The Role of Focal Companies in Driving Sustainability Performance in the Oil and Gas Sector: the case of Oman

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Abstract

Sustainability and sustainable supply chain management (SSCM) has received increased attention from both practitioners and academia in recent years emerging in highlighting the significance of the sustainability practices across industries to sustain its licence to operate. Another transformative force on the sustainability agenda is the growing authority of regulators, institutions and advocates for a more sustainable corporate behaviour. However, there is deficient knowledge about the adaptations of the sustainability practices, especially in developing economies and the role of focal companies in driving the sustainable performance agenda.

This thesis prolongs our knowledge by exploring and theorising the adaptation of the sustainability agenda and uses the literature to construct a conceptual framework through which empirically investigate what the pressures and barriers are and how focal companies in the oil and gas companies respond to institutional and stakeholders' pressures. The adopted internal strategies to mitigate such pressure were examined in a developing economy context as previous sustainability and supply chain management literature has mostly focused on the developed world and assumed transferable finding to emerging economies regardless of its context which warrants scholarly attention.

The thesis is embedded in the interpretive paradigm and followed a qualitative approach using in-depth semi-structured interviews with executives, managers and practitioners working within the oil and gas industry of Oman. The study revealed an interplay between the institutional stakeholders' pressure, externally and internally, and the strategies adopted by focal companies to manage a sustainable performance within companies and across supply chain and communities. It provides the literature with additional insights into the role of institutions, standards and stakeholders to incorporate sustainability practices.

The research findings render valuable insights for managers in the extractive industry or any other industries operating in developing economies seeking to adopt sustainability practices and provide policy insights for professional organisations, regulators, and legislators to promote sustainability further. The overall research proposes theoretical, methodical as well as the practical contribution of the sustainability performance phenomenon within the understudied context of Oman which produced a new insight at the intersection of sustainability and performance in supply chain management.

Dedication

This doctoral research is dedicated to the country of Oman, its people and in the memory of my beloved late parents, who raised us all to love, respect, and believe in our little contribution to make the world a better place to live. My wife, children, extended family and friends for their endless support throughout the study journey.

Table of Contents

APPENDICES

LIST OF TABELS

LIST OF FIGURES

DECLARATION OF AUTHORSHIP

I, Amor N Almataani declare that this research, its idea, analysis, findings and conclusions that are included in this PhD thesis are entirely developed by me for the purpose of this program only and have not been submitted for another qualification. Some of the material contained herein has been published in the following conference papers:

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Signed: Amor N. AL-MATAANI
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ABBREVIATIONS

CEO Chief Executive Officer

CSP Corporate Social Performance

CSR Corporate Social Responsibility

DEFZ Duqm Economic Free Zone

EMS Environmental Management Systems

EMAS European Eco-Management and Audit Scheme

EOI Export-Oriented Industrialisation

E&P Exploration and Production

EPR Environmental Performance Ranking

EU European Union

FDI Foreign Direct Investment

FE Foreign Entrepreneurs

GCC Gulf Cooperation Council

GDP Gross Domestic Product

GHG Green House Gas

GPI Growth Promise Indicator

GPI Global Peace Indicator

GRI Global Reporting Initiative

GSCM Green Supply Chain Management

GVA Gross value added

GVC Global Value Chain

HDI Human Development Index

HEI Higher Education Institution

HPI Human Poverty Index

ICT Information and Communications Technology

ICV In-Country Value

IDB Industrial Development Board

IDR Industrial Development Report

IEA International Energy Agency

ILO International Labour Organization

IMF International Monitory Fund

IP Industrial Policy

IPAs Investment Promotion Agencies

ISIC International Standard Industrial Classification

ISO International Standards Organisation

LCA Life Cycle Assessment

LDCs Least Developed Countries

MDG Millennium Development Goals

MENA Middle East and North Africa

MOG Ministry of Oil and Gas

MSM Muscat Security Market

NCIS National Centre for Information and Statistics

OCGS Oman Centre for Governance and Sustainability

O&G Oil and Gas

OECD Organization for Economic Co-operation and Development

OLNG Oman Liquified Natural Gas

OMIFCO Oman Indian Fertiliser Company

OMR Omani Riyal

OPAL Oman Petroleum Alliance

OPEC Organisation of the Petroleum Exporting Countries

ORPIC Oman Refinery Petroleum Company

Oxy Occidental Oman

PDO Petroleum Development Oman

PwC Price Waterhouse Coopers

R&D Research and development

SCM Supply Chain Management

SD Sustainable Development

SDG Sustainable Development Goals

SEZ Special Economic Zones

SMEs Small- and Medium-sized Enterprises

SOE State-Owned Enterprise

SR Sustainability Reporting

SSCM Sustainable Supply Chain Management

TBY The Business Year

VNR Voluntary National Report

UAE United Arab Emirates

UN United Nation

UNDP United Nation Development Program

UNEP United Nations Environment Programme

UNESCO United Nation Education, Science, Culture Organisation

UNIDO United Nations Industrial Development Organisation

UNF United Nations Children's Fund

UNSO UN Statistical Office

USD United State Dollar

WCED World Commission on Economic Development

WDR World Development Report

WTO World Trade Organisation

WHO World Health Organisation

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

This doctoral study aims to examine the role of focal companies in driving supply chain sustainability performance in the oil and gas industry in an emerging economy such as in the Sultanate of Oman. The opening chapter's goal is to present the reader with an overview of the thesis and the body of research. The chapter is structured in eight sections, including this introduction. Section 1.2 aims to present an overall background of the research commenced. Section 1.3 gives a context to the research and 1.4 manifests the research's problem and highlights the research's gap. Section 1.5 highlights research aim, objectives and research Questions. Section 1.6 asserts the methodology of the research. Section 1.7 provides an overview of the thesis structure. Lastly, section 1.8 concludes this chapter.

1.2 BACKGROUND AND MOTIVATION

Sustainability or sustainable development is widely considered term in almost all business or society and gained an increasing global attention in recent decade (Silvestre, 2015b; Rajeev *et al.*, 2017; Lein, 2018), e.g. sustainability by local government (Sueyoshi and Goto, 2014), sustainability in supply chain (Müller and Seuring, 2008; Pagell and Wu, 2009; Carter and Easton, 2011), sustainable cities (Weisenfeld and Hauerwaas, 2018), sustainable tourism (Tao and Wall, 2009; Moyle *et al.*, 2014; Ruhanen *et al.*, 2015), sustainable livelihood and livelihood resilience (Oberlack *et al.*, 2016), sustainable supply chain in Oil and Gas industry (Wilson and Kuszewski, 2011; Sueyoshi and Wang, 2014; Silvestre, 2015b; Wan Ahmad *et al.*, 2016; Silvestre *et al.*, 2017) and many more. The concept of sustainable development couples the notion of sustainability with the thought of development and was initially defined as an issue of intergenerational equity in the Brundtland's report, designated 'Our Common Future' then embraced by United Nations World Commission on Economic Development. It is defined as "development that meets the needs of the present with-out compromising the ability of future generations to meet their own needs"(Chardine-Baumann and Botta-Genoulaz, 2014:138).

This definition evolved to be the basis for the current as well as future research in the field of sustainability (Saeed et al. 2017). Many authors have recognised sustainable development as a process to achieve sustainability (Biswas et al. 2001; Brockhaus et al. 2013; Orazalin and Mahmood, 2018; Orazalin, Mahmood and Narbaev, 2019) while others have recognised sustainability as an environmental dimension of sustainable development (Zhu et al. 2013). However, many authors have disputed and attempted to disregard the difference between sustainable development and sustainability (Mihelcic *et al.*, 2008; Carter and Easton, 2011; Ahi and Searcy, 2013) and loss (single bottom line) (Kleindorfer et al. 2009) and introduced the concept "triple bottom line" (TBL) which include environmental and social dimensions of sustainability (Elkington, 1998:19).

Investment decision-making based on perspectives of sustainability is also growing importance among businesses around the globe (Rajeev *et al.*, 2017). Stiglitz *et al.*, (2017) in a report by the commission on the measurement of economic performance and social progress, debated whether the differentiating between an assessment of current well-being

and an assessment of sustainability can persist over time. They further add the sustainability levels of well-being will always depend on whether stocks of capital that matter for our lives natural, physical, human and social are passed on to future generations (Gerber, 1997; Stiglitz, 2017).

Sustainability is also growing to be one of the most critical performance measurements in the rapid-changing business environment, as climate change and customers' satisfaction are maturing to real concerns that leaders must handle. Not only does it reveal the impact the company has on the economy, environment and society but also communicate corporate responsibility and active business practices to the relevant stakeholders. However, organisations are deemed responsible for their own as well as their supply chain associates' activities (Pagell and Wu, 2009). To reach the sustainability over the whole supply chain, the importance of integration and collaboration for achieving social and environmental matters (Caniato *et al.*, 2012) at each level in the supply chain has grown to encompass supply chain members (Raut, Narkhede and Gardas, 2017a). Sustainability research on supply chain management has gained limited attention, especially in developing economies and even more scarce in the oil and gas industry despite its current challenges (Silvestre, 2015b; Orazalin, Mahmood and Narbaev, 2019). Nevertheless, acknowledging the physically disbursed enterprise environment, supply chain management is vital for organisational competitiveness (Ageron, Gunasekaran and Spalanzani, 2012).

Contributing to sustainable development has increasingly become strategic goals for business and government (Escrig-Olmedo *et al.*, 2018), and the sustainable supply chain management (SSCM) is making a significant literature growth and acquiring the attention of academia, practitioners and policymakers (Varsei *et al.*, 2014; Dubey *et al.*, 2017). Global warming and the finiteness of primary resources have brought the sustainability agenda forward and caused many stakeholder groups to adjust their expectations on firms which resulted in driving the sustainability challenge to become a core item on the leadership agenda of all companies (Schrettle *et al.*, 2014; Amui *et al.*, 2017). Roscoe, Cousins and Lamming, (2016) add that sustainability should not be an addition to firms' general business practice but rooted in the way organisation conduct its business. It is meeting the obligations of a firm's stakeholders (direct and indirect) without compromising its capacity to satisfy the needs of future stakeholders (Dyllick and Hockerts, 2002:131).

The term SSCM incorporates the sustainability view to the supply chain management (SCM) definition and addressed in literature as ethical or responsible SCM (Ferrell *et al.*, 2013), green supply chain management (GSCM), corporate social responsibility (CSR), etc.(Harms et al. 2013; Varsei *et al.*, 2014; Broman and Robèrt, 2015; França *et al.*, 2017). Several literature reviews on SSCM have been published in recent years (Carter and Rogers, 2008; Müller and Seuring, 2008; Ahi and Searcy, 2013; Seuring, 2013; Touboulic and Walker, 2015; Köksal *et al.*, 2017; Saeed, Waseek and Kersten, 2017; Gahana *et al.*, 2018). SSCM is described as "the strategic, transparent integration and achievement of an organisation's social, environmental, and economic goals in the systemic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual organisation and its supply chains" (Carter and Rogers, 2008:368). Touboulic and Walker, (2015) consider the requirement for inter-organisational coordination with a superior focus on long-term economic performance. Pagell and Wu, (2009), add sustainable supply chain does not harm the environment and society. Besides, non-economic dimensions (environmental and social) must complement the economic dimension and vice versa (Stiglitz

et al., 2017). However, despite the recognition of SSCM, sustainability research on supply management has received limited attention (Ageron, Gunasekaran and Spalanzani, 2012; Agi and Nishant, 2017; Childe *et al.*, 2017; Centobelli, Cerchione and Esposito, 2018)

Accomplishing sustainability requires organisations to redesign their contemporary supply chains to incorporate sustainability goals into their operations from purchasing till distribution (Hahn and Scheermesser, 2006). The goals of SSCM is to produce the highest value to all stakeholders and to satisfy customer requirements by performing sustainable flows of products, services, information, and capital as well as allowing the cooperation among supply chain participants (Saeed, Waseek and Kersten, 2017). The imperative need for moving from unsustainable production and societal patterns to sustainable ones is driving embodiment of environmental and social responsibility issues into the management of supply chains hence growing relevant to the success of organisations and their supply chains (Almeida *et al.*, 2017). Organisations are deemed accountable for their activities that harm the environment, society, and economy of their owned businesses, as well as those of their supply chain partners (Hsu *et al.*, 2013). Consequently, sustainability within focal firms operations and their supply chain, has grown a contemporary concern and an essential area of research (Saeed, Waseek and Kersten, 2017). The choosing of sustainability practices not only increases the environmental and social performance of focal firms and their supply chains, but also presents an opportunity for focal firms to obtain a new set of competencies, which can assist them to gain a competitive advantage by engaging in sustainability initiatives within and outside of the firms boundaries (Müller and Seuring, 2008).

The oil and gas industry are the global economy backbone but also known for destroying habitats, polluting the environment, and adversely influencing the livelihood of communities residing near operation sites (Boohene and Peprah, 2011; Thurner and Proskuryakova, 2014; Ferns, Amaeshi and Lambert, 2017). The increasing awareness concerning petroleum as a non-renewable source of energy as well as the interruption of operations has led to a growing interest in sustainability issues. Today firms also, face increased pressure from diverse stakeholders to generate profits, justify their operations and satisfy the needs and expectations of society (Fuisz-kehrbach, 2015; Orazalin and Mahmood, 2018; Orazalin, Mahmood and Narbaev, 2019). The business nature and products of oil and gas companies drive more demanding scrutiny from diverse stakeholders concerning various aspects of their economic, environmental and social performance (Wan Ahmad *et al.*, 2016; Orazalin, Mahmood and Narbaev, 2019).

The oil and gas industry are addressing the issue of habitat loss by following practices such as using technology to reduce the primary effects associated with oil and gas development, using inclined drilling from a central pad to decrease the footprint of the facility. However, according to Tammela, Canen and Paganelli, (2016) oil and gas drilling activities has very serious consequences for the community and wildlands. A seismic survey in the oil and gas industry is considered a cause of deforestation, especially in constructing pipeline right of way, commercial fish species are sensitive to sound and larval fish are endangered and killed by seismic sources; hence managing it properly and sustainably is a way of reducing deforestation (Egyir, 2012). Restricting human use of new areas through control on access and developing best practices and tools with other stakeholders is among initiatives the industry conducts in the mitigating cause of harm. The united nation environment protection (UNEP) established the oil industry international exploration production forum (E&P) in 1974 and its Industry and Environment office in 1975 to bring the industry and governments together to further promote a sound industrial development (UNEP IE). Despite the effort by

the UN agencies to reduce emission to comply with the Kyoto protocol and recent Paris climate accord in 2015 and the agreement of 200 countries to take step to keep global warming to below 2 degrees Celsius from pre-industrial level, the emission level is rising in developing economies (Sachs, Maennling and Toledano, 2017).

A sustainable organisation contributes to sustainable development by providing economic or financial, social, and environmental benefits (Norman and Macdonald, 2004). Increasing global concerns about environmental issues such as climatic change, pollution and biodiversity loss and social issues related to poverty, health, working circumstances, safety and inequity, have encouraged industry inclination towards sustainability (Raut, Narkhede and Gardas, 2017b). However, not many industries had been pressured to progress corporate social responsibility (CSR) policies and standards like oil and gas which resulted in companies creating of non-governmental organisations and branches of the oil and gas firms focused on CSR (Berkowitz, Bucheli and Dumez, 2017). Nevertheless, given the inherent complex characteristics of oil and gas industry, its global stretch, and the fact that its operations influence and affect a wide variety of stakeholders, CSR issues cannot be defined and executed exclusively at the industry or firm levels, but demand the cooperation of other actors touched directly or indirectly by oil and gas activities including supply chain members (Kirat, 2015).

