climate change and would require our report on it so carbon emissions are paramount to us".....P1

Following these responses were confirmations from their respective annual and sustainability reports on the extent and progress of their practice on reducing carbon emissions.

For Puma Energy, they indicated;

“We are actively focusing on this issue and are working to formalize our commitments and framework to move towards net carbon zero operations as part of our vision for the future of energizing communities around the world.

Another point Puma raised was that:

“We optimise our energy use and move to renewable energy sources, reduce our scope 1 and 2 emissions intensity year-on-year, and lastly embed Decarbonization ambition into our supply chain and build capacity to enable this shift”

For Totale, they indicated;

*“We are exploring the dynamics and future of the industry as part of our strategic focus on new business development. Accordingly, we have identified five areas to focus on: solar, decentralised energy, biofuels, data and digitalisation, and **carbon zero**”*

For Shell Ghana, they reported;

“Although we have no immediate plans to move to a net-zero emissions portfolio, in November of 2017, we announced our ambition to reduce our Net Carbon Footprint in step with society’s progress toward the Paris Agreement’s goal of holding the rise in global average temperature to well below 2°C above pre-industrial levels”.

Shell further posited that;

“We aim to reduce our Net Carbon Footprint, which includes not only our direct and indirect carbon emissions, associated with producing the energy products which we sell but also our customers’ emissions from their use of the energy products that we sell, by around 20% in 2035 and by around 50% in 2050”.

Zen Petroleum in their Report also stated:

“We continue to take climate action on many fronts, including tackling our emissions and helping customers reduce theirs by expanding the choice of lower-carbon products we offer. We are working hard to play our part in the global transition by providing more and cleaner energy”.

Goil reported;

“We continue to work towards delivering on our Net Carbon Footprint ambition to cut the intensity of the greenhouse gas emissions of the energy products we sell by about 50% by 2050, and 20% by 2035 compared to our 2016 levels, in step with society as it

moves towards meeting the goals of the Paris Agreement. In 2019, we set shorter-term targets for 2021 of 2-3% lower than our 2016 baseline Net Carbon Footprint. In early 2020, we set a Net Carbon Footprint target for 2022 of 3-4% lower than our 2016 baseline. We will continue to evolve our approach over time”.

One of the most significant greenhouse gases, carbon dioxide (CO₂) emission, significantly contributes to global climate change (Baccini et al., 2012; Cox et al., 2013; Forkel et al., 2016; McKenzie et al., 2016). Recently, more academics have concentrated on taking into account embodied carbon emissions to evaluate how human economic activity affects the environment (Deng and Xu, 2017, Tang et al., 2017, Wu et al., 2016). Despite other emissions from other sectors, Jiang et al. (2019) hypothesised that carbon emissions were mostly driven by direct production demand from downstream petroleum enterprises. Controlling downstream industries' demand for direct production can therefore help to drastically cut carbon emissions.

4.2.3 Spillage and Hydro Carbon Control

Hydrocarbon contamination is of great worry because of its widespread effect on all forms of life. Pollution caused by increasing the use of crude oil is ordinary because of its extensive application and its related transport and dumping problems (Abha and Singh, 2012). According to Sakyi et al. (2012), oil spills harm marine organisms by damaging their digestive systems through digesting, absorbing oil from contaminated food, contaminating eggs to cause poor hatcheries, and trapping turtles and birds to cause fatalities. The petroleum sector has had numerous oil spills over the years that have seriously harmed the environment. The Exxon Valdez released 40,000 tonnes of oil in 1989, killing around 250,000 seabirds, nearly 3,000 sea otters, 300 harbour seals, 250 bald eagles, and up to 22 killer whales, while the Amoco Cadiz leaked about 227,000 tonnes of oil in 1978 (Patin, 1999). (BBC, 1989). Similar to this, the oil spill from the Erika oil tanker in 1999 impacted 400 km of coastline and resulted in the deaths of

over 100,000 birds (BBC, 2000). British Petroleum (BP Deepwater)'s Horizon exploded in the Gulf of Mexico in 2010, killing 11 people and spewing 4.9 million barrels of oil that polluted hundreds of miles of coastline and claimed the lives of 491 birds, 227 turtles, and 27 animals in the first 40 days following the spill (Reuters, 2010; BBC, 2011). Crude oil contains a complex mixture of aliphatic, aromatic, and heterocyclic compounds. Soil naturally consists of heavy metals, and due to human action like refining of oil and use of pesticides, their concentration in soil is rising (Dixit et al., 2015). Das and Chandran (2011) postulate that several areas have such high heavy metal and metalloid concentration that the surrounding natural ecosystem has been badly affected and thus proceed to explain that heavy metals and metalloids limit microbe's activity rendering it unsuitable for hydrocarbon degradation, thus reducing its effectiveness.

Respondents from the firms under study in their response to the reasons behind spillages and hydro carbon control being part of their focus areas are;

"In the course of transporting the fuel, there are some risks which are mostly road accidents which will result in spillages and fires. Here, flora and fauna are affected through these emissions so we try educating our staff especially our drivers and fuel station workers on avoiding accidents which will cause spillages"..... P1

"We track low-level concentrations of oil, grease and other hydrocarbons within water returned to the environment from the day-to-day running of our facilities (collectively referred to as "discharges to surface water"). We work to minimise these discharges in line with regulatory requirements and our standards".....S1

"Ok.... So most of the time in our fuel farms at minings sites and even in the transportation of fuel, there are likelihoods of spilling fuels in the environments and in situations where there are rains, these fuels are drained into water bodies around and these water bodies are used by inhabitants around, so you see we have put in place measures that will reduce these spillages"..... Z1

“We focus on spillages of hydrocarbons into our surroundings especially water bodies because they can be harmful to humans and aquatic lives, even spillages also cause climate change as oils on the surface of water bodies to prevent evaporation for rains to fall..... so there is a need to focus on petroleum spillages”T1

These responses were in line with their annual reports which stated the following:

“One of our major goals is to achieve zero major spills.....through our safe transport deliveries we are sure to achieve a reduction in the number of incidents, such as spillages and contamination that harm the environment, and reduces accidents, especially fatalities”P

“Knowing what our stakeholders care about, and truly understanding what matters most to them, drives our approach to sustainability. Continuous dialogue enables us to prioritise the following key issues and to take a stand for them and here, spillages and contamination are one of them”Z

“In line with the international standard, we target spills above 160 litres. In 2019, we succeeded in reducing the number of spills by 15%. We plan to dive deeper into this metric in 2020, separately identifying the spills related to road traffic and site spills. With a clear measure of site spills, we can look to tackle any operational issues associated with the spills, preventing any major incidents and improving our operational performance”S

“We continue to provide transparency of spills management and reporting, along with our deployment of oil-spill response capability and technology. We execute a maintenance strategy to support sustainable equipment reliability and have implemented a multi-year programme to reduce routine flaring of associated gas”G

Considering the responses and confirmations, environmental remediation is thus extremely necessary and involves the elimination of pollutants from soil, air, and water. In the last several decades, different methods have been employed and applied for the cleanup of our environment which includes mechanical, chemical, and biochemical remediation methods (Husaini et al.,

2008). Hydrocarbon pollution consists of many aspects like oil spills, fossil fuels, organic pollutants like aromatics, etc.

The International Association of Oil and Gas Producers (IOGP) (2015) stated in their 2015 report that reporting the frequency and amount of hydrocarbon spills more than one barrel (bbl) that reach the environment is the most well-established industry measure. (As a point of reference, 1 bbl equals 42 US gallons or 159 litres; when converting mass to volume in barrels for solids, use a default weight of 159 kg or a comparable amount to convert mass to volume.) The reported volume must reflect the whole estimated amount that was spilled and got into the environment. It shouldn't be diminished by how much of that hydrocarbon was later retrieved, evaporated, or lost in some other way. Companies may opt to report separately the quantity and number of spills, whether or not the spill reached the environment, in addition to reporting spills that reach the environment. Therefore, total spills would include releases of materials other than hydrocarbons from primary containment (e.g. spills that reach the environment, plus spills that are contained within impermeable secondary containment). This indicator offers further information about the efficiency and dependability of operations.

4.2.4 Environmental, Health and Safety (EHS) Management

Despite the sector's recent development, Schneider et al. (2013) argue that the petroleum industry must make significant adjustments to the way it conducts business. According to the American Petroleum Institute (API), 2014, this industry is among the biggest in the world, and rising revenues and costs are required to supply clients with the energy they need to preserve their way of life. Due to the considerable risks involved in these operations, businesses consistently try to lessen the magnitude of their negative effects on the environment and people (Schneider, Vargo, & Campbell 2011). High-profile incidents like the Santa Barbara oil leak in 1969 in California

and the Deepwater Horizon accident in the Gulf of Mexico in 2010 serve as proof of the industry's troubled past. Additionally, businesses in the industry were at the centre of significant environmental and human rights crises in other parts of the world. As a result of Shell Company's operations in Nigeria's Niger Delta in the early 1990s, there were problems with the indigenous Ogoni residents as well as river pollution. Native Americans in Ecuador sued Chevron in 2003 over the company's role in the Amazon rainforest's deforestation and the resulting harm to their health. The sector has moved closer to sustainability during the previous few years. Schneider et al. (2013) assert that companies that have the potential to have a substantial influence on the environment are held to a higher standard than those that do not. Companies in the oil and gas industry are held to the highest standards since a catastrophic failure might cause a significant catastrophe. Only if the business is held responsible for it will an EHS policy or mission statement be successful. How well a company's actions and metrics/indicators align with its stated vision, purpose, and EHS policy is a sign of the integrity of its management system. Here, in this research respondents of firms under study indicated why their firms were keen on ensuring EHS management. They stated;

“So here at Zen, our HSE officers educate us through monthly courses on risks in the industry and how to tackle them should we face such challenges.... So even the training cuts across all departments which means for us in the accounts department we also go through this kind of training. With its frequency, it used to be weekly but because the organization is expanding we had to make it monthly to ensure effective HSE practices and implementations”.....P1

“Ok for us one of our main focuses is making sure we don't cause any harm as far as people and environment are concerned and here, we have some key targets or things that we value and those are people, environment, asset, reputation, our customers and then our fuels, that is our stock, and it is in that order so you see, our my job as a safety officer and the organisations main focus is on its staff that is the people, making sure they working safely and free from danger”Z1

“Our staff and the environment within which they work are really paramount to us. Here, considering the risks associated with the business, we ensure the safety of our personels by frequently engaging them in pieces of training on best safety practices in the industry. Here, because we are a downstream firm, we place much attention on the transporters so that is the drivers who deliver the fuels to all parts of the country so we train them on avoiding accidents and even what to do before the accidents occur...so yh... we are keen on our staff”S1

“So concerning environmental health and safety, the environment within which we work is important and our staff area also important to us since the success of the company relies on a strong and healthy workforce with a great environment to work in. We organize training every month across or stations including a head office on how to avoid risks and dangers associated with their work schedules”T1

“The health and safety of our human resource personel is important enough to make it a focus area, and also our regulatory bodies require us to ensure the safety of our staff.....in the first place we don’t even need to be told to ensure of staff’s safety since our workforce are the strength of the company so there is the need to ensure or staff are in the right state of mind and environment to work to their fullest optimum”G1

About the annual reports of these downstream firms, the following confirmations were noticed.

“This manifests itself through regular employee engagement concerning all aspects of our work, community consultations for projects with potential social impacts, and Shell’s strong focus on health and safety and environmental issues”S

“In addition, we concluded that there are certain significant laws and regulations that may affect the determination of the amounts and disclosures in the financial statements and those laws and regulations relating to health and safety, employee matters, environmental, and bribery and corruption practices”Z

“The health, safety, security, and environment (HSSE) risks to which we, and the communities in which we work, are potentially exposed cover a wide spectrum, given the geographic range, operational diversity and technical complexity of our operations and hence we continuously seek to improve our operating performance and maximise sustainable free cash flow, with an emphasis on health, safety, security, environment and

asset performance, as well as our ethics and compliance principles. To achieve that, we strive for highly qualified and motivated employees”T

“The committee meets at least four times a year and focuses on four areas: Economic development Health and safety The environment Our people and the communities in which we work and with focus on Health and safety, the principal activities include Defining Puma Energy HSEC yearly goals Reviewing and approving any new guidelines associated to Puma Energy HSEC policies, Following up with each region on Puma Energy HSEC policies implementation”P

“Goil places great importance on safely and sustainably serving customer needs, and I was proud to see the launch of our sixth annual road safety campaign in 2018. Tragically, while our overall health and safety record was very good in the year, one of our employees died as a result of a road traffic accident, underlining the importance of our efforts in this area”G

Risks to safety and health exist at all levels of the sector, including production projects, facility operations, maintenance, construction, shipping, storage, and during the use of oil-derived goods, according to Achaw and Boateng (2012). Additionally, the enormous quantities of products that are produced, handled, or used in the business intensify any accident circumstances. The complexity of the technology and instruments employed in these industries, as well as the nature of the impact of the end products, byproducts, and waste products on human health and the environment, are additional factors (Achaw & Boateng, 2012). According to Asamoah (2011), despite the Petroleum (Exploration and Production) Law of 1984, which requires businesses in the oil production sector to adopt international best practises in their operations, no legislative instrument or body was found that specifically addresses occupational health and safety in the oil, gas, and related energy industries. As a result, Asamoah (2011) recommended that special attention be given to the health, safety, and environmental practises in the petroleum industry.