This recognition indicates supply chains is crucial in the highly competitive global business environment, and well- managed supply chains provide operational and strategic advantages (Silvestre, 2015b). However, empirical research in supply chain has been predominantly performed in the developed countries like Europe and America and only 6 per cent of the researches are performed in the developing countries consequently it is necessary to study the dominant supply chain practices employed by industries in these developing countries (Golicic and Smith, 2013; Gorane and Kant, 2015; Tukamuhabwa *et al.*, 2015). Agi and Nishant, (2017) further elaborated the green SCM, closed loop SCs and reverse logistics in particular have received much attention lately due to the environmental concern and urged future study to include the effect of these practices on the organizational performance. Also, Gorane and Kant, (2015), further established that a notable percentage of articles contribute towards the impact of supply chain practices on organisational performance, but bulk of authors applied performance examination within the boundary of organisations. From the literature review, it is evident that the environmental side has been researched more regularly so far; hence most contributions are rendered towards carbon-based emissions. Therefore, the link into the social dimension impacts and its integration of sustainability is not widely developed (Seuring, 2013; Yawar and Seuring, 2017).

Although research on supply chain management has made many valuable contributions, there is a dearth of empirical evidence and theoretical reflection on the characteristics of supply chains of oil and gas that operate mainly in developing and emerging economies (Silvestre, 2015b). In a case study of the upstream oil and gas industry supply chain in Brazil, developing country, Silvestre, (2015a) concluded that supply chain sustainability is not a destination but a journey and evolve with organisations' growth, natural resource-based supply chains are often more geographically bounded and susceptible to local social demands than other supply chains. They added that due to existence of highly turbulent business environments and institutional voids supply chain faces even greater barrier to grow and focal companies play an even more important role in managing the escalating ambiguity,

stimulating supply chain learning, and promoting innovation towards supply chains enhanced sustainability performance.

Furthermore, the fluctuation of oil price and decreased profits margins as well as pressure for the energy transition have made some focal oil and gas companies to shift investments towards better returns. Investment in cleaner ways of using fossil fuels and biofuel technologies are among those chosen but are arguably less green although some might argue such investment might have the potential of stimulating the agroindustry and enhance energy security (Rashedul *et al.*, 2017; Bell *et al.*, 2018). The shift resulted in drastically decreasing corporates investment in high capital renewable energy such as wind and solar energy (Nemet and Kammen, 2007; Masini and Menichetti, 2012) weak sustainability position that under stresses environmental values and social justice, while overemphasising management of materials and energy (Wijethilake, Munir and Appuhami, 2018). However, because of human dependency on Oil and Gas despite its non-renewable nature, leads to the oil industry's sustained existence, any attempt to overcome the adverse impact of such a destructive industry, however insignificant, should not be undermined (Ferns, Amaeshi and Lambert, 2017). Recently the G20 ministerial meeting on energy transition and global environment for sustainable growth affirmed the global commitment to the energy transition. Their joint ministerial communique' states: "*We recognize the importance of leading energy transitions to urgently address key and complex global issues and challenges such as energy security, climate change, resource efficiency, sustainable consumption, production and energy access"*(G20 Japan, 2019:1).

However, the ministers responsible for energy of the international energy agency (IEA) member states, met in Paris on 5-6 December 2019 and issued a communiqué acknowledging the challenge to the energy transition and stated: "*We view energy transitions as crucial for a secure, affordable and sustainable energy future. We acknowledge that gaps remain between stated national ambitions and real-world trends and look to the IEA to play a central role in providing policy-relevant analysis to help countries build sustainable energy systems*" (IEA, 2019:1).

There is currently a broad gap between companies' aspirations and meaningful actions encompassing sustainability performance and SDG in general. CSR Europe asserts that 72% of EU corporations concentrate on sustainability from a strategic perspective, but just 35% engage in meaningful activities (CSR Europe, 2016:10). Therefore, embracing sustainability by companies should be further encouraged, given the wide-ranging impact of the industry and the current gap to more sustainable future. Many stakeholders are in support of this approach as seen from increasing regulatory pressures and the promotion of voluntary sustainability reporting by non-governmental organisations. This is clearly seen from the evolvement of sustainability guidelines which include areas such as climate change, biodiversity, oil spill preparedness, water, health and social responsibility. Organisations like the global oil and gas industry association for environmental and social issues (IPIECA), the American Petroleum Industry (API) and the International Association of Oil and Gas Producers (OGP) have all published versions of their 'Oil and gas industry guidance on voluntary sustainability reporting' while the Global Reporting Initiative (GRI) organisation added an Oil and Gas Sector Supplement in February 2012. The private and public regulation can interact in many ways and can complement and substitute depending on the industrial context (Locke, Rissing and Pal, 2013). Also, scholars suggest that a mixture of public and private regulation is necessary to enforce environmental and labour standard within global supply chains (Trubek and Trubek, 2005; Bartley, 2011; Mayer, 2017). The private

regulatory initiatives normally build upon existing laws and respond to pressure from the state and other non-governmental actors (Bartley, 2011; Locke, Rissing and Pal, 2013). Therefore, as sustainability entails the fusion of economic, social and environmental goals, planning, strategizing, the measurement, management and control of sustainability performance profess a significant challenge. The Oil and Gas companies are faced with the responsibility of performing sustainability and reporting sustainability-related information within companies and among supply chain members responsibly, while at the same time consolidating sustainability results in their business decision making. The industry needs to create a balance between creating economic wealth to all stakeholders without causing harm to the environment and social inequality. The industry sustainability policies, strategies and practices must be aligned to a common agenda towards the betterment of human and the environment. Also, the oil and gas companies marketing campaigns and corporate reporting have to be more transparent and less greenwashing (George, *et al.*, 2016).

Although the oil and gas industry importance and contribution are well appreciated, its presence in sustainable operations and SCM literature is rather scarce (Yahaya, *et al.*, 2013a; Silvestre, 2015b; George, *et al.*, 2016; Orazalin, Mahmood and Narbaev, 2019). Also, Oman oil-dependent country strives to progress sustainability agenda beyond the oil and gas era are taking notice locally and overseas. However, there is a lack of knowledge of the sustainability matters and challenges confronting the country and the industry in its supply chain activities, or the SSCM strategy that nation or the industry can adopt according to its operating context. Prior studies have emphasised the importance of sustainability to economic, social and environmental performance to companies' success, yet there is a lack of clarity about how sustainability could be managed effectively and leveraged for business advantage. Moreover, little empirical research has been directed toward a thorough examination and analysis of critical factors that impact sustainability practices success. Against this backdrop, the aim of this PhD thesis is designed to examine the role of focal companies in driving supply chain sustainability performance in the oil and gas industry in an emerging economy and by incorporating the viewpoints of multiple stakeholders. Therefore, the next section will set the scene for the oil and gas context of Oman and its sustainability strive.

1.3 RESEARCH CONTEXT

The Sultanate of Oman (hereafter, Oman) is situated at the corner of the Arabian Peninsula, flanked by Yemen, Saudi Arabia, and the UAE and stretches on the Gulf of Oman and the Arabian Sea and has a coastline reaches 30000 km (Al-Ismaily and Kurian, 2007). Oman is Middle-income country, and a monarchy with a population of approximately 4.8 million in which about 45% of the population are expatriates (UN, 2019). Sultan Qaboos has transformed Oman from a feudal-like nation of living farmers and fishers with a total of six kilometres of the paved road into a nation with modern infrastructure and continuing economic and social investments (Export.gov, 2018).

Over the past few decades, Oman is undergoing rapid economic growth associated with the thriving and advancement of oil production. The economy is based primarily on hydrocarbon sources; hence, the oil and gas sector and its contribution to sustainability in Oman are taking a leading role through a diverse drive-in activity such as employment, corporate social responsibility (CSR), lean and the in-country value (ICV). As a response, many sectors have seen rapid growth as the central beneficiary with the blooming of many new infrastructure projects that help the rapid urban development (Al Shueile, 2015). The industry also, operates

a diverse supply chain network and industrial clusters in both upstream and downstream locations with transportation systems resulting in a vast and growing carbon footprint (IPIECA, 2017). The industry rolled out in 2013 a blueprint strategy generating opportunities that includes economic, social and environmental in ICV worth more than $64bn from 2013 to 2020 (Bhatnagar, 2014). The additional ICV opportunity of $64bn includes enhancement and expansion of the oil and gas companies' direct sourcing and employment of Omanis; localisation of contractors and suppliers sourcing (goods and services) and development of contractors and suppliers' work force. The strategy is aimed at utilising the ICV opportunity progressively through a collaborative and coordinated ICV development programme broken down into specific initiatives involving the contribution of all relevant stakeholders. The ministry in charge of the petroleum industry announced recently that the O&G is participating in the national drive towards economic diversification and sustainability (Oman Daily Observer, 2019).

The role of Oman petroleum alliance (OPAL) as the first non-governmental organisation (NGO) and an industry forum society for Oman's petroleum industry has also led a strive for enhancing sustainability practices through health, safety and environment policies and upgrading the industry social and environmental code of conducts (OPAL, 2019). In line with the booming awareness of sustainable development, many proactive actions from the government and professional bodies attempt to introduce the sustainability concept to many industries. The sustainability in Oman through the new vision "Oman 2040" and the role of Oman centre for governance and sustainability (OCGS) as an institution in driving sustainability agenda is growing but still in its infancy state and mostly focusing currently on listed companies in the Muscat security market (MSM) (Times of Oman, 2018).

However, there is a dearth of literature that describes the role of focal companies, especially oil and gas companies, in driving sustainability in Oman despite the role the industry is achieving to grow all other sectors despite the industry contribution to the economic growth.

The oil and gas sector as stated above has been the main driving force for many developing economies including Oman and constituted in many to almost 50% of national GDPs. However, Sachs and Warner, (1997) using a sample of 95 developing countries found that countries that have a high ratio of natural resources exports to GDP which appears to have shown slower economic growth than countries with low ratio of natural resource export to GDP. Its displacement of SMEs as a major contributor to the growth of the economy has created structural imbalance for the economy, undermining economic performance and national development. To further benefit society and lessen dependency on hydrocarbon-based economy many countries developed strategies to diversify their economies and grow society. Among those policies are the establishment of SMEs and a vibrant supply chain.

A study of Alshubiri and Hussein, (2016) concluded that the economic diversification and sustainable development in Oman require the need to enhance the performance and the contribution of small and medium-sized firms in the development and strengthening local value-adding. The study also highlights attention of an unbalanced impact of economic, social and environmental by GDP and FDI with a skew towards the coastal area of Muscat and Al-Batina and less toward Al-Wusta where most oil fields are concentrated.

Qatan *et al.*, (2015) examined the role of the regulatory system in food quality and safety in Oman in enhancing the food supply chain and contributed to better performance in positioning the supply chain competitively primarily in highly regulated worldwide markets such as the USA and the EU. The study further confirms that global stakeholders' pressures were instrumental in driving performance in the country and the industry's supply chain members. Therefore, any industrial sector in Oman striving to compete locally and globally will be compelled to address stakeholders' pressure. However, Al-Mataani, Wainwright and Demirel, (2017) examining the institutional environment in the entrepreneurial context of Oman concluded that the weaknesses in the institutional environment in Oman have led to the emergence of hidden entrepreneurs. It further revealed an interplay between unique institutional elements that have given rise to different implications to entrepreneurship in Oman such as regulatory weaknesses despite the government's momentous efforts to develop entrepreneurship sector; limited entrepreneurial mindset in the society; the undue influence of the family in shaping individual endeavour; the normative influence of favours called locally Wasta; the emergence of digital social networks; and an Islamic value to knowledge sharing. George, *et al.*, (2016) argued that embedding sustainability into organisations is vital to address the petroleum industry serious social and environmental consequences. However, they argued that although cognitive, organisational and technical enablers moved integration of sustainability forward in the organisation, certain cognitive barriers considerably affected the attainment of full integration. Further Silvestre, (2015b) studying oil and gas SSCM in emerging economy suggests that the implementation and management of sustainable supply chains are context-specific challenges and therefore theoretical, managerial and policy generalisations are difficult to be achieved which tallies with Al-Mataani, (2017) argument that previous literature has largely focused on the developed world, and assumed transferable findings to emerging economies regardless of the significant institutional differences. Therefore, with such dynamic and complexity may come a good role of focal companies using its purchasing power and its proven code of conduct to address such barriers. Hence having this backdrop in mind testing sustainability as new driver of impedance of new social norms in emerging economy like Oman, is more critical than ever before. Embedding sustainability into organisations is vital to address these issues, and sustainability integration in performance management systems could lead to better management and control of sustainability performance in organisations.

Considering the scarcity of research in the oil and gas context in Oman, I relied mostly on grey literature such as official websites, international reports, unpublished academic dissertations and conference papers, newspapers and magazines, to set the scene of sustainability context in Oman which is further elaborated in the next chapter. Therefore, considering the scarcity of empirical studies this study will be timely to guide the path of growth in the supply chain of the sector and beyond.

It is clear from the preceding discussion of related literature that sustainability and supply chain management are growing greater from academic scholars and practitioners. The oil and gas industry are at the centre of continuous debate in their influence on sustainable development and its adverse effects on the environment and society. Thus, the research problem will be discussed in the following section.

1.4 RESEARCH PROBLEM

Supply chain management (SCM) has had a tangible influence as a facilitator of the world economy globalisation. It appears, however, that the society handles a high price for the

economic benefits of globalisation in terms of environmental deficiencies, which are today known by terms like 'climate change', 'global warming', or 'carbon footprint' (Halldórsson and Kovács, 2010:7). With the rise in awareness of environmental and social concerns associated with the development, stakeholders, particularly consumers, are further displaying more concern towards these issues (George, *et al.*, 2016; Rajeev *et al.*, 2017; Orazalin and Mahmood, 2018; Saeed and Kersten, 2019). Therefore to manage new developments paradigm and evolving trends in rising expectation, transnational corporation and local organisations are presently compelled to identify and implement sustainable and innovative solutions, not only within their organisations' boundaries but also over the whole supply chain network (Halldórsson, Kotzab and Skjoett-Larsen, 2009; Halldórsson and Kovács, 2010; Yang and Sung, 2016; Martinuzzi, Schönherr and Findler, 2017; Saeed and Kersten, 2019).

In recent years, researchers have also become increasingly interested in sustainability, and there is a vast body of literature exploring the nature and benefits of sustainability in driving economic, social and ecological benefits and sustaining corporate licence to operate in developed countries. In a recent literature review on the topic of environmental sustainability in the supply chain management context, Centobelli, Cerchione and Esposito, (2018) debated that despite a growing research trend on the topic, there is a research gap concerning the evolution in environmental consciousness and the resulting evolutionary process of firms in embracing sustainable initiatives and established a necessity of future research. Studies associating environmental sustainability to firm performance have also been progressing as more companies are noticing the implementation of sustainability practices within the company and in coordination with their supply chain members. Golicic and Smith, (2013), found in data published since 1990 that SSCM and performance are still a burgeoning field of study. The result of a meta-analysis study confirms that environmental supply chain practices undoubtedly influence all three dimensions of firms' performance as indicated previously. Although the survey covered 20 years of research, the study only used published research hence offered publication that were biased and lacked empirical testing. Also, the study focused on economic impact and underscored the intangible impact like people safety. The study was more European, North American and significantly Asia economies oriented, and SSCM also globally focused.