4.2.5 Water and Waste responsibility

Management of water, waste, and energy is essential to all oil and gas industry operations. The need to increase refinery efficiency is greater than ever as the downstream industry deals with regulatory changes, rising demand, and shifting prices. The potential for significant environmental and financial advantages arises from the ability to recover water and wastewater, manage hazardous and non-hazardous waste, recycle and regenerate wastes into new materials, and increase energy efficiency. These capabilities help to maximise the efficiency of refining. Finding an acceptable beneficial use for the water or choosing an appropriate water disposal method are both viable choices for water management in the petroleum sector. However, advantageous applications and waste alternatives may require water treatment before use or disposal because to how strongly they depend on water quality. Treatment of waste water may be necessary to comply with predisposal regulation restrictions or to meet standards for beneficial use (Arthur et al., 2005). In the petroleum industry, better and more efficient water management may lead to decreases in the amount and cost of raw water used in operations, probable decreases in wastewater flow or contaminant load or both, which may lead to lower operating and maintenance costs for wastewater-treatment, and decreases in the mass of contaminants in the treated effluent, improving the quality of a wastewater discharge and ultimately reducing its environmental impact (IPIECA, 2010). Below are comments from respondents from firms under study concerning why water and waste management is also one of their focus areas.

“For us because of the high cost of purchasing water and disposing of waste, we prefer to process and treat the water to be reused and we try as much as possible to recycle some of our plastic waste so we don’t keep buying stuff, and as you know we encourage recycling in our firm because these climate change issues”S1

“With water and waste management, because we always buy water from Ghana Water Company in bulk quantities, we find it necessary to conserve some and regulate its usage

in our fuel farms. In this case, we reduce recurring costs on water bills and also, we try as much as possible to recycle most of our waste products to preserve the environment”PI

“Ok.....On our fuel farms, because we don’t want any hydrocarbon to drain into water bodies around we have put in place measures to treat any water used so that even if some water will flow into any water body that water will be safe enough not to kill aquatic life in the water”ZI

“Water and waste management is also important as we have put in enough mechanisms to deal with how well we manage our water and waste products. The use of water and waste management goes on our fuel stations and protecting the environment means we have to take care of our wastes and our surroundings better”TI

Confirmations from these firms’ annual reports are as follows:

“Poor sanitation conditions and problems with the management and collection of waste in Ghana have affected more than 3,640 local families. We are contributing to the environmental preservation and sustainable and equitable socioeconomic development of the area and community through the implementation of zero waste strategies”T

“Shell strives to minimise the use of water in its shale operations. Depending on local conditions, we typically use a combination of fresh water, non-potable groundwater, produced water, and waste water. We work to reduce and ideally eliminate our freshwater intake. We deploy responsible withdrawal practices when using fresh water”S

“Puma disposes of the water safely and in compliance with applicable laws. Flowback water is typically transferred to a disposal facility. Meanwhile, we take produced water to a treatment plant for processing and then reuse it, as much as possible, for additional wells. When recycling is not reasonably practicable, or volumes exceed our operational needs, we may store and treat produced water, share it with other producers, or dispose of it in an environmentally responsible way”P

“Depending on local hydro-geologic conditions, we typically use a combination of fresh water, brackish groundwater, produced water, and waste water. We actively strive to reduce and ideally eliminate our freshwater intake for our drilling and hydraulic fracturing operations by increasing our recycling capacity and using municipal water”G

“We train our project teams to understand how to use impact assessments to embed sustainability into projects. Project teams are supported by specialists in areas such as biodiversity, waste, air, energy and water management, as well as indigenous peoples’ rights, cultural heritage and resettlement”Z

Harrenmose (1998) also made the hypothesis that organic compounds in discharged waste water, when released into marine waters, rivers, or lakes, react with and consume dissolved oxygen, depleting the water of oxygen and making it uninhabitable for aquatic organisms. This hypothesis was in line with the responses from interviewees. This is not unexpected given that Sakyi et al. (2012) also agree that trash discharges and oil spills have had adverse effects on the environment when they are contained in rivers, streams, and ponds. Similar to this, an excessive supply of nutrients to water bodies also encourages excessive plant growth, lowers water quality, and reduces fish and other aquatic organism populations (Harremo, 1998; WHO/EC, 2002). Here, it noticed that there is the need for water to be processed for reuse and even processed before disposing of it into the environment, hence the need to make water and waste management an important focus area.

4.3 Operationalisation of sustainability practices

This section contains details of how petroleum firms under study carry out their activities in their focus areas and their respective confirmations and results of their practices from their individual annual and sustainability reports. The researcher embarked on this journey after first identifying these already established focus areas. This section concludes with these firms reporting their activities to these regulatory bodies.

4.3.1 Adoption of most appropriate Key Performance Indicators (KPIs)

Here, respondents from these downstream petroleum firms under study, after explicitly stating their reasons for their focus areas, indicated that identifying appropriate KPIs was the necessary

starting point of their sustainability operations. Respondents further went ahead to indicate that these KPIs were adopted from policy documents of their regulatory bodies, despite the several reasons for their selected focus areas. It is noticed here that, policy documents stating the requirements of these regulatory bodies were the paramount motivations for those focus areas.

The respondents stated;

“We benchmark to the industry best practices provided in the EPA guidelines, the Min. Comm guidelines and NPA guidelines, for instance in the EPA guidelines on noise states that we cannot generate noise more than 85 decibels and the same goes for the water quality”..... P1

“We do our things in line with regulatory standards, so I can say our decision for some of our focus areas relies on what the NPA asks that we do in the standards”.....Z1

“The KPIs we create are physically what is stated in the guidelines of these regulatory bodies and that is how we can focus on some of the areas mentioned before...so you see in the EPA guideline there are provisions that co-ordinate the activities of the relevant bodies to control the generation, treatment, storage, transportation and disposal of industrial waste”.....T1

“We derive some of our KPIs from the standards and acts provided by regulatory bodies especially when it comes to fuel delivery and spillage control”.....S1

“Ok so for us some of our focus areas are motivated by the regulatory bodies since we have to operate in line with our the regulatory standards and even international standards like the ISOs”

Key performance indicators are measures that focus on the facets of business performance that are crucial for the present and future achievement of the corporation (Parmenter 2015). They are important because they pinpoint progress towards the company objectives (Šimková et al. 2015). Key performance indicators help organisations to manage performance, track unusual trends and give workers more power and help guide them towards company goals (Patty 2018). A study by Livohi (2012) indicated that many of the OMCs measured their downstream supply chain

performance using KPIs such as unit cost of transportation, and storage; quality of service, information and quality of products; time for loading, turnaround time, transportation, delivery and time to relay information; and customer feedback. It is noticed that per Livohi's (2012) finding, the only common KPI is transportation in comparison with this current study. This difference could be a result of the geographical context of the research and also the topic under discussion.

In conjunction with the annual reports of these companies, there were no confirmations whatsoever as to the firms establishing their KPIs on the standards of these international agencies and local regulatory agencies. Only Puma and Zen stated the following:

"The committee meets at least twice a year and its principal activities include reviewing KPIs and monitoring rating policies around our focus areas"P

"The main activities through the year include reviewing Group and regional HSEC statistics, performance KPIs and results; reviewing major incidents investigation reports; defining improvements and action plans based on lessons learned from these incidents, and planning and reviewing new HSEC campaigns and also we implement detailed greenhouse gas (GHG) data collection for each country, following similar principles to calculate Scope 1 and Scope 2 quarterly GHG emissions. Analysing the data collected, we will develop KPIs and measures for the effective mitigation of GHG emissions during 2021 and onwards"Z

4.3.2 Operationalisation of Sustainability practices through focus areas

Here, respondents explained how their firms have put in place mechanisms that enable the firms to operationalise sustainability practices through their focus areas. According to Nurul et al. (2015), the role of the petroleum industry within a sustainable society has been called into question due to the environmental impacts of its activities and products. It has therefore

necessitated these Ghanaian downstream petroleum firms to adopt systems and mechanisms to enhance their practice of sustainability practices through their identified focus areas. Here, respondents during the interview stated how they operationalise their focus areas in the sub-sections below.

4.3.2.1 Transportation and Safe fuel delivery

Respondents with regards to questions posed on how well their firms' operationalise sustainability in the process of transporting fuel and other materials across the country stated:

"We train our drivers monthly by showing them the dos and don'ts on the roads and we have made sure all of them are licensed. We even show them what to do even before the event of a road traffic accident to reduce the effects of the accident on the environment"Z1

"First of all, we ensure we are transporting quality fuel to our stations and also for safe deliveries we prefer transporting fuels in the nights when fewer cars are on the road"P1

"We are so keen on transporting fuels safely that we have placed trackers on our bulk delivery vehicles to read the speed of vehicles on our roads and we can track it from here in our head office so drivers who will be adamant and go against our speed limit are punished and sometimes even sacked when exceeding several warnings or threshold"S1

"In delivering fuels over the roads, we have put in mechanisms like assigning two or more drivers to a vehicle when there long journeys like from here in Accra to the northern regions. We don't usually do a rotation of drivers which means the same driver does a specific route for a long time before changing that driver's location. This is usually because of the unfamiliarity of roads when drivers are switched now and then."T1

"As I said initially our staff are important to the progress of this company, therefore, we are keen on protecting them and ensuring they do the right thing so for our drivers on the road we always monitor their movements and sometimes assign officers to travel with the on the journeys of transporting fuels, we also transport fuels in the night which tends to be faster and reduces cost as well"G1

These submissions had reflections in the individual annual and sustainability reports of these firms and even statements on how far or the extent to which they have achieved their objective on transporting fuels safely, hence progress in their sustainability practices. Some confirmations on their submissions from their annual reports are stated below:

“Although our regional operations use contracted transportation, we follow and apply very strict standards and processes when contracting haulers to ensure that we appoint reputable and reliable service providers that manage their operations in a sound and sustainable manner”Z

“We are proud of our long-term safety record and conduct regular audits and assessments, which enforce high standards that help to ensure the transporters we select to manage their operations effectively and maintain their vehicles to our exacting requirements. This reduces the number of incidents, such as spillages and contamination that harm the environment, and reduces accidents, especially fatalities”P

“We recognise that our trucks contribute to the increasing road traffic that represents one of the largest risks to people in the countries in which we operate. Supporting road safety campaigns is a key activity across our businesses and we aim to reduce road traffic incidents”T

“We successfully advocated and helped secure \$400 million in funding to help find ways to reduce risks on the roads. This work includes agreeing to policies such as lowering the 75 mile-per-hour (120km/hour) speed limit, widening roads and constructing passing and turning lanes to minimise conflict points prone to crashes”G

“In road safety, we continue to focus on effectively implementing proven practices across all our businesses, with an emphasis on improving the management of fuel transport in high-risk roads in Ghana. We work with road transport contractors to increase the use of advanced technology to support safe driving.”S

Given that transportation typically accounts for a higher percentage of logistics expenses than any other logistical activity, it is a crucial area for decision-making in logistics (Ballou, 1999). Despite the existence of numerous modes of transportation, road travel dominates in our region

of the world because the other modes, such as rail, water, and air, are under-resourced. Since some externalities are brought about throughout the course of their deliveries, road transport is unfortunately rife with difficulties that must be understood and controlled to minimise their influence on the organisation and their surrounds as well. According to Asare et al. (2014), transportation adds and places value on the commodity as safe fuel deliveries are ensured. Ensuring safe fuel deliveries through transportation should be paramount to the operations of the entire firm's activities (Asare et al, 2014), thereby contributing to maximizing shareholder value.

4.3.2.2 Carbon emission reduction

Carbon emissions, known to be one of the main environmental hostilities causing climate change is really of much concern to regulatory agencies both local and international bodies, leading to the establishment of standards and regulations to guide and control practices that lead to carbon emissions. These are some of the responses to how carbon emissions are controlled in these downstream petroleum firms.

"Ok so for us, first we ensure our vehicles used for transporting fuels are serviced now and then, even the ones our operational staff uses in the head office so that they don't produce fumes in public when on roads. We are trying everything possible to reduce carbon emissions in our environment".....P1

"Like I said the trackers attached to our vehicles take records of how much speed we go on our journeys and also it records the amount of mono oxide from exhaust pipes so I believe we are really committed to reducing the amount of carbon we emit".....S1

"I believe most of the carbon we emit as a downstream petroleum firm is from the delivery of fuels we make. So we ensure we don't emit too much gases when are vehicles are on roads....we service the cars every month and keep fresh engine oils to we don't have to emit too much carbon".....T1

“Ok so we have large machines at our fuel farms in some mining sites and these machines and storage facilities contain fuels for the mining purposes so we have put in place mechanisms such as not exceeding the carbon emission threshold of 5000 parts per million (ppm). We even save more so we sell them off to firms who emit more carbon. We also service our machines and vehicles periodically to ensure less fumes are produced in the environment”Z1

“For us we are even educating our consumers on the type of fuels they buy, so we ensure our fuel is quality enough that even when their car is faulty their emissions would be less, also we are trying to educate the coasters whom we supply premix fuel to so they reduce their carbon, so for us ours is quality fuel. Our delivery tankers are serviced frequently so our carbon emission I can boldly say is under control”G1

Confirmations from these annual reports confirming responses from the respondents of the interview are stated in the following paragraphs.

“In 2017, we were the first international oil and gas organisation to set the ambition to reduce the Net Carbon Footprint of the energy products we sell (a carbon intensity measure that takes into account their full life-cycle emissions including customers’ emissions associated with using them) in the period to 2050. We aim to do that in step with society’s drive to meet the goals of the Paris Agreement on climate change”S

“We announced plans in 2018 to link executive remuneration to short-term targets to reduce the Net Carbon Footprint of the energy products we sell, including our customers’ emissions from their use of our energy products. We accelerated our plans by including an energy transition condition in the performance conditions for the 2019 long-term incentive plan”Z

“We believe more renewable energy such as solar and wind is critical for a cleaner energy future, and that how people live, work and play is increasingly going to need to be powered by low-carbon electricity. But we expect that consumers will continue to use oil and gas for some time to come and not all economic activities can be easily, swiftly, or cost-effectively electrified. We see continuing, changing roles for oil and gas alongside renewable energy, hydrogen and new technologies”G