Previous research on GSCM, for example, Geng, Sarkis and Zhu, (2005), Zhu and Sarkis, (2007), Brammer, Hoejmose and Millington, (2011), Diabat and Govindan, (2011), Mathiyazhagan *et al.*, (2013), Zhu, Cordeiro and Sarkis, (2013), Agi and Nishant, (2017) broadly addresses various managerial, market and non-market GSCM drivers or pressures that force companies to attempt to implement GSCM practices. Recent studies also show that the success of a company in implementing GSCM practices and positively performing towards sustainability objectives could be encouraged or hindered by the influence of influential factors such as the size of the focal company Angell and Klassen, (1999) Walker and Jones, (2012c), the top management commitment Matzler *et al.*, (2008), Pagell and Wu, (2009b), and Blome, Hollos and Paulraj, (2014), its technical capacities. Tate, Ellram and Kirchoff, (2010), Gmelin and Seuring, (2014), Foerstl, Kirchoff and Bals, (2016); the employees' education and training (Ramus and Killmer, 2007; Amui *et al.*, 2017), as well as external factors including the dependence relationship with SC partners (Cheng, 2011); the cooperation from SC partners (Albino, Carbonara and Giannoccaro, 2007; Xia and Chen, 2011) and information and knowledge sharing with SC partners (Fawcett, Magnan and McCarter, 2008; Shih *et al.*, 2012; Chen, Lin and Yen, 2014; Tseng, Lim and Wong, 2015).

Nevertheless, there is yet a need for a better understanding of how these influential factors, jointly or in isolation, impact the achievement of the company in implementing GSCM practices or a wider sustainability. Furthermore, observing from those studies gained mix outcomes giving practitioners confounded as to what action would beneficial to pursue (Gimenez and Tachizawa, 2012; Jabbour and De Sousa Jabbour, 2016; Mac-Kingsley and Pokubo, 2018). There is limited literature which has endeavoured to study operational practices' impacts on environmental performance and only few studies focus on green manufacturing but mostly employ a theory-focused approach to explain the role of critical factors driving environmental performance (Mishra *et al.*, 2016; Venkatesh Mani *et al.*, 2016).

Most of studies highlighted are mostly in developed economies, therefore, there is a necessity to examine contexts, distinct from those examined in the past, and, thus, previously were relatively unexplored like Oman. Also, empirical studies examining the underlying factors that influence the quality of sustainability practices in emerging markets, especially in the oil and gas industries, are quite limited (Lei *et al.*, 2015; George, *et al.*, 2016; Wan Ahmed *et al.*, 2016; Kuzey and Uyar, 2017)

The oil and gas supply chain are characterised by complex networks of companies, associated in profoundly technoscientific activities at each stage of the chain, from exploration and production activities at upstream to refining and distribution practices at downstream (Chima, 2007; Yahaya, *et al.*, 2013b; Ferns, Amaeshi and Lambert, 2017). This complexity has obliged research into supply chain modelling aimed at, among others, advancing its logistics and supply chain systems, inventory administration, and lessening interruptions in supply chains (Wan Ahmed *et al.*, 2016). Sears conducted the first study on supply chain management within the O&G industry context in 1993, which focused primarily on the downstream part of the industry and mostly on logistics planning (Neiro and Pinto, 2004). Achieving efficiency improvements through lead time and cost reductions were the goal and mostly involved optimisation modelling or simulation approaches. Hence, it could be argued, insufficient attention has been dedicated to the sustainability perspectives of the supply chain.

In 2007 lack of research in the area of the sustainable supply chain of O&G attracted the attention of Lakhal, H'Mida and Islam, (2007). However, that study might be criticized for focusing on refineries, downstream of the oil and gas industry, and lacked inclusiveness of social as its the norm with studies which focus on green supply chain management (GSCM). The environmental concerns are still more dominant in subsequent studies in which authors have stressed further the importance of such tools like life cycle assessment (LCA) to optimize closed-loop supply chains as well as enhance product design and corporate stewardship (Sarkis and Cordeiro, 2001; Sarkis, 2003; Krikke, le Blanc and van de Velde, 2004). Others included life cycle analysis. It could also be argued that a number of studies which included the ''cradle to grave'' approach and closed-loop GSCM (Piemonte, 2011:988), greenhouse gas (GHG) discharges (Brandt and Unnasch, 2010; Sealy and Dunlop, 2010) are complementary to the strive to understand such impact. However, the growing concerns of adverse impact from the industry and its supply chain resulted in the oil and gas companies are being exposed to a constant proliferation of laws, policies, guidelines and other norms applicable to their activities. Therefore, studies of laws and regulations as a prospective of compliance by Wagner and Armstrong, (2010) and risk management (Cigolini and Rossi, 2010) have taken the process into a new domain. The research has also seen a surge with more sustainability-related studies which included diverse elements of

sustainability, such as the combination of corporate social responsibility in supply chain practices (Midttun, *et al.*, 2007; Kew and Phillips, 2007; Berkowitz, Bucheli and Dumez, 2017) It also widely accepted that the role of international companies in oil and gas has been redefined, as civil society demands them to take broader responsibilities for managing social and environmental impacts of their projects on the communities and the environments (Wagner and Armstrong, 2010).

This decade has evolved to reflect more on the adoption of sustainable measures and performance outcomes (Thurber, Hults and Heller, 2011; Yusuf *et al.*, 2013), the sustainable sea transport outsourcing strategy (Tesfay, 2014), and local content practices (Ngoasong, 2014; Ablo, 2015, 2017; Al Hadhrami, 2015). The internal factors and its relation to strategies was the focus of other studies like the one by (Wan Ahmed *et al.*, 2016).

Therefore, overall, sustainable supply chain research in the O&G industry context is still fragmented where there is a lack of systemic or multidimensional research that focus on an inclusive approach of all dimensions (economic, social and environmental) of sustainability. Also, the role of external and internal factors that can influence or hinder the adoption strategies of sustainable supply chain strategy in the O&G industry especially in developing economy context is not addressed well in previous studies.

The previous studies mostly indicated that firms play an essential stewardship role in addressing sustainable development concerns. However, the key challenge remains how to balance the frequently adverse pressures generated by sustainable development at firm-level and suppliers' financial performance versus social disruption and environmental degradation (Matos and Hall, 2007). There are different thoughts on how focal companies can influence their supply chain members. Surana *et al.*, (2005) argue that the significant hurdles facing supply-chain management are the deployment of strategies that manage an adaptive, resilient and consistent collective behaviour in supply chains. They recommend that each company can impact the overall performance of its supply chain by employing a chain of actions through localised decision-making practices. It is therefore essential to identify those contextual factors influencing the external business climate and internal organisational circumstances that could affect SSCM practices.

Currently there is lack of clarity of listings, definitions, or ranking of drivers of SSCM in the oil and gas industry that may help practitioners to establish their sustainability goals, strategies and prioritise their sustainability-related activities in line with need established by diverse stakeholders and drivers of SSCM (Wan Ahmed *et al.*, 2016; Mahmood and Rizwan, 2018). Also, classification of the drivers of SSCM may support practitioners in recognising critical sustainability issues, to recognise difficulties, and to manage the required improvements. Also, not all drivers of SSCM pressure organisations similarly (Zhu and Sarkis, 2007), hence careful consideration of the oil and gas industry priority is a vital aspect for practitioners and strategy managers to consider when developing strategies and initiatives. It was further contended that the gaps in research so far concerning the factors influencing environmental sustainability initiatives, the classification of environmental sustainability initiatives, the impact of sustainability on supply chain performance and environmental sustainability initiatives is not yet fulfilled. The social dimension of sustainability has been largely neglected in the discussion particularly in the context of developing countries (Tukamuhabwa *et al.*, 2015; Mani *et al.*, 2016; Liu *et al.*, 2017) even more so in the oil and gas industry (Rentizelas *et al.*, 2018; Ibrahim, Hami and Othman, 2019). Therefore, this study will be expected to not only cohesively integrate the research that has been done to date but

also advance theory and practice associated with sustainable supply chain management practices. It will further build a better understanding of the context, variables, measures, or other factors that might be affecting the impacts of environmental, social practises specific to the supply chain and their performance.

Previous studies neglected to provide a comprehensive understanding of the factors that impact sustainability performance success as most are concentrated on the type of pressure exerted by stakeholders, performance factors or relationship between the pressure and performance. Therefore, SSCM studies distinct to the O&G supply chain context are required because the industry may be meeting sustainability pressures that are distinct to the industry (Wan Ahmed, 2016). The O&G industry works in various environmental, socio-economic, political and regulatory environments (Wagner and Armstrong, 2010). These external forces, including environmental and social concerns, technology advancement, and the evolution of alternative energy (Edwards *et al.*, 2008), may restrict companies' responses to the pressure to operate sustainably in their supply chains. The choice of samples from Oman attaches additional value to the study results as studies on GSCM and sustainability in general in the Gulf region are limited, though the Middle East economy is influential and accounts for about 2 trillion dollars (IPIECA, 2017), and its carbon footprint is increasing (ibid.). The Middle East economy diverges from other regional economies in its intense focus on petroleum- and petrochemical-related activities that are considered the most polluting (Testa *et al.*, 2016).

The Oil and Gas industry was chosen for this study, as the industry has recognised the importance of communicating TBL activities as a significant aspect of both creating and enhancing stakeholder relationships (Lantos, 2002; Yusuf *et al.*, 2013). Furthermore, the explorative nature of the oil and gas industry has driven to constant stakeholder scrutiny (Anderson and Bieniaszewska, 2005; Gill, Dickinson and Scharl, 2008; Gaudencio *et al.*, 2018; Orazalin and Mahmood, 2018). Accordingly, such stakeholders pressure resulted in the industry choosing a more 'proactive' path to improving communications with all stakeholders (Henriques and Sadorsky, 1999:87). Wheeler and Elkington, (2001) further argue that evidence of oil and gas firms increasing their reporting activities is indicative of their activity impact on the environment. Wan Ahmed *et al.*, (2016) argued there is variance in the sustainability reporting applications among the O&G companies with higher environmental intention opposed to social purpose and lacked supply chain indicators in the sustainability reporting. More recently, an online directory of CSR activities called Corporate Register.com, indicates that 59 oil and gas companies reported on their activities in 2019 compared with 69 firms in 2013 and from Oman there was only one dated 2014.

Recent trends in sustainability disclosure and reporting practices show a mostly increasing number of standalone reports, including financial, environmental and social information (Ha, Park and Cho, 2011) but it is challenged for its information asymmetry especially in developing economies. Orazalin and Mahmood, (2018), discussed that there is a great deal of information asymmetry in emerging markets, and business organisations remain unaware of the importance of voluntary disclosures, including sustainability information, for stakeholders. There are no studies examining sustainability reporting (SR) practices in Oman hence no empirical evidence on the relationship between SR and its determinants based on the Global Reporting Initiative (GRI) framework or the sustainable development goals (SDG) hence its impact on supply chain performance is unknown. Therefore, considering the dearth of knowledge on SR in transitional economies like Oman, the present study explores the extent and nature of the SR practices of the largest public and private oil and gas companies in Oman and the influence of possible under-lying factors on the quality of sustainability

information and may help in addressing the call for more integrated reporting to help addressing the sustainability agenda and the context of SDGs (Eccles and Saltzman, 2011; Martinuzzi, Schönherr and Findler, 2017; Gusmão Caiado *et al.*, 2018; Orazalin, Mahmood and Narbaev, 2019). Also given that evidence on the positive impacts of corporate activities on sustainable development is still scare or inconclusive (Oetzel and Doh, 2009; Kolk, 2016; Martinuzzi, Schönherr and Findler, 2017), this study will help to address some of those gaps especially in conceptualising sound corporate impact measurement and management in the context of SDGs and SSCM in an area facing arising social and environmental challenges like the middle east.

Therefore, it is apparent from the preceding discussion of related literature that existing gaps in the literature are yet prevailing because the knowledge about the holistic conceptualization of the principal factors that impact inter-organisational sustainability success is still surprisingly limited. Even less is known about these factors in the context of sustainable supply chain management in developing economies and Oman. This study is expected to approach this gap by further reviewing the literature in sustainability and strategy. The result of this extensive literature review will guide the development of a conceptual framework for sustainability, mainly social and environmental, that carries into account the influence of the important factors on implementing sustainability practices and on the associated performance outcomes. Through an empirical investigation guided by the themes and factors identified earlier, this study contributes further to the understanding of how the prominent factors interact with each other and influence the focal firms' performance. Thus, the aim and objectives of the research are developed and will be discussed in the following section.

1.5 RESEARCH AIM, QUESTIONS AND OBJECTIVES

The primary aim of this research is, therefore, to examine the role of focal companies in driving supply chain sustainability performance in the oil and gas industry in an emerging economy. It further seeks to develop an integrative framework that provides a holistic understanding of the critical factors that impact sustainability success by focal companies in Oman. Accordingly, the research questions are:

1. What are the key factors in driving or inhibiting sustainable supply chain performance in the oil and gas sector in Oman?
2. How do the key factors facilitate or inhibit sustainability performance in the supply chain?
3. How do they impact corporate strategies on supply chain performance?

In order to address the research, aim and attempt to answer the research questions, the following research objectives will be met:

- To conduct a critical literature review addressing sustainable supply chain management (SSCM), explore how the focal companies stimulate supply chain sustainable performance and identify the factors that facilitate or inhibit sustainable supply chain performance.
- To propose a conceptual framework, based on the extensive review of the related literature, which can provide a better understanding of the key factors that impact sustainable supply chain performance.

- To empirically validate the proposed conceptual framework in the context of the oil and gas industry in Oman.
- To adjust the conceptual framework based on the empirical findings, which can then be used as strategic framework for sustainable supply chain performance for Oman or similar economies

Having discussed the aim and the objectives of this research, the next section briefly highlights the research methodology for this study.

1.6 RESEARCH METHODOLOGY

To address the research, aim, objectives and attempt to answer the research questions, the study will be following the interpretive philosophical paradigm. Hindle, (2004) states that this paradigm underpinned by the underlying philosophical assumptions as well as the nature of research questions and existing literature on the phenomena under investigation. By taking account of this philosophical stance, the existence of multiple realities that are constructed and co-constructed through social interaction is assumed; only through the continuous interpretation of the meanings, experiences, and perceptions of social actors within their social settings can one construct a meaningful understanding of reality (Lincoln and Guba, 1994). According to this paradigm, the type of inquiry is interpretive, and the goal of the inquiry is the understanding of a prevailing phenomenon, not the generalisation (Antwi and Kasim, 2015).