“We are growing our New Energies business with investments in low-carbon technologies, including biofuels, electric vehicle charging, and wind power. We are also developing complementary approaches like carbon capture and storage and nature-based solutions to manage the difficult-to-avoid emissions that will remain in the system for years to come due to continued consumer use of oil and gas”T

“We work with the Oil and Gas Climate Initiative (OGCI), a voluntary CEO-led group that focuses on carbon capture, utilisation and storage (CCUS), methane detection and reduction, as well as energy efficiency and also we are a founding member of the Energy Transitions Commission, which brings together leaders representing a wide range of sectors and interests. The commission aims to accelerate change towards low-carbon energy systems that enable robust economic development and limit the rise in global average temperature this century to well below 2°C above preindustrial levels”.....P

It is noticed that these downstream petroleum firms go to the extent of disclosing the processes through which they are reducing their carbon footprint which is a way of practicing sustainability. According to the GRI (2021), carbon emissions are the single largest cause of climate change in this area since the consumption of oil and gas products and the operations of the oil and gas sector account for a significant amount of the two main GHGs, carbon dioxide (CO₂) and methane (CH₄). So, according to the IEA (2020), the process of producing and distributing oil and gas is responsible for 15% of the global energy-related GHG emissions. Interaction with responses from respondents and confirmations from sustainability and annual reports established the fact that carbon emissions reduction through various rigorous approaches is still being achieved through the processes described above. Kwakwa and Alhassan (2018) in their research also established that the introduction of various committees for policies on Carbon footprints are greatly contributing to its reduction which is in line with statements from annual and sustainability reports of these downstream petroleum firms.

4.3.2.3 Spillage and Hydro Carbon control

Despite the advantages of using hydrocarbons, the negative effects are devastating: Numerous news stories with supporting anecdotal evidence have demonstrated the significant negative environmental effects of hydrocarbons, with oil spills having the most catastrophic effects on the environment, human populations, and other living things (Gin et al., 2005; Vethamony et al.,

2007). The Exxon Valdez (Graham, 2003), Prestige, and Amoco Cadiz accidents, among others, have highlighted the devastating repercussions of oil spills in the past. The incident on June 3rd in Ghana served as an illustration of such an impact by claiming numerous lives. Researchers have used a variety of techniques to address the range of negative effects, including the use of numerical models to simulate and forecast the fate and movement of oil spills (Vethamony et al., 2007; Fingas, 2012; Reed et al., 1999). Strategic strategies are developed in response to the findings from these simulations to implement prompt and effective emergency responses (Fingas, 2012). Here, respondents during an interview on how and measures they are putting in place to prevent spillages stated:

“Ok so first we identify oil storage locations and potential spill pathways, then we provide containment for containers of oil that could potentially spill into the environment and in the case of spillages we respond by using plenty of absorbents to absorb the spill”S1

“ok.....So what we do is that we ensure employees receive Spill Prevention, Control, and Countermeasure (SPCC) Plan training and also mentor new employees, we also ensure constant learning of our overall operational system like our firm's engineering layout, valves, shutoffs, and lastly we ensure the maintenance of equipment to prevent leaks and spills”Z1

“When it comes to operational activities which may lead to spillages, what we do is that actually we know and follow operational procedures in our facility, and visually inspect oil storage locations for container or tank condition and spills”T1

“One of the things we pay attention to is that we minimize working quantities especially with activities that involve a lot of fuel..... so here, we have a threshold of fuel we can deliver in a day and fuel we work with in a day and lastly also we make sure others follow appropriate delivery and handling procedures”P1

“We pay close attention to the direction, rate of flow, and total quantity of the oil that could be discharged with much focus on the rate at which an equipment may experience failure....and in the event of spillage we maintain a fully-provisioned, easily accessed spill kit coupled with effective training on how to deal with such situations”G1

For spillages and hydro-carbon control, the following are confirmations from the annual and sustainability reports of the downstream firms to what respondents stated during the interview.

“To reduce the number of operational spills, Shell Petroleum Development Company of Ghana is focused on implementing its ongoing work program to appraise, maintain and replace key sections of pipelines and flow lines. In 2019, SPDC completed 30 kilometers of new flow lines, bringing the total to around 1,330 kilometres over the last eight years”S

“We continue to implement operational improvements to shorten our response time and improve relations with communities. There were also ongoing commitments from government agencies to tackle spills”P

“Regardless of the cause, our spillage control department cleans up and remediates areas impacted by spills that come from its facilities. In the case of operational spills, the department also pays compensation to communities impacted by the spill. Once the clean-up and remediation are completed, the work is inspected, and, if satisfactory, approved and certified by Ghanaian government regulators”Z

“We are an active member of Oil Spill Response Ltd (OSRL), which is part of the Global Response Network, an organisation that shares effective responses to oil spills worldwide and because of this we are keen on our spillages”T

“Monitor and measure hydrocarbon spills and recovery by volume, source/activity (e.g. transportation, natural disaster, etc.) and location and regularly report investor-grade spills data, in line with best practice guidance and externally verify data”G

Here, sustainability practices through the control and prevention of oil and hydrocarbon spillages are noticed to be on course. Respondents describe how their firms operationalise their process of reducing spillages, which is also consistent with statements from their individual firms' annual and sustainability reports. These submissions are in line with EPA's provision which suggests ways of reducing spillages of hydrocarbons. They indicated the adoption of leak detection technologies, the establishment of industry-sponsored safety institutions, training, and worker safety programs, setting spill reduction targets, and other measures.

4.3.2.4 Environmental, Health and Safety (EHS) Management

People working in the petroleum industry are exposed to various risk factors. Hence continuous monitoring of their working conditions and well-being is essential. The insinuation of implementing an occupational Safety and Health Management System at all workplaces came into the limelight, when 'Global Strategy on Occupational Safety and Health (GSOSH): Conclusions were adopted by the 'International Labour Conference' at its 91st session, 2003. According to GSOSH (2014), the strategy advocates the application of a systems approach to the management of national OSH systems. Also, Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) provide a national/organizational framework for occupational Safety and Health Management Systems. As per these guidelines, the OSH management system should contain the main elements of policy, organizing, planning, implementation, evaluation, and action for improvement. In the Ghanaian petroleum industry, there have been calls on companies to awake on best practices involving sustainability of which the environment, health, and safety of its human resource is no exception, following the June 3rd

disaster in 2015 by Osei-Wusu and Boateng (2015). Respondents on how their firms are practicing EHS stated:

“As I stated earlier, we train our staff every two weeks and even we conduct some assessment exams for them to see how keen they are on protecting themselves and the environment within which they work”Z1

“We engage our staff in training, I mean practical trainings and sometimes invite the Ghana Fire Service to come and teach us how to go about some fire outbreaks and how to even use the safety kits. We ensure our staff undertake HSE courses as well to keep them on their toes around safety practices”S1

“Ok for us we have safety manuals in every department and we conduct emergency drills and safety inspections every week to ensure our staff are abreast with our safety practices. All these are aside the periodic trainings we have with our staff”P1