Given the underlying aims of this study, the researcher will engage in a ‘passionate participant’ role and participate in the process of translating the meanings, experiences and perceptions of key leaders in the Omani oil and gas industry. Pointed by the philosophy of ‘interpretive practise’ school, both questions associated with how and what of social reality will be addressed (Gubrium and Holstein, 2012). Through this approach, the researcher will be able to pay close attention to the role played by the leadership in driving sustainable supply chain performance, learning and innovation for supply chain members. Guided by the underpinning philosophical assumptions and the underlying nature of the research questions, the research deemed the qualitative case study approach to be a suited method for answering the research questions (Voss, Tsikriktsis and Frohlich, 2002). Also, case study research has been recognised as being particularly more suited for examining how and why questions (Yin, 2004). It is more relevant for the research because expected to answer to questions of "how" rather than "how many"; for comprehending the world from the viewpoint of those informants (participants) and for measuring and articulating processes adopted (Pratt, 2009:856). Embracing the qualitative approach responds to the burgeoning calls for incorporating this type of research into studies to enrich our understanding of sustainability performance in supply chain management as survey-based research is unable to capture the nuances of leaders reaction to performance (Mayer, 2017). Pagell and Shevchenko, (2014) further state that the topic of sustainability has shifted to be in the mainstream of SCM but argue that the existing knowledge is not adequate to create a truly sustainable supply chain. The research is conversant by a qualitative, naturalistic inquiry design, which is concerned with examining the phenomenon within its existing settings (Lincoln and Guba, 1985). Therefore, the design will involve data collection via in-depth semi-structured interviews as well as publicly available documents, cororate websites and reports.

1.7 THESIS STRUCTURE

The thesis is structured in seven chapters. The order and the details of each chapter are outlined in Table 1-1 below.

Chapter No	Chapter Title	Description
Chapter One	The Introduction	Presents the introduction of the thesis and sets out the research background; the Research aims, objectives and questions. It shows the Research Relevance, Significance, and the Research Method. Finally, the chapter ends by outlining the organisation of the whole thesis and conclusion.
Chapter Two	The Context.	Considers the unique context of Oman's economic, social and environmental performance. It also discusses and elaborates on the oil and gas sector and its economic contribution.
Chapter Three	Literature Review	Analyses of the literature review related to Supply chain management, sustainability, Sustainable Supply Chain Management SSCM, sustainability Drivers and inhibitors. It also addresses the role of focal companies in driving sustainability performance and concluded by presenting a conceptual framework which will guide the data collection.
Chapter Four	Methodology	Discusses the research methodology, philosophies, approaches, strategies, choice of method(s), time horizons, and techniques and procedures. The chapter also demonstrates the study population and sample. It further describes procedures undertaken in developing the study instruments and procedures of data collection. Finally, it exhibits the study data analysis strategy
Chapter Five	Data Analysis and Discussion	Displays the results and analysis for the qualitative data collected and the interview results that show the extent to which the industry leaders perform sustainability practices in the supply chain and presents a revised conceptual framework.
Chapter Six	Conclusion	Contains the conclusion of the study. It is devoted to summarising the study's

		significant findings and conclusion, illustrates the study's contribution to knowledge, and presents the theoretical and practical contribution of the study. Additionally, the chapter reveals the limitations of the study and proposes directions for future research.

Table 1-1 Thesis structure

1.8 CHAPTER SUMMARY

This chapter has laid the foundation for the thesis. It has presented and defended the research problem and research points. Additionally, the research aims and objectives have been stipulated. The research design was summarily described, its relevance was addressed, and the contents of the thesis were drawn. On these grounds, the thesis can advance to the next chapter to review and incorporate the related literature. The next chapter will elaborate on the context of Oman and basis for its selection as study context.

CHAPTER TWO: THE CONTEXT

2.1 INTRODUCTION

This chapter provides an overview of Oman and the oil and gas industry as a context of the study and highlights the industry role in shaping the sustainability drive. It gives an overview of Oman and its social, environmental and economic development in section 2.2. The sustainability strives in Oman and the role of various institutions in shaping the agenda for sustainability and the oil and gas sector in Oman in section 2.3. Oman is a country with an economy based primarily on hydrocarbon sources; hence, the oil and gas sector and its contribution and challenges to sustainability in Oman are further discussed in section 2.4. sections 2.5 and 2.6 presents the two leading institutions, who shape the sustainability drive in Oman. The choice of the Oil and gas sector as a context is further discussed in section 2.7. A chapter summary is presented in section 2.8.

2.2 SOCIAL, ENVIROMENTAL AND ECONOMIC DEVELOPMENT

Oman is a developing country which is part of the Middle East and North Africa (MENA). It enjoys a strategically vital geographical place in the south-east of the Arabian Peninsula (Al-Hamadi, Budhwar and Shipton, 2007; Al-Maktoumi *et al.*, 2018). Oman also shares control of the Strait of Hormuz, the Gulf's key gateway, with Iran which eyes the global rate of 40% of oil export (Nasir and Al-jabri, 2017). Figure 2.1 presents the geographical location of Oman.

Oman has achieved a noticeable high level of social and economic development in the last four decades (Al-Kalbani *et al.*, 2016; Prabhu, 2019a). Common, (2008) praises Oman's development over the last decades as it has been swift and remarkable. Likewise Khan and Al Moharby, (2007) describe Oman as one of the most reformist and growing countries in the Middle East. With the uniform expansion of crude oil production and the swell in oil prices in the mid- and late 1970s, Oman started an economic development route that transformed it into a prosperous country. Today Oman possesses impressive physical infrastructure, many improved socioeconomic conditions, and a high standard of living (Saud and Atan, 2018).

Omani citizens have been enjoying significant developments in various fields including education, health and other civil service sectors. All crucial indicators such as the healthcare system, literacy rate and women's participation in corporate governance indicate steady improvement (Al Hadhrami, 2015). As part of the reform of social development, the government has given women equal opportunities to contribute to the country's prospects of economic growth (Al-Alawi *et al.*, 2018). Today, increasingly, women are entering the labour market, and, currently, several of them hold senior government positions, including Ministers, Undersecretaries (i.e. deputy ministers), Ambassadors and Members of the parliament (Ghouse *et al.*, 2017). Therefore, the right of women in Oman is comparable to those of any industrialised countries and as his majesty the late Sultan Qaboos of Oman himself said: " ...to exclude women from playing a meaningful role in the life of the country, amounts, in essence, to excluding half of the country's potential" (Joyce, 1995:1).

Figure 2.1: Map of Oman

Education has long been important to human welfare development, but it is more so in a time of accelerated economic and social change. The best way to provide children and youth for future sustainability is to provide them with strong foundational skills that will enable them to learn throughout their careers and their lives (Schwab, 2018). Oman's government has paid close attention to the Education and Health sectors to nurture social sustainability.

The World Bank recently issued its fortieth edition of the World Development Report (WDR) 2018, which was for the first time ever devoted to education (World Bank, 2018). The United Nations Development Programme's (UNDP) 2018 Human Development Report listed Oman at the top of the world's ten leading countries, which have made the most considerable progress in recent decades in education and public health (UNDP, 2019).

Concerning economic development, the Omani economy has transformed rapidly, and its performance has improved significantly in the last few decades (Al-Mawali, Hasim and Al-Busaidi, 2016). The government has been implementing economic reforms and liberalisation policies in order to build infrastructural capacity, increase economic growth and improve its citizens' well-being. According to Ferrand, (2019), shifting to private sector-led growth leads to winners and losers. The recognition of which sectors of the economy and society will be transformed is crucial to ensure supportive policies can be put in place to decrease the costs, especially on more vulnerable populations and related sectors of the economy. This is also essential to manage the political support for such reform. Although there is relatively limited evidence, either way, there is a common assumption that women, on average, benefit from

strong economic liberalisation through economic opportunities and job creation (Kabeer, 2012).

The main social concerns for Oman are the lack of jobs and the adverse effects of subsidy reform on vulnerable households. The international labour organisation (ILO) estimates the unemployment was 17% in 2017, while youth unemployment is approximately 49%, which is a pressing challenge in Oman where 40% of the population is under the age of 25 (World Bank, 2018). Considering the number of expatriates which constitutes almost 50% of the national population, the unemployment accuracy of 17% could be a subject of further debate of market segmentation and the lack of creation of suitable jobs, especially for women. The government has been mostly very reactive in addressing unemployment matters and recently initiated several schemes such as the creation of 25,000 jobs for Omani in the private sector in 2018 and the cancellation of work visa issuance to foreign labour for certain professions to be reserved for locals. Swailes, Al Said and Al Fahdi, (2012) argue that successful localisation (nationalisation) policies are essential to the resolution of challenging social problems in Oman and the Gulf States associating to the rising populations and youth unemployment. However, successful localisation is proving difficult, as the perceptions of the employability of locals remains a difficult supply-side problem and employers' inclinations for foreign labour remain a difficult demand-side problem.

The World Bank in its 2018 report argues that the gap between MENA economies and fast-growing ones is the performance of the service sector. It inspires nations to encourage accelerated technological developments which offer new opportunities for promoting private-sector-led growth through intensification of high-tech jobs in the service sector as each job generated in the high-tech sector potentially produce 4.3 jobs across all occupations and income group (World Bank, 2018). Although Oman, like many countries in the MENA region, has progressed strategies to remodel their economies and take advantage of disruptive technology, more is needed to seize the opportunity.

The private sector was inspired by the Omani Government to help the public sector in terms of generating sufficient employment opportunities, funding economic development projects and strengthening economic diversification. FDI has high potential to promote and enhance the economy, especially in the domestic private sector, and consequently, add value to long-term development goals (Alshubiri and Hussein, 2016).

Alzaabi, (2017) opines that although Oman is running by a free market system, its investment paradigm is inspired more by the quality of life and acquiescence to the traditions of the country's collectivist system based on Islam. Moreover, Oman is a centralised country with a collaborative and community-based system that is rooted in the traditional family as its most fundamental social unit. Oman acknowledges promoting the values of competitiveness, with fitting frameworks for the public and private sectors, paving the way for an economic renaissance where equal opportunities are assured for competitors to implement the best. This efficient and effective competition should be the mediator in the process of economic development to strengthen the economy and enhance its ability to adapt to regional and global transformations more sustainably. The business environment must provide the private sector with a chance to lead and empower it to run a balanced process for economic development and competitiveness.

The capital market requires more investment to finance fruitful innovative projects, especially for small and medium entrepreneurship that would create employment possibilities

for Omani youth. Oman enjoys a political and economic stability and the long-term investment of strategic relations that prevailed for several decades. Therefore, a private sector leading a competitive economy will secure the use of those advantages that the Sultanate enjoys. The location of the Sultanate can foster investment partnerships between the Omani private sector and the international business community to entice and retain a quality foreign direct investment in a way that meets the new global demand, the local challenges and supports the Sultanate position as a global trade hub. Those global corporations will develop the production base of various sectors and improve the participation of exports to the Sultanate's GDP.

The Business Year TBY, (2018) recently published a survey gauging business sentiment among companies and the business community in Oman. It concluded that the business confidence index in 2018 is higher than 2017 and shows a positive trajectory for years to come in real estate and tourism, construction, agriculture and green economies. It also argues that the business community sees an advantage in doing business in Oman and commonly advantages shown were an ongoing effort and support for diversification of the economy, Tanfeedh Strategy, the location of Oman for exporting resourcing raw materials and opportunities across various sectors. 'Tanfeedh,' is a national initiative for economic diversification, and its Implementation Support and Follow-up Unit (ISFU) has announced projects that the government considers necessary for its development plans. To diversify its economy, Oman is overhauling its ports infrastructure from Muscat to Duqm, Sohar and Salalah not only to acclimate them for tourism but more importantly, to boost industrial production and exports and utilise the country's strategic location to build a hub for international shipping.

However, the business community also see challenges facing them in Oman from the ongoing oil price crash, lack of skilled labour, liquidity problems and payment delays and slowdown in the number of existing and new projects. The positive takes away from the analysis by TBY (2018) is the high level of optimism among industry and manufacturing professionals as almost half of them indicate a will to expand their manufacturing capacity in the coming twelve months. The Oil and gas are also seeing a growth of 12%, but trail behind other sectors and could be an indicator of the government driving away from hydrocarbons-based economy and build-up of its SMEs.

Oman is striving as stated above to build its infrastructure and has allotted 10 billion U.S. Dollars (USD) to the Duqm Economic Free Zone (DEFZ) and is endeavouring another 10 billion dollars in foreign investment by 2022 (Export.gov, 2018). The Chinese state-run company Oman Wanfang has previously pledged $370 million for utilities, roads, and other infrastructure, and Chinese investors would also develop a one-gigawatt solar power generation facility and an automobile assembly plant.

The government is also striving to expand the investment through a public-private partnership (PPP). "PPPs are 'legal agreements' between government and private sector entities to provide public infrastructure, community facilities and related services, (Prabhu, 2019b). The Public-Private Partnership Law, declared by Royal Decree 52/2019, encourages and incentivizes the private sector to invest in infrastructure projects and public services that contribute to the diversification of national revenue sources with a substantial portfolio of projects, envisioning investments of around RO 2.5 billion ($6 billion), for implementation under the PPP model (Prabhu, 2019b).

Oman vision 2040 stipulates that the optimal application and sustainability of natural resources are essential to strengthen the economy and spur production and advocate that future strategy in natural resource management will concentrate on progressing non-traditional sources, such as the employment of renewable energy to decrease production cost and, therefore, heighten the competitiveness of the economic sectors. The future strategy will also foster a transformation towards a green economy exhibited in infrastructure projects and renewable energy sources, including wind and solar power in a manner that advances environmental sustainability, builds stability, overcomes the constraints of financial management, and helps the treasury with incomes from non-traditional natural resources.

2.3. SUSTAINABLIITY IN OMAN

The year 2000 was an extraordinary milestone for the global agenda to improve the quality of life and particularly relevant for developing countries (Al-Lamki, 2010). In that year, 192 nations of the world gathered at the United Nations (UN) and endorsed the "Millennium Declaration". In the Declaration, 8 Millennium Development Goals (MDGs) were recognised to be achieved by 2015 (United Nations, 2015). The goal is to subdue poverty, hunger and disease in developing nations, and grant universal access to health care and education, with importance on gender equality in both areas and admittance to political representation. The initial 18 targets and 62 Indicators accompanying the 8 Goals (G1-G8) saw the second wave of the goals implemented in 2015 with an extended reach to 17 goals.

The Sultanate of Oman, like many other countries, took a pledge to sustainable development and its goals. The Sustainable Development Goals (SDGs), also known as the Global Goals, are an appeal for action to answer to the ever-increasing global challenges that confront our world such as poverty, inequality, protecting the planet and ensuring everyone relishes peace and prosperity (UN, 2019). Their interconnectivity distinguishes these goals and often the key to achieve one goal will involve undertaking issues associated with another. They are also inclusive to include everyone without distinction and unite us collectively to make a positive change in our world and achieve sustainability (World Bank, 2018).

Oman was amongst the world nations at the UN Summit in September 2015 to acknowledge and adopt the Sustainable Development Goals, becoming one of the member states that agreed upon dedicating all efforts to attain these goals. His Majesty, the Sultan, is the leading champion for sustainability in Oman. His address to the conference Future Vision of the Omani Economy: Oman 2020 in June 1995 sparked the definition, the vision, a process, and the role of people in driving sustainable growth. He stated "Development is not an end in itself, but it is to build the human being who is its tool and maker, and therefore should not stop at the concept of material wealth and build a diversified economy, but must go beyond the formation of a citizen who is able to contribute aptly and consciously in the process of development and through developing his technical and professional abilities, stimulating his creative and scientific energies, refining his diverse skills, and directing all this towards serving the country and the happiness of citizens" (Oman Supreme Council for Planning, 2019:2).

The speech is very inclusive and puts the right platform for human development in the subsequent business plans processes at the centre of any economic and social growth. Oman's five-year development plans are considered part of the country's strives to sustain economic and social growth with due care to its ecological heritage. Thus, the Global Goals were integrated into the main pillars of the Ninth National Five-Year Plan of the Sultanate.

Four years since the 2030 agenda for SD was announced, Oman has striven to translate its international commitment to achieving those goals by 2030 by integrating them into long term strategies and medium and short-term development plans and programs of actions. Oman's Vision 2040 and the Ninth Five-Year development plan (2016-2020) emphasise that the Sultanate of Oman adopts the UN agenda and sets policies, initiatives and programmes to achieve the goals and reach them at the international agreed date (Oman Supreme Council for Planning, 2019). Oman is also very transparent in reporting its achievements publicly through its Voluntary National Report (VNR). The first VNR presented in July 2019 at the UN evaluates the Sultanate's performance of the sustainable development goals, the follow-up progress made, and shed light on the difficulties facing the implementation (OmanObserver, 2019b).

Social justice is an antecedent to having cohesive, healthy and peaceful societies. It is achieved by implementing a respectable livelihood, sustaining the variety of social welfare services such as education and health, and the prerequisite of social safety nets to guarantee a viable living for the present and future generations. Access to high, fair living standards and sustainable well-being necessitates the making of a stimulating environment for the civic contributions from non-governmental and voluntary programs, as well as socio-economic empowerment programs targeting women and youth. Improving social protection through the community social responsibility (CSR) requires organising the works of instituted entities and institutionalising isolated CSR projects into a more cohesive and collaborative effort.

The Oman vision 2040 is very comprehensive in attending the sustainability goals ambitiously through the promise of a comprehensive and fair healthcare system which cover all regions of the Sultanate, with the participation of government, the private sector, and civil society. According to Oman vision 2040, this coverage should include more medical specialities, specialised health institutes, and advanced human cadres who work in the fields of medicine and healthcare. The desired healthcare system should follow international best practices to boost reliability, whether in medical services, health centres, medical laboratories or with human resources. A new culture will emerge, which is necessary to shape the relationship between citizens and healthcare institutions. Community awareness will increase regarding the concept of health being the responsibility of all, and technology will play a key role in communication and dissemination of awareness, knowledge and health education. Technology will also help to overcome geographical and distance barriers to ultimately deliver world-class health services for all citizens and residents of the Sultanate.

Although Oman managed to achieve 13 of the 17 goals as indicated in a report submitted to the UN in July 2019, there are other relatively significant problems such as road accidents and non-communicable diseases such as diabetes. Road accidents and non-communicable diseases remain the two most significant challenges for Oman as the country continues to strive to meet the Millennium Development Goals (Al-Lamki, 2010). In Oman, significant efforts are being made to improve road safety, including public education and research support and further enhancement of medical care is progressing (World Health Organization, 2006). However, Oman is a big country with harsh terrain and complex topography, with high and rugged mountains and barren valleys with nationals being scattered over vast areas of sparsely populated settlements. These factors, together with the population growth, present difficulties to the provision of health services in Oman. Currently, non-communicable diseases profess a threat to the health of the Omani population. As life expectancy and the corresponding risks confronting elderly population rises, Oman's health system should be capable of evolving to react to such needs. The health system as envisaged in the health

vision 2050 should also address the expectations of the people of Oman and obtain suitable technology for developing the health of the people (Ministry of Health, 2014). The aim of "Health Vision 2050" is "that the Omani people live healthy and productive lives through establishing a well-organized, equitable, efficient and responsive health system, grounded by societal values of equity and social justice" (Ministry of Health, 2014:viii). Currently there is a growth in private health sector provision of medical care but the role of the private sector in such a vision is to take a leading role in building a nationwide capacity.

In ensuring environmental sustainability, Oman is playing its role by striving to green the country and reduce carbon dioxide emissions by assuring no old cars are on the road (Al-Lamki, 2010). According to the recent report submitted to the UN, Oman has been able to reduce the consumption of ozone-depleting substance to zero or a level below the Montreal Protocol (McKenzie *et al.*, 2019). There is no doubt; sustainable development has entered a new era of data-driven environmental and social policymaking to meet the ambitious targets outlined in the UN 2015 SDG and the Paris agreement. Oman has evolved very well in most indicators. However, Oman still needs to improve its air pollution rank of 179 and environmental performance ranking (EPR), which currently sits in 116 with environmental health and eco-system vitality ranking at 14 and 161, out of 180 countries respectively (Yale Center for Environmental Law & Policy, 2018). Scientists recognise that anthropogenic climate change represents a powerful driver of environmental degradation worldwide and impacting natural, economic and social systems in all countries. Climate change and greenhouse gas (GHG) lies at the heart of some of the most pervasive and intractable environmental problems, and are driving substantial, unprecedented changes in the atmosphere and global climate system (World Meteorological Organization, 2019). The EPI ranking is intended to inspire countries to engage in healthy competition to make our planet a better place to live but the challenge facing countries in meeting the growing demand for food, commodities, and new development further shape spatial structure and landscape in ways that alter the earth's ability to reflect or observe heat. Hence to curb these impacts and the cascading impact that imperil existing social and economic structure and threaten the sustainability of our planet need urgent, concerted actions by all countries, including Oman.

The other targets of this goal are to halve by 2030, the proportion of people without sustainable access to safe drinking water and sanitation and to improve the lives of at least 100 million slum-dwellers significantly. Unsustainable water consumption and over-extraction of freshwater resources also contribute to water deficiencies and threaten long-term sustainable development in the Arab world. On average, the agricultural sector continues to be the most significant consumer of water in the Arab region, although consumption levels vary significantly between countries (Al-Kalbani *et al.*, 2016). Oman has not fully achieved sustainable access to safe drinking water and sanitation in all regions. However, the authorities were working diligently on this issue and winning ground and treated wastewater being injected daily into coastal aquifers to ward off saltwater intrusion and sustain water reserves in Oman (Al-Maktoumi *et al.*, 2018).

On the institution front, Oman is striving hard to meet the 2030 global target and is taking rigorous actions to ensure that the Sultanate enjoys a sustainable, prosperous future, so much so that reaching the SDGs has been made a priority as part of the Sultanate's Vision 2040, providing it with additional momentum (Times of Oman, 2019). Therefore, Oman has been active in setting the regulations and supporting organisations to expedite sustainability goals implementation. However, a study of Garbie, (2011) to assess and measure the level of sustainability awareness in industrial organisations as a whole including all stakeholders in

Oman prove that the concept of sustainability is not entirely understood, and it still requires more attention from all stakeholders especially in public and academic organisations in Oman. Hence, the authorities in Oman are more aware but not the general public. It was also noticed from the results that industrial companies put more focus on environmental and social sustainability than inclusive sustainability.

A study by Al Shueile, (2015) argued that the extraordinary socio-economic development in Oman is one-sided and dependent on the oil sector despite the government strive to draw a balance between exploitation of its natural resources, and the development program which intimates an early courtesy towards sustainability and environmental protection. A study of Maksood and Achuthan, (2017) on energy sustainable consumption in Oman indicated that a better alignment is needed for residential consumption and power generation. A good prediction would allow inhabitants to regulate their consumption and related authorities to generate only the predicted amount of electricity. It would loosen the pressure on oil and gas reserves and help decrease the subsidised budget for the nation. Therefore, residence, energy producers and policymakers could benefit from such sustainable practices and enhance the country and individual bottom line.

2.4 SUSTAIANABLITY CHALLENGE IN OMAN

The sustainable development leads to improve enduring economic models in order to advance better balances between economic growth, social needs, and protecting the local environment and decreasing the negative impact of growth on the global environment. Oman is endowed with moderate resources of oil and gas, which is reflected in a healthy economy, but hydrocarbon dependent hence could be considered a contributor to hydrocarbon and green gas emission.

Oman is one of the MENA region countries which depends on oil and gas-based economy, and this region is rated the world's leading supplier of fossil fuels. Oman for the last five decades is known for its lustrous modernity and a lead in sustainability standards of living. Oman modernisation is much faster than that of North Africa part of the Arabian region due to the stable political regime and prospering economic, which is driven by the availability of fossil fuel resources. However, the country is dependent on foreign expertise, technologies, and skilled workforce. The Middle East generally lacks political stability, and the Arab spring destabilised many governments.

Oman was confronted with similar protests seeking economic and social justice. However, the protests were limited and have not had a lasting effect on the stability of the country as Oman was already taking radical reforms since 1995 to liberalise and diversify Oman's oil-dependent economy (Freedom House, 2013). In preparation for Oman's accession to the World Trade Organization (WTO) in 2000, the government eliminated restrictions on foreign investment and ownership of enterprises in the country; also, Sultan Qaboos, the monarch and prime minister, promised new jobs, an increase in social benefits, and measures to addressed concerned raised by protesters. Recently the government has further enhanced its regulatory systems to accommodate more foreign direct investment (FDI) attraction. The laws also show the Sultanate's vision for the future and promote the competitiveness of the national economy globally and to create an organised and favourable regulatory environment for investments in all the sectors (Kutty, 2019). However, lower global oil prices from 2014 to 2017 diluted Oman's fiscal situation, current account balance, and foreign reserves. Oman

also suffers continuing pressure on its country budget due to comparatively high subsidies, expenditures, and job creation initiatives (World Bank, 2018).

As a result of the fluctuations in the prices of oil, the country is pursuing strategies to diversify its economy in order to reduce its over-reliance on the oil sector (Al-Maktoumi *et al.*, 2018). Over the longer term, Oman is pursuing more pro-business reforms such as foreign ownership, FDI, SME support and Private Public Partnership (PPP)(Ministry of Health, 2014; World Bank, 2018; Prabhu, 2019a). Also, the country is pursuing the expansion of industrial zones with the latest technologies and highest international standards to attract foreign investment and create jobs (Buckley and Rynhart, 2011; Nasir and Al-jabri, 2017).

The 2030 Agenda for Sustainable Development' ratified in September 2015 by the 193 United Nations Member States, represent the world's comprehensive plan of action for social inclusion, environmental sustainability and economic development (Hwang and Kim, 2017). Fulfilling the sustainable development goals (SDGs) by the target of 2030 will demand unique cooperation and collaboration among governments, non-governmental organisations, development partners, the private sector and communities at large. While governments possess the principal responsibility to prioritise, plan and execute strategies in meeting the SDGs, the private sector and civil society will play a critical role in the implementation of national plans. Certainly, governments are expected to rely on a high degree on businesses and investors in supporting the SDGs delivery.

Recently, Oman embarked in streamlining its sustainability approach in the development of industries and establishing a more holistic framework that leads toward decreasing resource consumption, i.e., water, energy, and other natural resources. The country and the oil and gas industry corporate social responsibility programs have been blended to sustainability concepts to contribute and give back to the community in which they are operating. Those initiatives include community investments, health and safety, education, eco-friendly solutions, and enhancing local content or locally called in-country value. However, these attempts might be hindered by poor awareness in sustainability, negligence in environmental issues despite the high education levels, rise in unsustainable consumption and rising in youth employment.

The oil and gas sector are an influential global industry, and it can have both positive and negative impacts on a range of areas covered by the SDGs (UNEP, 2017). Therefore, its role in driving the agenda of sustainability and facilitating conversation in which oil and gas companies, working both individually and collaboratively with governments, communities, civil society, supply chain members and other partners, can assist to realise the SDGs.

The oil and gas activities have historically contributed to some of the challenges that the SDGs seek to contribute to managing such as climate change and environmental degradation, economic and social inequality, tax avoidance and corruption, population displacement, armed conflicts, gender-based violence, risk of certain health problems, and the breach of human rights. In modern time, the industry has made progress in withdrawing, relieving and enduring and managing such impacts and risks. Al-Badi, (2019) argued that most of the electricity generation in Oman is dependent on depleting hydrocarbon and Oman could benefit from the abundant solar power in power generation.

There are broad challenges and potential opportunities of contributions of every part of the oil and gas sector to the achievement of the SDGs. The diverse spectrum of the Oil and Gas sector, from exploration and production through to pipelines transportation, refining, liquefaction and retail offers a vast opportunity to contribute to SDGs.
The industry also could contribute to the specific goal by integrating it within core business operations and through collaboration with other stakeholders at the national and international level, including supply chain members. The industry can also leverage its experiences and resources in support of the goal. Overall, oil and gas production can cultivate economic and social development by achieving affordable access to energy, creating opportunities for proper and ethical employment, business and skills advancement, improved fiscal revenues, and enhanced infrastructure.

Therefore, with thoughtful planning, strategizing and implementation, the oil and gas industry has the possibility to contribute across all 17 SDGs, either by intensifying its positive contributions or by circumventing and mitigating adversarial impacts (IPIECA, 2017; UN, 2019) Integration entails a shared agreement by all stakeholders of how the SDGs can generate value and align with the company business goals. Companies can operationalise the SDGs in their core business practices by consolidating them into policies, standards and processes and corporate systems. Hence, integrating the SDGs into Oil and Gas companies' business can realise more elevated efficiencies, cost economics and competitiveness, and can improve the oil and gas industry's social licence to operate.

In Oman the water resources are adversely affected by such rising drivers as population growth and socio-economic development of the agriculture, tourism, and urbanization sectors resulting in overconsumption of water exacerbated by the pressure of climate change. The decreased rainfall and increased water demand have resulted in the degradation of water quantity and quality as well as the reduction of water resources and the reduced area of cultivation, which have resulted in significant losses in agricultural income (Al-Kalbani *et al.*, 2016).

Kacimov *et al.*, (2009) highlighted that the water table had developed a dip caused by unsustainable intensive pumping of fresh groundwater zone and evaporation of the saline phreatic surface. Al-Maktoumi *et al.*, (2018) also urged those efforts should be devoted to managing stressed aquifer systems as a priority in order to improve their resilience level to climate change in Oman. Furthermore, ecosystem-based management is one of the most important approaches that may lead to reducing the impacts of fishing on Oman's ecosystems (Mashjoor, Jamebozorgi and Kamrani, 2018). Other scholars also urged for more sustainable practices such as the adoption of the drip irrigation system as well as the design of water policy incentives for irrigation modernization in Oman (Luedeling and Buerkert, 2008).

Non sustainable operation can impact Oman natural heritage and create unsustainable shift if not managed well. The 1970's oil boom attracted rural labour to urban and oil operation centres in Dhofar and other provinces, thus creating a labour shortage that had a profound transformative impact on frankincense production. This transformation caused frankincense extraction to evolve from an Omani-controlled system to a Somali-dominated hybrid system and unsustainable harvesting from non-skilled expatriate labourer (Farah, 2008). Therefore, the government of Oman is taking serious consideration to address the challenges highlighted by the scholars, and the aim of 2040 vision is to address structural reform in the water sector to increase the efficiency of water management, develop sanitation services, and employ

modern technology in wastewater processing for agriculture, among other utilisations, to expand and diversify production and improve food security. The government has also shown enthusiasm in greywater reuse and water conservation methods (Jamrah *et al.*, 2008).
Oman has diverse natural resources, including minerals. The mining industry is also considered an effective contributor to the improvement of the quality of human capital (Stern, 1995). However, the government realises that the export of raw materials is not sustainable; hence, the vision of 2040 is advocating for reforming this sector for the gradual manufacturing of raw materials rather than exporting them as is. This approach would enhance the local component of industries, build relevant technical capabilities and boost the socio-economic for better-diversified revenue sources and improved economic resilience of the country and its people.