“When it comes to HSE, we have a general company policy regarding safety and health issues cos like I said earlier our staffs’ well-being is paramount to the companies success and because of that we conduct frequent trainings just so our staff will be well equipped in case there are unfortunate occurrences”G1

“For Our HSE practices, we have a general policy that guides our risky operations and the environment these operations go on, so we are really careful with our risky activities. We engage staff in trainings on fire, spillages and other risky ventures. Another thing is we usually conduct internal safety auditing to ensure best practices are being followed”T1

Annual reports from these downstream firms confirmed nearly of the responses from interviewees and are stated below:

“It is in our mandate to achieve zero harm for our employees and business partners through monitoring and measuring fatalities, injuries, incidents, work-related illnesses and absenteeism by role, business line and geography. Also we review, identify and where appropriate/material, address significant workforce health issues at local, regional and global level, in line with best practice guidance and lastly, assess current

Health Safety and Security, and wellness activity, programmes and procedures to integrate a culture of safety in order to scale up good practice”P

“We conduct regular externally verified audits on safety management systems and security risk assessments throughout the value chain and project life cycles, in line with international best practice: OSHA and IPIECA. We also train employees (including contractors and business partners) on HSS policies and expected behaviours”Z

“We embed internal and external best practice into the Code of Business Conduct, Health and Safety Policy, Security Policy, Safety Management System, Risk Register and Environment Policy”T

“We have set zero harm targets and regularly report investor-grade HSS data, in line with reporting best practice standards and UN SDGs (see principles 2 and 8); and externally verify data”S

“We train employees (including contractors and business partners) on emergency preparedness, response programs, cyber security, Health and Safety Policy, Security Policy and the Code of Business Conduct”G

Healthy and safe work conditions are recognized as a human right and addressed in authoritative intergovernmental instruments, including those of the International Labour Organization (ILO), the Organisation for Economic Cooperation and Development (OECD), and the World Health Organization (WHO). GRI (2021) postulates that healthy and safe work conditions are also a target of the Sustainable Development Goals, adopted by the United Nations (UN) as part of the 2030 Agenda for Sustainable Development. The GRI Occupational and Health and Safety (2018) states that a business must show commitment to the health and safety of its employees in order to prevent harm and promote health. Additionally, they mandate that an organisation involve workers in the creation, implementation, and performance assessment of a management system and programmes for occupational health and safety that are suitable for the organization's size and activity. This reflects the responses obtained from the interview and statements from annual

and sustainability reports, indicating this downstream petroleum firms' prudence in the practice of sustainability.

4.3.2.5 Water and waste responsibility

The exploitation of oil and gas reserves has not always been without some ecological side effects. Oil spills, damaged land, accidents and fires, and incidents of air and water pollution have all been recorded at various times and places. In recent times the social impact of operations, especially in remote communities, has also attracted attention. Water and waste management from extant literature indicates that much waste and water management is dealt with in the upstream and midstream sector rendering the downstream firms little issues to deal with around water and waste management. Respondents were able to articulate clearly how they manage their water and waste products in the course of their activities. They stated:

"We are very keen on our water usage and waste disposal. We recycle the ones we can and careful dispose off the harmful once. We believe in even preventing wastage in the first place. So here, we have adopted the practice of using less material in our fuel distributions, we also keep products for longer use and lastly we try to use less hazardous substances iwhen we are testing our fuel quality in our labs".....PI

"We try as much as possible to reduce waste by checking, clearing, repairing, refurbishing our items and tools we use in our operations and for our water usage we try our best to process water we use so we can reuse the water again, these happen at our fuel stations at the mining sites".....ZI

"We recycle most of our items we use, so our operations manager at the office also has as his role to inspect the items we use, whether they are in the right conditions and make ready any waste product available for recycling and like said earlier we reduce cost and achieve progress in our sustainability practices".....TI

"For us in the downstream, we don't really deal with much waste since we just distribute fuels to all parts of the country. We only make sure we treat our water so we can reuse them again so when you check our fuel storage facilities we have drainages that are linked to the main water reservoir but there are layers of sieves that the used water goes

through and some other substances we add to make the water reusable”.....G1

“We have place in mechanisms in our storage houses to help is regulate how we use water and reuse it, we also recycle our wastes to prevent wastage”.....S1

Some statements from annual reports confirming respondents’ responses from the interview are as follows:

“We are aiming for zero waste by increasing reuse and recycling in our business and supply chains”.....Z

“We are reducing waste from our operations and increasing recycling of plastics”.....S

“We ensure clarification of water usage accountability and monitor and measure freshwater withdrawal, consumption, and recycling by volume, source, and geography. We also monitor and measure waste creation and disposal by volume, waste type (i.e. hazardous waste), source, disposal method, and geography”.....T

“We review existing initiatives and performance against local waste infrastructure capacity – to identify opportunities to scale up good practice, invest in local waste infrastructure, and set reduction targets”.....P

“We have embedded internal and external best practice into Environmental Management System, Risk Register, Environment Policy and Future of Energy Strategy and also set waste reduction targets and regularly report investor-grade waste data, in line with reporting best practice standards and UN SDGs”.....G

According to GRI (2021), trash from oil and gas operations is frequently produced in large quantities, including hazardous waste. The greatest waste streams are those resulting from the extraction or processing of oil and gas, and they can include drilling muds and cuttings, scale, and sludge, which can themselves contain chemical additives, hydrocarbons, metals, naturally occurring radioactive material (NORM), and salts. These waste streams can harm plant and

animal life as well as human health by contaminating groundwater, surface water, and ocean with chemicals or heavy metals. The way a business manages its waste, the rules that apply, and the presence of facilities for recovery and disposal nearby can all have an impact. Actions, such as circularity measures, were included in the GRI's (2021) guidance forGRI's (2021) guidance for disclosure provided actions, including circularity measures, to prevent waste generation and to manage significant impacts from waste generated. This included improving materials selection and product design through consideration for longevity and durability, repairability, modularity and disassembly, and recyclability, reducing the use of raw and finite materials by procuring secondary materials (e.g., used or recycled input materials) or renewable materials, and substituting inputs that have hazardous characteristics with inputs that are nonhazardous. disclosure in order to prevent waste formation and mitigate severe impacts from waste generated. This involved enhancing the use of secondary materials (such as used or recycled input materials) or renewable materials, reducing the use of raw and finite materials, and replacing inputs with hazardous properties with inputs that are not hazardous. Other improvements to materials selection and product design included taking into account longevity and durability, repairability, modularity and disassembly, and recyclability. It is noticed here that responses from interviewees couples with annual and sustainability reports are consistent with the provisions of the GRI.

4.3.3 Reporting to regulatory bodies

Here, the researcher in the process of exploring how these downstream petroleum firms in Ghana operationalize their sustainability practices, identified the theme, “reporting to regulatory bodies” as the final stage of practicing their sustainable activities and reporting on them. They claimed they reported to the various regulatory bodies in Ghana, by following and executing their policy

documents provided to them through the annual and sustainability reports they publish. Some of these firms are not listed on the Ghana Stock Exchange (GSE) so they privately report their sustainability practices to the regulatory bodies as compliance with the regulations in the industry. Here, these respondents stated:

“We report to the NPA on our sustainability practices and annual report as well”T1

“We report to the NPA but because of our fuel farms at various mining sites, we are obliged to report to Min. Comm and EPA as well”Z1

“For us, we report to the NPA and EPA on our practices, we also have our sustainability reports and ESG reports online, yh.... We publish them every year so you are sure to find them online”P1

“We publish our sustainability reports in our annual reports annually and because we are listed it easy to come across it even online”G1

“We report our sustainability practices separately in the annual report and sustainability reports as well, making sure all standards are complied and adhered to”S1

4.4 Motivations for Sustainability practices

There are intrinsic and extrinsic motives, according to research on organisational and individual drivers of sustainability (DeSimone & Popoff, 2000; Dodds et al., 2013; Lozano, 2015; Ryan & Deci, 2000; Testa et al., 2016). Extrinsic motivation refers to engaging in an activity to "attain some separable outcome," according to Ryan and Deci (2000). Intrinsic motivation is defined as "the performance of an activity for its inherent satisfactions rather than for some separable consequence" (p. 56). (p. 60). According to DeSimone and Popoff (2000), intrinsic forces tend to be more pro-active while extrinsic forces are typically more reactive. Understanding both inner and extrinsic motives aids in explaining why people and organisations are driven to adopt or

practise sustainable behaviour. Here, respondents during the interview stated their individual firms' motivations for practicing sustainability. They stated:

“Ok so first we practice sustainability because of its importance to the company's growth and secondly, because our operations seem to have some effect on the environment and the society as well even our staff, as I indicated earlier so we must engage in sustainability so we reduce the stress on the environment within which we operate..... Also, we need to meet regulatory compliance so it is needful to practice sustainability so we can report on it”S1

“Ok for us our reputation precedes us so there is an inherent need for us to be sustainable and practice sustainability. Some of our activities are hostile to the environment I believe we should be ethical enough to reduce the effects of these hostilities by providing some amenities like hospitals and schools, clean water for the people around us. We don't practice because our peers do so, we practice it because we will have to report on it to the various stakeholders”T1

“First we practice sustainability because the regulatory bodies are keen on ensuring we achieve our part of SDGs as a nation and also we need to practice it....sustainability I mean, for the well being of our company, at least our staff and environment are a protected and cared for..... Ok there is also a need to practice because our peers practice it there is the need to do so because you will be lagging if you do not and here all stakeholders are watching you so I think it costs a thing if you practice it”P1

“We engage in sustainability not because of our peers because we even go a step further to stuff that is not prescribed by regulatory agencies.....like visiting our fuel stations to observe if our supervisory officers are ensuring best organizational practices, we even ask managers of those places if washrooms are kept untidy, and secondly we practice it because it has become sort of mandatory for us to do so so that we would be able to report on that.....but also we owe the society within which we operate several responsibilities because of our externalities.....so we do things like constructing better draining systems so that our spills don't flow into the environment and lastly it is required of us to send a report of our practices to the regulatory bodies as a measure of compliance.....we have a reputation to maintain so we have to do whatever that is required of us”Z1

“Our reasons for practicing sustainability are numerous. First, we are a state-owned firm so in no way would we risk our reputation, out stakeholders demand we do what is required of us, not just the regulatory agencies but all other stakeholders, we can't afford

to be ignorant. We sometimes engage in sustainability practices to obtain external funds for projects as well, and we deem it morally right to give back to the society within which we operate, so we undertake projects to make up for the harm caused to them through our activities”G1

These responses reflected the elements of the institutional theory discussed in the literature review. Here, it is noticed that the motivations for these downstream firms engaging in sustainability practices emanated from several factors which include stakeholder pressures, industrial competition or peers, and good image or reputation. Most of the motivations according to the data obtained indicates that stakeholder pressure was paramount to firms practicing sustainability. Considering the data above, all the respondents made mention of going by regulatory standards and industry best practices and also reporting to these regulatory agencies. Other stakeholders such as management and employees are also a core influence of sustainability practices in their firms. This reflects the coercive isomorphism element of the institutional theory which explains pressures on organizations from other superior organisations (Dimaggio & Powell, 1983) and also from society to conform to certain industry and organizational best practices. The second paramount factor for motivating these downstream petroleum firms to practice sustainability is good image and reputation which comes from being socially and morally ethical. These firms believe that their sustainability practices as a result of being ethical, and exhibiting good social and moral values through the amenities they provide in the societies they operate yields them a good reputation. They believe some investors focus much on how they reduce the externalities in their activities as well, hence the need for sustainability practices. This factor reflects the normative isomorphism of the institutional theory. This theory explains the reasoning behind an organization engaging in good practices because of its objective of ensuring good social and moral values in the industry and society as a whole. The last factor

influencing the motivation of sustainability practices among these downstream petroleum firms realized after interaction with data is industrial peer influence. Here, some of the respondents indicated their practice of sustainability was driven by the force of their peers engaging in sustainability practices. Some respondents further postulated that, they do not need regulators or peer influence to make them engage in sustainability, and that they go a step to do other sustainable activities that their peers in the industry do not do, and here the researcher labels it as “Pro-Mimetic Approach” to engaging in sustainability practices. This last motivating factor reflects the mimetic isomorphism which explains individuals or organisations engaging in an activity because their peers are doing so.



CHAPTER FIVE

CONCLUSION

5.0 Introduction

The study's last chapter is represented by this part. In this chapter, the research is summarised, and the main findings are discussed. The chapter also summarises the study's main contributions, its shortcomings, and suggestions for further research.

5.1 Summary of the study

This study sort to explore the sustainability practices in the Ghanaian petroleum sector, with a focus on the downstream companies. The researcher engaged in an extant literature review to be abreast with all current issues around the topic under study. The study adopted the qualitative research approach thereby, conducting semi-structured interviews to obtain data. The study also adopted the thematic approach to analyse the data. The data obtained were analysed and the findings are discussed in the subsequent paragraph.

5.2 Discussion of key findings

The findings of the study centered around the focus areas of downstream firms and how these firms operationalise those areas to ensure best sustainability practices, and why they practice sustainability the way they do.

Regarding the first objective of core issues driving sustainability practices in the downstream petroleum firms, five focus areas were identified to be common across these firms - transportation and safe fuel deliveries, carbon emissions reductions, spillages of hydrocarbons, health and safety management, and water and waste responsibility. It was found that these focus areas, with regards to downstream petroleum firms in Ghana, are paramount channels through

which sustainability is practiced. The reasons for these identified focus areas were consistent with statements made by their directors in their respective annual and sustainability reports.

These focus areas, in as much as are common across firms in the downstream sector in Ghana was found to be different among companies in the mid and upstream petroleum sector (Parmenter 2015; Šimková et al. 2015; Patty, 2018; Livohi, 2012). This inconsistency in focus areas across the various sectors of the petroleum sector is attributed to the nature and roles or operational activities of each of the sectors play. Activities like carbon footprints and hydro-carbon spillage were common across the sectors. These focus areas were identified to be necessary channels through which downstream firms could practice sustainability as expected of them.