The government of Oman recognises the fact that any drive for the betterment of ecological, social and economic sustainability needs a highly flexible and capable governing apparatus which can plan, organise, monitor and evaluate performances and results. Such an apparatus would require that the state institutions render services in the most reliable and modern way without the current bureaucracy responsible for escalating various costs in the private sector. Alzaabi, (2017) further suggest that Oman requires a strategy for an industry-based method based on efficiency and improvement within the contemporary legal and sustainable order. This way, the stakeholders sponsoring an access economy can bestow a case for the effective and efficient use of resources, expanding Oman's technological hub and preparing Oman for a business environment that can be expanded beyond the country's boundaries.
Therefore, this new initiative should be a productive body with effective programs and tools to empower creativity, reward productivity, and sanction the non-compliance. This entity can prioritise and align goals across different government bodies and adopt effective and stimulating policies to accomplish strategic government and private sector projects to improve revenue sources for the treasury through proper governance.

Awareness' of economic sustainability represents the most important in governmental departments than others. Therefore, the government and the industrial sector need to enhance their communication towards the general public further. Besides, the focal companies in the industrial sector, like oil and gas, need to use their purchasing power to enhance sustainability practices among their supply chain members. However, government institutions have a significant role to play to facilitate that (Thurber, Hults and Heller, 2011; Mani and Gunasekaran, 2018). Therefore, next sections will address current institutions in Oman, which might shape the way forward.

2.5. OMAN CENTRE FOR GOVERNANCE AND SUSTAIANABLITY (OCGS)

The establishment of Oman Centre for Governance and Sustainability (OCGS) in 2015 and its affiliation to the Capital Market Authority (CMA) and its composition of board members from companies and institutions of all legal forms and individuals is an affirmative commitment by Oman towards sustainability and corporate governance (CMA, 2015). The centre objective is to develop the culture of sustainability in Oman through disseminating the concept and the culture of governance to all companies. It further strives to encourage and activate the principle of CSR to ensure its role towards serving the community and achieving the requirement of sustainable development.

The Royal decree 30/2015 mandated and authorised the centre to achieve its objectives and has all the powers that enable it to do so. It prepared specialized rehabilitation programs in

the fields it supervises. The centre also mandated to hold workshops, seminars and conferences at the local and international levels to exchange experiences in the fields of corporate governance, social responsibility and other areas of support and technical, administrative consultations, research and studies for companies in the areas of corporate governance and social responsibility and spread awareness of the areas of work of the centre (Times of Oman, 2018). This would be accomplished mostly through the issuance of publications and journals related to corporate governance, social responsibility and other means. However, the centre is only encouraging voluntary participation and the establishment of proficiency awards in the field of corporate governance and social responsibility which might fall short from other countries' mandate (Oman Daily Observer, 2018).

OCGS organised a conference on the 4th of December 2018, which discussed the development of the sustainability strategy of the Sultanate in meeting the UN millennium development goals. Oman is currently scoring a rank of SDG index 64.30 out of 100, and EPI rankings of 116 out of 180 on environmental health and ecosystem vitality which has more room for improvement (Yale University, 2020).Therefore, OCGC could further contribute to sustainability drive in Oman especially in enhancing ethical code of conduct for Oman to the challenges facing rapid strive for FDI and PPP. OCGS could be a forum of dialogue between the public and private sectors on approaches to accomplish the goals of sustainable development fostered by the United Nations (UN) besides sustainability awareness.

2.6 OMAN SOCIETY FOR PETROLEUM SERVICES (OPAL)

OPAL is the first society in Oman's Petroleum industry started in 1998. Opal called itself an industry forum society for Oman's Petroleum Industry with more than 400 members including Oil and Gas producers and operators, contractors and suppliers-large and small. OPAL is an NGO that aims "to provide a single umbrella body to agree and promote standards of work competence and professionalism, with the vision of raising the standards of the Oman Petroleum Industry to become world-class, internationally competitive, and optimising industries resources." (MDT, 2015). Quality, health safety and environment (QHSE) is a crucial priority in Oman and OPAL takes the mission and to moderate and address common challenges for the benefit of its members and stakeholders. OPAL mission is to uniquely serve member companies by promoting synergies, added-value creation and capacity building to enhance sustainability of the energy sector and the national economy (OPAL, 2019).

OPAL contribution to sustainability in multi-folds including developing industry standards, encouraging companies to achieve minimum quality, health safety and environment (QHSE) standards and leading practices with no fatalities and no severe injuries in the industry safety performance (OPAL, 2018). Human resources development training schemes organized by OPAL give priority to employers' need and aim to enhance competence and work ethics. OPAL recently being very active in developing industrial code of conduct and standard on HSSE on vocational training and conducts compliance audits for its members. OPAL further strives to encourage sustainable business practices and establish and enhance common standards for the oil and gas industry in Oman. They foresee that through the promotion of best practices for management of Health, Safety, Security and Environment (HSSE); the promotion of leading practices for quality management, quality products and services, efficiency, savings and productivity; increase most suitable practices for human capital development and management; advance best practices for business ethics and code of conduct and the pursuance of relevant common industrial standards for its stakeholders and

partners (OPAL, 2019). Therefore, OPAL is an institutional contributor and collaborative platform in the drive for sustainability performance.

2.7 OMAN OIL AND GAS THE CONTEXT

Extractive industries like oil, gas, and mining have the potential to spur enormous advancement in the lives of citizens and can serve present and future generations in resource-rich countries. However, often in practice, it is often a challenge to accomplish this real and positive potential. This difficulty stems from a variety of factors particular to the extractives sector: (i) the stakes are enormous, (ii) significant power inequalities exist amongst the actors involved, (iii) time horizons are long, and (iv) the impacts of extractive activities are often geographically clustered (Huurdeman and Rozhkova, 2019). This blend of challenges places pressure on the institutions that govern the sector and on the systems that support sound decision making to maximise development return on the current and the future generation.

The oil and gas industry can be recognised to be relevant to the Omani economy for two main reasons: the number of people hired (both directly and indirectly) by the industry and the contribution to gross value added (GVA). Oil and gas production from the Omani oil fields has contributed approximately 73 per cent of the government's revenues in 2017 (Export.gov, 2018). The exploration and production activity have concentrated on the extraction of oil and gas from easily recoverable fields, and as such, much of the residual reserves are in less accessible areas, such as deep-water environments or more challenging reservoirs. The need to recover these reserves from these challenging environments has propelled the development of innovative novel technologies, which assist in maximising recovery (PDO, 2018).

Initially, the oil and gas companies were established to create wealth and profitability and resources were only seen as the means to achieve profits, and the main measure of successful trade (R. George *et al.*, 2016). However, sustainability concerns arose over the exploitation of natural resources and frequent environmental disasters (Armstrong and Wagner, 2010). The interlinked relationship between poverty reduction and climate change warrants a paradigm shift towards ceasing poverty, fostering economic growth, respecting human rights, and assuring social inclusion (Sachs, Maennling and Toledano, 2017). There are also substantial reasons for O&G companies to be involved and take a leadership role in implementing sustainability (Silvestre, 2015b). Access to sustainable and modern energy is essential for economic growth, employment, education, poverty reduction, health and safety. Without energy, other sustainable development goals cannot be accomplished (Sachs, Maennling and Toledano, 2017). Besides, the public feels ambivalent towards the industry as it imposes significant costs on society, including ecological degradation, social dislocation, conflict, injuries, and death (Abdalla et al. 2014). Compliance strategies which consist of codes of conduct and standards are the most critical supply chain action adopted to counter social issues in supply chains (Yawar and Seuring, 2017). However, codes of conduct are not adequate unless it acts as initiatives for building partnerships with shared values and commitment (Leigh and Waddock, 2006). Also, collaborative relationships through direct supplier development strategies such as training and education, are necessary mechanisms to implement codes and standards (Krause, Handfield and Tyler, 2007).

The increasing awareness of Oman's citizens of sustainability agenda and the impact of climate change on its livelihood created pressure for government and private — sector to adopt sustainable solutions and initiatives for sustainable performance (Bryde, Mouzughi and

Al Rasheed, 2015). However, according to the KPMG survey of corporate responsibility reporting 2017, Oman is among countries with CSR reporting rate lower than the globally average (less than 72%). Also, Oman's rank dropped from being 37% in 2015 to 30% in 2017, and it is argued due to lack of the presence of CR reporting regulation in the country (KPMG, 2017). In Oman, common social practices related to transportation, government spending and other social activities are progressing but still lack environmental sustainability and Pillai and Al-Malkawi, (2018) associate that to inefficient regulatory framework. Further the adoption of renewable energy sources may improve but has moderate growth in the MENA region including Oman. Therefore, fossil fuels are playing an essential role in the energy world but demand an efficient refining process to deliver high-quality clean fuels for transport as well as energy generation within Oman and the region (Rana, Vinoba and AlHumaidan, 2017).

The choice of samples from Oman attaches additional value to the study results as studies on GSCM in the Gulf region are limited, though the Middle East economy is influential and accounts for about 2 trillion dollars (World Bank, 2015), and its carbon footprint is increasing (ibid.). The Middle East economy diverges from other the regional economies in its intense focus on petroleum- and petrochemical-related activities that are considered the most polluting (Testa *et al.*, 2016). The Oil and Gas sector in Oman has been taken as the focus of this research because it is also centrally vital to Oman's economy. The large size of the sector and its capacity to expand in the plausible years sustainably make it the site of great potential for economic growth, social inclusion and environmentally conscious that would position Oman well in it strive for a sustainable economy. It contains a vast supply chain and many SMEs with development potential.

In the last few years, many Oil and Gas companies have taken steps toward implementing more sustainable strategies to support their supply chain members in performing in a manner which cause no harm to the people and the environment. In recent years, as noted earlier, the Oil and Gas sector of Oman witnessed a significant expansion in driving the economic and social growth. Sustainability practices have evolved to contribute to the national sustainable agenda, but the room for improvement in addressing issues like human resources and employment is needed (Saud and Atan, 2018). Realizing sustainable development demands multi-sectoral and multi-disciplinary approaches, and many of the challenges the SDGs address are beyond an individual company's capabilities or control.

Oman is further diversifying its hydrocarbon industry to enhance its value chain. With oil and gas production valuing for about half of Oman's GDP, the energy sector represents a crucial role in Oman, not only as an origin of government income but also as an employer of Omanis and a provider of technology and know-how. At this year's Ministry of Oil and Gas (MOG) media briefing March 2019, held in Muscat under the theme committed to sustainable development, local and international oil and gas authorities debated measures of tackling the challenges Oman is confronted with and assured that the sector would continue, for a long while, to support the goal for economic diversification (Oman Daily Observer, 2019).

The minister of oil and gas addressed the audience in confirming the role the industry is taking for successful strive for diversification and sustainability. in the energy transition strive, he stated the sector is aligned with Oman vision 2040 in term of economic diversification and sustainability. "The sector started for this purpose, the utilisation of solar energy to generate steam in Amal field and to pump into wells for increasing the production of the field instead of using natural gas, which used in other projects" (MOG, 2019:1).

Therefore, O&G industry in Oman must adopt a more transformative and proactive approach with a shared value strategy. It should seek to build up and enhance their perception as a "good citizen" to increase organisational legitimacy and access to critical resources (Wolf, 2014). Kramer and Porter, (2011) argue that shared value strategy offers corporations the opportunity to utilise their skills, resources, and management capacity to lead social development in ways that even the best-intentioned governmental and social sector organisations can rarely match.

The industry must accommodate the coevolution between economy, society and ecology, i.e. significant, non-linear changes in societal cultures, structures and practices (Loorbach, 2010). A transition strategy would include shifting from a centralised fossil-based energy system to a renewable energy decentralised system (Loorbach and Wijsman, 2013) and sustainability for all stakeholders (Gao *et al.*, 2017). However, the performance of the O&G focal firms and its supply Chain need to be measured to assure systemic implementation. There are performance indicators and protocol developed by the Global Reporting Initiative (GRI) are considered helpful in improving sustainable performance outcomes (GRI, 2017). Therefore, sustainable performance is vital as the focal company performance is affected by the rest of the supply chain members and needs to extend the assessment process upstream and downstream along the supply chain (Escrig-Olmedo *et al.*, 2018).

Oman is perceived to be an appropriate context for studying the role of focal companies in driving sustainability performance for multiple reasons. Oman of today stands out as one of the most successful transitional economies in the Arab world, and its private sector has been at the forefront of adopting sustainability practices (Al-rahbi, 2008). The strive Oman made in using gas in electricity generation is leading the MENA region (Gastli and Charabi, 2010). The O&G industry is selected to demonstrate the role of focal companies' situation in an industrial supply chain. Multiple global processes from the exploration, extraction, refining and distribution phases distinguish the industry (Bandinelli and Gamberi, 2011). It represents a significant role in modern society through economic development and social activities (Wan Ahmed *et al.*, 2016).

To accomplish the full potential to contribute to the realisation of the SDGs, oil and gas focal companies in Oman should engage in meaningful multi-stakeholder, including supply chain members, dialogue with relevant actors locally and nationally to identify joint SDG priorities and collectively define potential coordinated responses to the SDGs in the local context. This study is designed to understand the approaches adopted to achieve that.

2.8 CHAPTER SUMMARY

This chapter provided an overview of Oman context with an emphasis on the relevant oil and gas sector in driving sustainability. The regulatory sector in Oman has increasingly developed and become more pro sustainability. However, some immature regulative elements can hamper sustainability adoption due to the newness of sustainability policy reforms. Weakness in the corrosive and normative pressure might further hamper the adoption of those measures unless leading industries like oil and gas use their purchasing power to enhance their adaption within companies and across their supply chain.

After providing background information about Oman, the context of this study, and the challenges of adopting sustainability in Oman, the next chapter presents the literature review and the conceptual model.

CHAPTER THREE: LITERATURE REVIEW

3.1: INTRODUCTION

This chapter examines the relevant literature on supply chain, supply chain management (SCM), sustainable development (SD), sustainable supply chain management (SSCM), and the role of focal companies in designing strategies and practice most suited to drive SSCM performance.

3.2 SUPPLY CHAIN (SC)

It seems there is more consensus on the definition of supply chain or supply chain network among authors (La Londe and Masters, 1994; Lambert, Cooper and Pagh, 1998; Surana *et al.*, 2005) and considered broader and comprehensive concept than either logistics marketing channels (Ferrell *et al.*, 2013). According to La Londe and Masters, (1994) the supply chain is several independent firms involved in manufacturing products or forwarding products and placing it into the customer's hand. Lambert, Cooper and Pagh, (1998) called it the alignment of firms that brings products or services to market. Others call the supply chain a network of multiple companies that are connected, by linkages through upstream and downstream, in different processes and activities that produce values to customers (Christopher and Towill, 2000; Da Giau *et al.*, 2016). Surana *et al.*, (2005) state that supply-chain network transfers products, information and finances among many suppliers, manufacturers, distributors, retailers and customer and is characterized by a forward flow of goods and a backward flow of information as shown in figure 3.1.

Mentzer et al., called supply chain "a set of three or more entities (organisations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer" Mentzer *et al.*, (2001:4). It is argued that within this definition of the supply chain, the final consumer is considered a member of the supply chain and offers the inclusivity of all configurations of the supply chain. Therefore, supply chain is a tangled network with a substantial number of interactions and interdependencies amongst various entities, processes and resources, making it a highly nonlinear with complex multi-scale behaviour. It has a structure traversing several scales and grows and self-organises within a complicated exchange of its structure and function. This delicate complexity of supply-chain networks, with an absolute lack of prediction, makes it challenging to manage and control them. Besides, the dynamic and developing organisational and market trends suggest that the supply chains should be highly dynamic, reconfigurable, scalable, flexible and adaptive: the network should sense and react efficiently and effectively to meet customer evolving demand (Surana *et al.*, 2005). As it is discussed next, supply-chain management plays a critical role in making the network evolve in a coherent manner.

3.3: SUPPLY CHAIN MANAGEMENT (SCM)

Scholars acknowledge that supply chain management (SCM) has become an important research among business leaders, academics and policymakers and widely covered in the literature in last three decades (Surana *et al.*, 2005; Y. Yusuf *et al.*, 2013; Gorane and Kant, 2015; Silvestre, 2015a). It is described in operational term involving the flow of materials and products and a management philosophy and processes (Mentzer *et al.*, 2001). Lambert, Cooper and Pagh, (1998) called it an integrative idea that controls the flow of distribution

channels from suppliers and users. Others call it as a management of networks of interconnected organisation (Harland *et al.*, 2007). La Londe and Masters, (1994) call it a method of managing relationships, information and materials flow across company borders. Its purpose is to enhance customer service and economic value through a synchronised management of movements of goods and information.

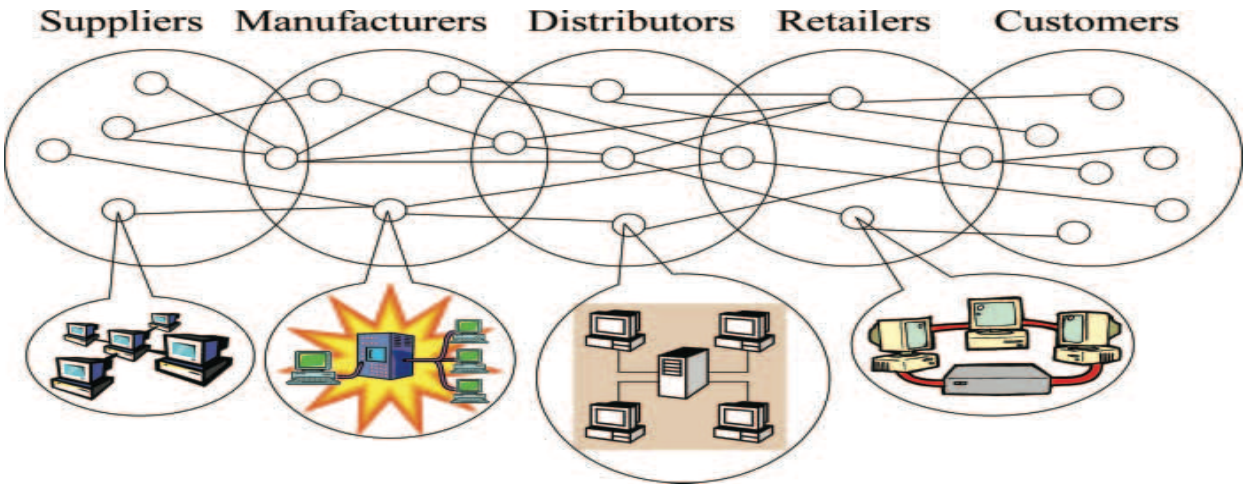

Figure 3.1 Supply-chain network (Surana et al. 2005).

Supply chain management (SCM) has evolved over the years and management has been pounded using complicated terminology in the discussions and definition of SCM hence limiting them the better understanding and its practical application (Ross 1998). According to Mentzer *et al.*, (2001) authors have differed in defining supply chain management but could be classified into "three categories: a management philosophy, implementation of a management philosophy, and a set of management processes". It is further suggested such diverse alternative definitions is the cause of "confusion for those involving in researching the phenomena" Mentzer *et al.*, (2001:5). Therefore, a better consensus is needed.

3.3.1: Supply Chain Management as a philosophy

Pre-1950s, supply chain management and logistics were considered mostly in military terms as initially had to do with acquisition, maintenance, and transportation of military materiel, facilities and personnel (Ballou, 2007). The fundamental and philosophical approach is to describe SCM in totality as a single entity performing collectively rather than fragmented one is evolving (Houlihan, 1988; Cooper and Ellram, 1993). The philosophy of SCM takes a systems approach to seeing the supply chain as one entire entity within a chain, rather than as a set of fragmented parts, each performing its function. It stretches the concept of partnerships into a multi-firm to manage the flow of products from the original supplier to the intended customers (Cooper and Ellram, 1993; Chams and García-Blandón, 2019). It is evolving that, the SCM as a set of beliefs that organisations in the supply chain have direct and indirect effects on the achievement of all supply chain members and ultimately the supply chain performance (Cooper et al. 1997). It is a philosophy that integrates subsidiaries' activities, actors and resources between all stakeholders (Svensson, 2007). That integrative philosophy is guiding organisations to manage the follow from suppliers to customers in a synchronised way and instructs its members to focus on developing and creating customers

value (Min and Mentzer, 2004). According to Mentzer et al. (2001, p. 7), SCM philosophy has the following characteristics:

1. Systems approach, viewing the supply chain to managing goods from the supplier to the ultimate customer,
2. A strategic orientation toward cooperative efforts to synchronise and converge intra-firm and interfirm operational and strategic capabilities into a unified whole, and
3. A customer focus, to create unique and individualised sources of customer value, leading to customer satisfaction.

Therefore, emphasises the importance of encompassing the SCM philosophy within a firm and called it a "supply chain orientation" (Mentzer, 2004:65). He further argues that without supply chain orientation within the company's supply chain management is dysfunctional, unless develops and maintains culture elements of relations with its partners such as real, commitment, cooperative norms, organisational compatibilities and top management support (Mentzer, 2004).

The integration of activities within supply chain members is imperative for the success of the supply chain management. Therefore, the integration of activities associated with the flow and transformation of goods and services through improved supply chain relationships is important to achieve a sustainable competitive advantage (Handfield, 2009). Considering the flow between suppliers and customers is not limited to goods SCM is also associated with advanced information technology, effective vendor management, rapid and responsive logistics services and clients' relationship management (Fawcett and Magnan, 2002). Chima, (2007), called it a continuous improvement of a sequentially organised set of operations. However, such enhancement is unattainable unless a management of interconnections of organisations that relates to each other through a system of linkage is put in place (Slack, 2012). Mintzer et al. (2001) conclude a definition of supply chain management as "the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole" (Mentzer et al., 2001:18).

3.3.2: Supply Chain Management as Network of suppliers

Definitions of SCM have evolved, and few examples highlighted above are a testimony to its growth. Global competition, rapid technological evolution outsourcing of none-core activities and efficiency in all aspects of supply chain made SCM an area of strategic importance (Andersen and Skjoett-Larsen, 2009). This recognition indicates a paradigm shift in modern business management that business no longer competes as solely autonomous entities but an interlinked chain (Lambert, Cooper and Pagh, 1998; Lambert and Cooper, 2000). It suggests supply chain is crucial in the highly competitive global business environment, and well-managed supply chains provide an operational and strategic advantage (Silvestre, 2015b). This leads to the emergence of a network as new dimension of SC. According to Webster, (1993), the network is a well-recognised organisation for SCM and the complex, multifaceted organisational structures that emerge from various strategic alliances.

Supply networks are nested within wider inter-organisational chains and consist of interconnected firms whose principal purpose is the acquisition, use, and transmutation of resources to provide aggregates of products and services. They comprise of chains within

which goods and services move from primary supply origins to customer(Harland *et al.*, 2001; Bessant, Kaplinsky and Lamming, 2003). It is further elaborated that the supply network concept is more complicated than the supply chain concept. It encompasses the blend and complexity of systems including parallel loops, reverse loops, and dual-way exchanges. It includes a broad, strategic view of resource acquisition, development, management, and transformation. Supply chain management, on the other hand, is a less strategic more simplistic logistical perspective, unidirectional and linear movements of materials and associated information (Harland *et al.*, 2001).

As stated above in early years of supply chain management evolvement, the integration of process across supply chain partners, collaboration, cost efficiency and customer's satisfaction has been the focus of SCM (Mani and Gunasekaran, 2018). Collaboration among its members to aligned objectives, open communication, sharing resources and risks and rewards is another critical element of SCM successes (Silvestre, 2015a). However, recently various stakeholders including society, non-government organisations, and public authorities are showing an increasing interest and pressure in the management of environmental and social issues related to business' behaviours (Mani *et al.*, 2016). Therefore, sustainability has evolved and derives competition hence it is necessary to define sustainable development (SD) before we progress to sustainable supply change management (SSCM).

3.4 SUSTAINABLE DEVELOPMENT (SD)

Increased concerns about excessive resource consumption, environmental degradation, and social inequality have led to call for a shift towards a more sustainable economy and society (Jones and Corral De Zubielqui, 2016). Broman and Robèrt, (2015), stated humanity face decreasing ecosystem quality and increased risk of tipping the biosphere into a state where it would be difficult or impossible to maintain the human civilisation. Humanity faces social sustainability challenges and decreasing levels of trust in many societies imply very little potential to address the ecological challenges cohesively. There are also increasing financial impacts related to the unsustainability of the environmental and social systems (Broman and Robèrt, 2015). It indicates ecological and social issues are increasingly on the public agenda, which provides triggers as well as opportunities to include them in managing the supply chain. The recent climate change *"Paris Agreement"* is one of such efforts urging firms to be more sustainable (UN, 2015). Post the UNRio+20 Earth Summit and the publication of Inclusive Wealth Report 2012 (UNEP, 2012) by the UN there was a more comprehensive international campaign to include natural renewable resources into global and national accounting that includes natural wealth as part and parcel of sustainability.

The bulk of people conceived the meaning of sustainability as apparently simple and often about human survivability and the escape of ecological disaster although the professional discourse, is complicated and more technical focused (Ravetz, 2006). Sustainability is a multi-faceted and disputed notion, with various people accommodating different definitions and accounts of it (Baumgärtner and Quaas, 2010). Therefore, there is an extensive number of definitions for the term *sustainability* and has been an evolving field since the introduction of the first definition and the one most frequently cited is from the World Council on Economic Development. The original Brundtland's Commission definition states *"...development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*(Brundtland, 1987:31). The figure (3.2) below is depicting the intertwine relationship of sustainability dimensions and the role of triple bottom line (TBL) in sustainable performance.

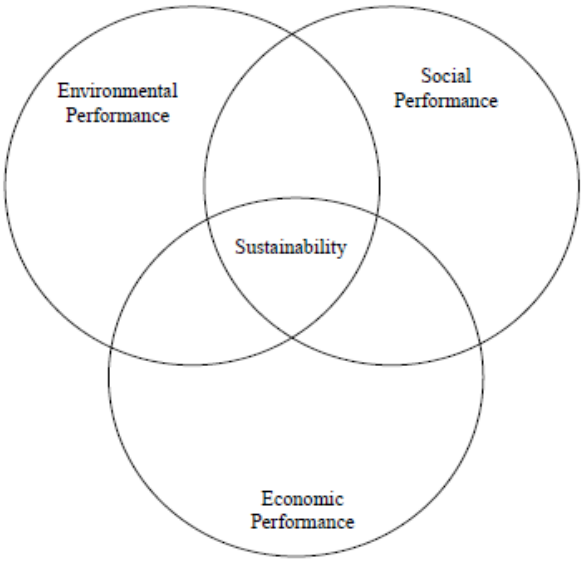

Figure 3.2: Sustainability: the triple bottom line (Source: Carter and Rogers, 2008a:365).

In practice, business sustainability is about managing the 'triple bottom line.' which suggests that if an organisation desires to grow sustainably within its operational context then the economic, environmental and social aspects should be achieved (Elkington, 1998). Hence in a business context, it is referred to as meeting the needs of companies' direct and indirect stakeholders, primary and secondary, without jeopardising its capability to meet the needs of future stakeholders (Martínez-jurado and Moyano-fuentes, 2014).

Hence, decision-making that takes into consideration financial, social, and environmental risks, obligations and opportunities should be considered and not only just corporate reporting. Sustainability literature indicates that sustainability takes an encompassing approach to the environmental, social and economic performance of firms and requires cooperation and collaboration (Walker and Jones, 2012a; Ahi and Searcy, 2013). Therefore, sustainable businesses should be more resilient in creating economic value, robust ecosystems and healthy communities. Sustainable companies and businesses survive over the long term because they are intimately related to healthy economic, social and environmental systems. However, such evolvement needs a system of management to address the current debate on how supply chains should incorporate sustainability and how they can be implemented and managed. The following section is addressing how sustainable supply chain management address the pursuit of all three dimensions of sustainability.

3.4.1 Sustainable Supply Chain Management (SSCM)

Sustainable supply chain management has evolved and the scope of research has been expanding and rising to the attention of industry leaders, academic and policy makers (Beske and Seuring, 2014a; Silvestre, 2015a; Mani *et al.*, 2016; Gao *et al.*, 2017). There are many definitions evolved over the years, some of such definitions includes; Norman and Macdonald, (2004) call a sustainable supply chain as that which realises development by acknowledging the social, economic and environmental aspects of their policies and actions; and that while creating financial benefits and attending to stakeholder's preferences, supply chains must also care to shield the environment from the detrimental effects of the policies

and actions. Jennings and Zandbergen, (1995) further illustrate that it performs well on both traditional measures of profits and loss as well as on triple bottom line. Therefore, presenting sustainability in three dimensions appears to be universally accepted (Dyllick and Hockerts, 2002; Carter and Easton, 2011). It enables easy understanding of the combination of economic, social and environmental issues in SC. This is what the literature defines as the Triple Bottom Line (TBL) (Elkington, 1998). Similarly, sustainable supply management is strategic, transparent integration and achievement of an organisation's social, environmental, and economic purposes in the systemic coordination of critical inter-organisational business processes for improving the long-term.

Carter and Rogers, (2008) call SSCM as the transparent, strategic and systemic integration of the major business processes that enable individual companies and their supply chains to achieve a joint optimisation of economic, environmental and social performance. Others view it as a management process of materials, information and capital and corporation among companies to achieve economic, ecological and social goals driven by stakeholders' requirements (Müller and Seuring, 2008). Also, sustainable supply chain management is the specific managerial actions that are taken to obtain more sustainability with an end goal of creating a truly sustainable supply chain, hence creating compatible objectives with environmental and social aspects (Pagell and Wu, 2009). While others show evidence that the implementation of SSCM leads to commercial success (Hsu *et al.*, 2013). The forward and reverse processing in the chain to ensure a socio-economic and ecological sustainable recovery is highlighted as another objective of the SSCM (Frota Neto *et al.*, 2008; Beske and Seuring, 2014b; Brandenburg *et al.*, 2014; Huang and Yang, 2014).

Considering the supply chain strives on integration and coordination of chain members to achieve growth, (Kaynak and Montiel, 2009) called SSCM an integration and coordination of the economic, environmental and social practices throughout the supply chain members. Others see it a pursuit of sustainability objectives (Walker and Jones, 2012b). However, some do not share the same enthusiasm and claim the social aspects of sustainability has been neglected (Beske and Seuring, 2014). Therefore, SSCM is considered as the management of materials, information and capital flows, and cooperation between companies along the supply chain, while taking into account goals from all three dimensions of sustainable development that derive from customer and stakeholder requirements (Müller and Seuring, 2008).