Regarding the second objective which sort to explore how sustainability is practiced in the downstream petroleum sector in Ghana. Here, the first finding was that these downstream firms initially identify KPIs which enable them to draw out the core issues that will drive their sustainability practices. It was found that these KPIs for addressing sustainability practices are adopted from requirements from regulatory bodies. These firms indicated that their ability to structure KPIs was obtained from provisions and standards of the regulatory agencies, as they would be much focused and align their sustainability practices to the industry's best practices. The second finding with regards to the second objective of the study was that, across all the firms' understudy, in as much as each firm had a way of operationalizing their sustainability practices, they were guided by regulatory agencies and other internationally suggested mechanisms of engaging in some activities, such as waste disposal and recycling and carbon emission threshold. The third finding and last finding for the second objective of the study was the channel through which these firms reported their sustainability practices. Here, not all the

firms under study are listed so the manner of reporting was different across firms. The listed firms reported on their sustainability practices through their annual reports and some also at the same time had sustainability reports. Some listed firms also report separately in their sustainability reports. The unlisted firms reported directly to the regulatory bodies because they do not publish their annual reports and sustainability reports and are sometimes based on request.

Lastly, two findings were established concerning the third objective which sort to explain why they practice sustainability reporting in the manner which they do currently. First, it was found that these firms practiced sustainability because it is required of them to do so by interested stakeholders such as regulatory bodies who are state (government actors), investors, international organizations such as OPEC, UN, and others. Sustainability practices by these downstream petroleum firms are not a result of negative pressure from stakeholders but rather a need to be accountable for their practices to interested stakeholders which is a necessary demand. This motivation for sustainability practices was identified to reflect the coercive isomorphism element of the institutional theory which explains the notion that individuals or organisations engage in an activity because they are pressured by external forces to do so. It was also found that firms practiced sustainability because they felt aside from being coerced to do so, it was morally and ethically right to reduce the externalities caused on the environment through their operational activities. This motivation for practicing sustainability reflected the normative isomorphism aspect of the institutional theory adopted for the study. Lastly, there was a reflection of the mimetic isomorphism as these firms indicated that every firm in the industry, and not just the downstream sector, practices sustainability. Here, the term “pro-mimetic” was coined as some firms went beyond their normal activities to do other stuff that also contributed to effective and successful sustainability practices.

The study has clearly shown the current state of sustainability practices in the downstream petroleum sector in Ghana. Here, all downstream firms engaged in this study exhibited a reasonable amount of knowledge in their practice of sustainability and seem to contribute to the attainment of the SDGs. There is also an exhibition of concern for the environment as firms articulately explained mechanisms for practicing sustainability.

The findings show that the environmental sustainability practices of downstream petroleum companies are determined by regulatory compliance and corporate environmental responsibility based on perceived ethical obligation.

Sustainability practices in the downstream petroleum sector of Ghana are also undertaken by these firms to boost investors' confidence and for grants, they may receive.

5.3 Contributions

The study contributes to policy by providing policymakers with the needed information for them to come up with effective policies and amendments which would foster and encourage these downstream firms to effectively report on sustainability practices.

The study added to the literature on sustainable practices by looking at how enterprises in lower Ghana adopt and report on sustainability. This is a result of Gillet-Monjarret and Rivière-Giordano (2017)'s assertion that the true motive for corporations to do continual reporting from their perspective is unknown.

The findings of this study will be used to urge other businesses to form stakeholder panels in order to ensure that effective sustainability policies are implemented. Stakeholder panels give confidence by assessing business sustainability reports and assisting in the management of complicated environmental and social challenges, according to Chhabara (2009).

5.4 Recommendations

Although some companies in Ghana practice sustainability in one form or another, the country's sustainability practices are still low, particularly in the petroleum sector. As a result, regulatory bodies should ensure that sustainability reports are submitted on a regular basis to keep downstream petroleum companies on their toes in terms of sustainability. The practice of sustainability should be made mandatory, with an impartial agency overseeing it. Firms who do not adhere to the sustainability practice should be fined heavily as a deterrent to other businesses. Environmentally sensitive enterprises in Ghana, particularly those in the petroleum sector, should make their sustainability reports widely available to their wide range of stakeholders, whether they are publicly traded or not.

5.5 Limitations

The study explores sustainability practices in the petroleum industry of Ghana with much focus on the downstream sector. The study focused on a few firms in the downstream petroleum sector of Ghana thus findings from the study will be difficult to extend to the general population of firms in the downstream petroleum sector of Ghana or other parts of the world.

5.6 Suggestion for future research

Future research should take interest in exploring how sustainability reporting enhances the general performance of firms in both the oil and gas and mining sectors for a comparative study. The research adopted the institutional and legitimacy theories in achieving the object of their study. Thus, there is a need for future research to consider alternative theoretical perspectives that can provide a new and revealing insight into the phenomenon.

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APPENDIX

INTERVIEW GUIDE

Research Title

Research Purpose

Informed Consent

Section A – Demographic Profile

1. What is your job title?
2. What is your main job responsibility?
3. How long have you been with the firm?
4. Have you taken any professional course on sustainability reporting?
5. If yes, what professional course did you take?
6. Has the firm ever trained you on sustainability reporting?
7. If yes to 6, how frequent are the sustainability reporting trainings?
8. Who trains you on sustainability reporting?

Section B – How the Firm Operationalises Sustainability Reporting

1. What is sustainability reporting?
2. Does your firm report on sustainability?
3. How does your firm report on sustainability?
4. What are the sustainability areas on which your firm reports?
5. Who is in charge of reporting on sustainability?
6. Which department(s) in the firm collates inputs for reporting on sustainability?
7. What inputs are collated for reporting on sustainability?
8. Against what key performance indicators are the inputs measured?
9. Why are those key performance indicators chosen by your firm?
10. What channels does the firm use in reporting on sustainability?
11. Who are the key stakeholders of sustainability reporting in your firm?

Section C – Reasons for Sustainability Reporting

1. What are the challenges your firm faces with reporting on sustainability?

2. Which of the challenges in 1 is the most prominent, and why?
3. What are the benefits your firm derives from reporting on sustainability?
4. Which of the benefits in 3 is the most prominent, and why?
5. What are the reasons why your firm reports on sustainability?
6. Which of the reasons is the most important to the firm?
7. Why is the reason in 2 the most important to the firm?
8. Is there any Ghanaian regulatory requirement for sustainability reporting?
9. If yes to 4, which Ghanaian institution mandates reporting on sustainability?

Section D – How Sustainability Reporting Influences Firm Performance

1. Does sustainability reporting influence the operational performance of your firm?
2. If yes to 1, how does sustainability reporting influence the operational performance of your firm?
3. Does sustainability reporting influence financial performance of your firm?
4. If yes to 3, how does sustainability reporting influence the financial performance of your firm?
5. Does sustainability reporting influence how your firm relates with the environment?
6. If yes to 5, how does sustainability reporting influence how your firm relates to the environment?