The current debate is centred on how supply chains should incorporate sustainability and how can be implemented and managed (Silvestre, 2015a). Authors argue the main difference between conventional SCM and SSCM organisations lies in the pursuit of all three dimensions of sustainability (Beske and Seuring, 2014) and the way sustainability is integrated in the organisation to address the TBL. The social dimension of SSCM is nearly wholly missing or sometimes embraced in a far too simplified practice and could be challenging to model social impacts and the environmental dimension is mostly treated by developing on life-cycle assessment-based categories (Seuring, 2012; Brandenburg *et al.*, 2014; Franca et al., 2017; Yang et al., 2017). There is also, consensus that SC performs well on traditional operational metrics and it forms a foundation of a sustainable supply chain but bad performers on such traditional one will inhibit efforts at sustainability (Pagell and Wu, 2009). It is further argued that, the importance of the supply chain management to achieve desired high return warrants firms with sustainability as a core value and proactively engage with their supply chain member to achieve competitive leap. Pagell and Wu, (2009) support

the notion that lean and total quality management (TQM) are good supply chain practices but lacking evidence of providing sustainability. However, concerns for closing loop and reverse logistic in many industries including oil and gas are required for leading practices in sustainability. Therefore, the oil and gas industry and role in sustainability is discussed next.

3.5 OIL AND GAS INDUSTRY AND SUPPLY CHAIN

The Oil and Gas sector and the industry plays a pivotal role in our day to day life and feeds our needs for energy, mobility and heat (Yusuf et al., 2013). The supply chain in the O&G is highly intricate and distinguished by the complexity of its network of companies that are connected to engineering-intensive activities to develop oil and gas reservoirs and sources (Siddiqui, Haleem and Sharma, 2012). The O&G supply chain is mostly identified by three segments, upstream, midstream and downstream. The upstream segment explores and produces crude O&G sources from onshore and offshore reserves, while the midstream and downstream segment develops crude O&G into various refined products and derivatives, which are delivered to domestic and industrial consumers (Chima, 2007; Bandinelli and Gamberi, 2011; Wilson and Kuszewski, 2011; Smits, Justinussen and Bertelsen, 2016). Fig (3.3) below show a typical oil and gas supply chain.

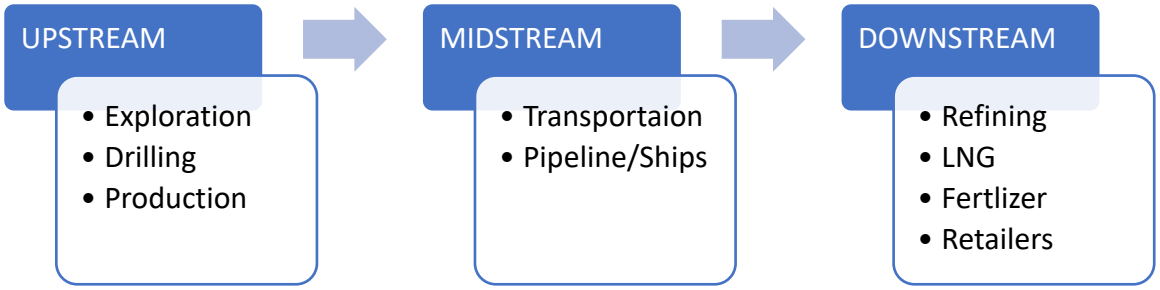

Fig 3.3 a typical oil and gas supply chain

Mendes *et al.*, (2014), further affirm of oil and gas reserves to sustain current production for long time but the challenge is managing reserves and delivering the final products to customers at affordable cost.

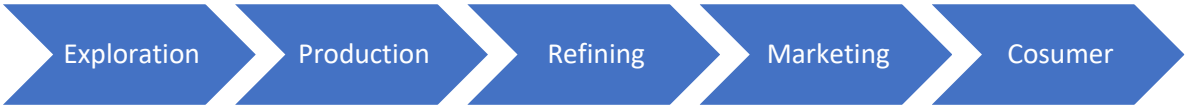

Fig 3.4 Phases of the oil and gas supply chain

Fig (3.4) identifies the leading supply chain linkages in the oil and gas industry and represents the interface between firms and materials that flow through the oil and gas supply chain. It is the needs of vendors in the oil and gas industry drives the need for the supply chain. He adds within each stage there are many operations (e.g. exploration include seismic, geophysical and geological operations, while production processes involve drilling, reservoir, production, and facilities engineering (Chima, 2007). Refining is a complicated process, and its output is the input to marketing which includes the retail sale of gasoline, engine oil and additional refined outputs. Each stage of the link can be a separate company or a unit of an

integrated firm" (Chima, 2007:28). Also, Silvestre and Dalcol, (2009) identified four categories of the oil and gas suppliers. (e.g., oilfield operators, providers of goods and services with high technological complexity, providers of goods and services of moderate technological complexity and suppliers of goods and services of low technological complexity). Its classification is based on the level of technological complexity used in their products and services and the degree of responsibility within the supply chain. However, the weakness of such supply chain is the tendency of each company acting in its best interest instead of maximising the benefit of the chain (Chima, 2007).

3.6: FOCAL FIRM AND SUPPLY CHAIN

As discussed previously supply networks are nested within wider inter-organisational chains and consist of interconnected firms whose principal purpose is the acquisition, use, and transmutation of resources to provide aggregates of products and services.-Mentzer *et al.*, (2001) argue that supply chains need a leader that assumes the leadership or stewardship role to operate efficiently. Lambert, Cooper and Pagh, (1998) further add, supply chains need leaders as much as individual organisations to drive better performance. Cooper and Ellram, (1993) propose that a supply chain leader plays a key role in coordinating and overseeing the whole supply chain or the network. The term multinational companies (MNCs) and focal companies are commonly interchangeably used by authors and defined by Müller and Seuring, (2008:1699) as "companies that usually:

1. rule or govern the supply chain.
2. provide the direct contact to the customer; and
3. design the product or service offered"

Therefore, focal companies might be held responsible for any adverse effects of their supply chain lack of environmental and social responsibility (Müller and Seuring, 2008). According to Freeman, (1995), transnational companies (TNCs) can stimulate and organise the necessary learning through transferring specialised equipment and skills to new locations. Focal companies also have the capabilities to make technology exchange agreement and coordinate joint ventures in any parts of the world. They also respond proactively to constraints of scarce resources and environmental degradation and assume a leadership role in sustainability (Gosling *et al.*, 2017). They are often large and powerful assemblers positioned in high volume, low variety supply network with strong focal firm influence (Harland *et al.*, 2001).

However, in a very dynamic market with varying degrees of influence, such system is idealistic. Therefore, Harland *et al.*, (2001:21) recommend four type of supply network and their differentiating factors are "the degree of supply network dynamics and the degree of focal company supply network influence" and focal companies' management of their supply network could form different ways. Grandori and Soda, (1995) emphasise symmetric versus asymmetric hence the relevance of power in managing the system is important. Others stress on joint creation or structure autonomy hence distinguishes value creation from others such as social networks (Campbell and Wilson, 1996). Cravens, Piercy and Shannon, (1996) identify four types of networks: flexible, hollow, virtual and value-added. However, dispute the adequacy of that classification. Harland *et al.*, (2001:22) state that such classifications are on "the dimensions of the volatility of environmental change and the type of inter-organisational relationship involved (collaborative or transactional)". They further state "they highlight variations in market structure, technological complexity, the core competency of the

coordinating organisation, and the network members' core competency, in each of the four types of network" (Harland *et al.*, 2001:22). They refuted that classification on the lack of empirical vetting and size of the sample and argue it offers limited operational assistance for focal companies in managing their network efficiently. Another reason could be also on the characteristics and difference between supply chain and network. The network concept is rather more complex than the supply chain as it encompasses the complexity and mess involving in two-way exchange and lateral links. It also include a more strategic view of resources acquisition and transformation (Harland *et al.*, 2001). Therefore, Harland *et al.*, (2001) recommend four types of supply network depending on the market dynamics and the degree of focal firm influence. They proposed a model that captures nine different types of activities that members of a network perform in managing and coordinating supply system. Fig (3.5) exhibit the activities in a process called "A taxonomy of Supply Networks" (Harland *et al.*, 2001:25).

Harland *et al.*, (2001), state that the taxonomy is based on two dominant factors: the degree of supply network dynamic and the extent of focal company supply network influence and the combination of two dimensions result in four types of the supply network.

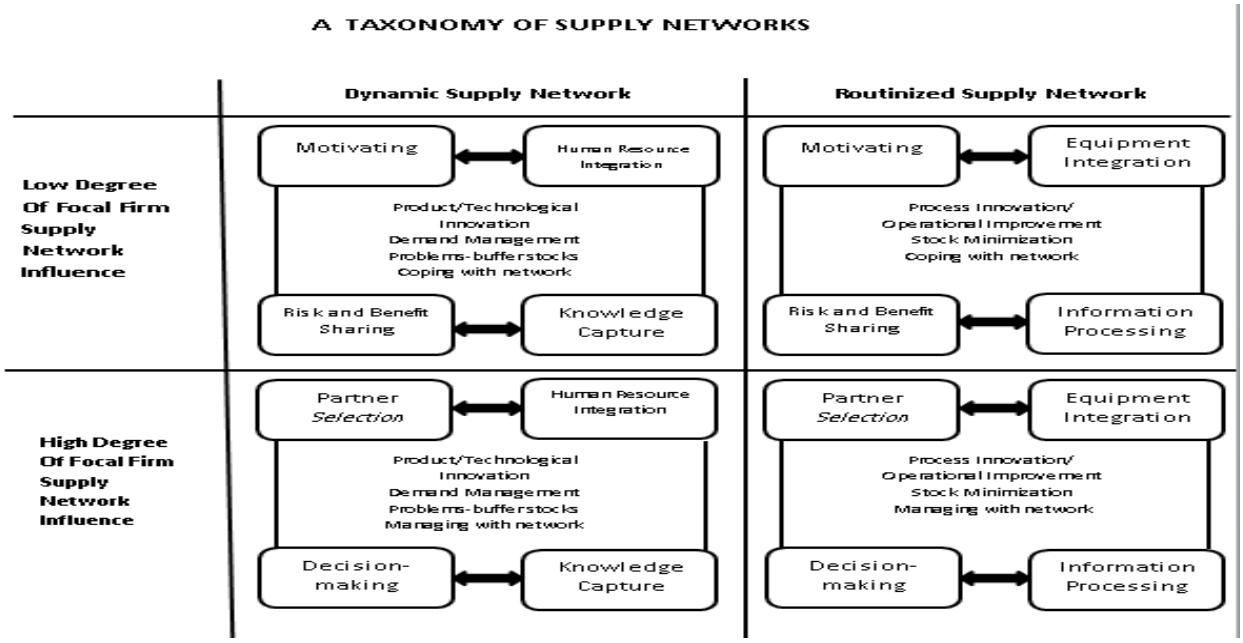

Fig 3.5 A taxonomy of Supply Networks and focal company influence, (Harland et al., 2001:25)

3.6.1 Supply Network Type 1: Dynamic/ Low Degree of Focal Firm Influence.

The focal company in this network has little influence over other actors and faces a share of challenges in managing the dynamic of the chain. The network is competing on innovation rather than cost. Considering innovation is a derivative factor of knowledge and human intellectuality, human resources integration and knowledge capturing are main features of the network. Low value-adding by the focal firm and lack of drive of sustainable innovation are

diminishing the influence over the rest of the supply network. Such low influence is demotivating and lacking the risk of benefit sharing by other members resulting in discouraging other players in the network to contribute and invest in sustainable innovation and sustainability. Therefore, the influence of focal company in driving sustainable supply chain performance is limited.

3.6.2 Supply Network Type 2: Dynamic/High Degree of Focal Firm Influence

In this supply network, the focal company enjoys a substantial influence over the rest of the network. This influence is caused by the high value adding, the perceived image of their innovation capacity is extraordinary, and the provision of access to the rest of the network is leading. The orchestrating position makes the focal company able to choose its partners and manage and lead the network. Therefore, the role of the focal company in leading the drive for sustainability and sustainable supply chain performance is high.

3.6.3 Supply Network Type 3: Routinised/ Low Degree of Focal Firm Influence

In this supply network, the focal company has low influence despite operating under stable conditions. The stability of the network is driven by internal routine operational processes and stable external market with a small number of competitors. The internal processes are routine conditions caused by the variety of volume creating stable production processes. The external market conditions with a low frequency of product launch hence cost, and quality is a requisite competitive priority. Therefore, the focus is on processes innovation to improve operation processes such as inventories. The industry in a mature state and lack of incentives for other network partners make the influence of the focal firm low hence its impact on sustainability as low as well.

3.6.4 Supply Network Type 4: Routinised/High Degree of Focal Firm Influence

Considering the network is operating under stable conditions and routinised and the focal firm is in a place to choose whom to work with and make the decisions on behalf of the supply network, therefore, focal firms enjoy a high degree of influence. The oil and gas industry in developing economies might fall in this category, hence the industry ability to influence sustainability agenda is high.

3.6.5 Focal Company and sustainability implementation

Focal firms are defined as companies influencing the whole supply chain because of their position and related power (van Bommel, 2011). They play the stewardship role in addressing sustainable development pressures, and such concerns have become part of many companies' operational and competitive strategies (Sharma and Vredenburg, 1998). Focal firms might be held responsible for the adverse effects of a lack of environmental and social responsibility in their supply chain (Müller and Seuring, 2008). Silvestre (2015a) considers them as change agents within the supply chain who promote and diffuse innovations. Focal companies, therefore, have a responsibility for leading supply chain learning efforts, supporting innovations, and improving processes building more sustainable businesses practices with their supply chain (Silvestre 2015b). Also, they create profit, competitiveness, ecological efficiency, and social responsibility (Gualandris and Kalchschmidt, 2014).

Furthermore, the SSCM literature offers insights into how individual organisations, focal companies, by their buying power and position in the supply chain can manage relations with suppliers to pursue higher sustainable performance (Dewick and Foster, 2018). Besides the literature articulating that supply chains must be maintained to achieve higher economic returns to its stakeholders and focal companies in the Oil and Gas (O&G) industry has a stewardship role in leading that (Silvestre 2015a). Also, the safety, environmental and social performance of O&G and its supply chain have seen growing scrutiny by all stakeholders including media and activist groups (Lewis and Henkels, 2014; Nadvi and Raj-Reichert, 2015; Silvestre et al., 2017). Societal perceptions after traumatic incidents and industry tragedies like the Deep Horizon in the Gulf of Mexico in 2010 can increase attitudes towards stringent regulation of business' and higher quality control of products and process (Dube and Black, 2010). They also generate drastic changes in regulators behaviours towards the oil and gas companies' attitude toward sustainable behaviours (Pate-Cornell, 1993; Vinnem, 2007; Wan Ahmed et al., 2016; Silvestre et al., 2017). Hence, focal companies' role is not just purely economic as they influence the supply chain by encouraging capacity building, integration, dialogue and collaboration for better sustainability implementation in the O&G industry. However, what drives focal companies in implementing sustainability will be discussed next.

3.7 DRIVERS AND BARRIERS OF SSCM

Organisations are continuously engaged in search for new resources of competitive advantages which historically depends on multi-factors like quality, time delivery, reliability, improved customers experience and cost effectiveness (Burgess, Singh and Koroglu, 2006). The modern business community has seen the evolvement of sustainability as a major factor and a competitive advantage. The financial, environmental and social aspects of sustainable development have become an important competitive factor as governments, industry bodies and society put presser on firms to demonstrate their commitment to sustainability (Firouzeh *et al.*, 2017). Businesses help to ensure sustainability through integrating inter-organisational processes into a supply chain and create a more sustainable supply chain. A critical element of SSCM is collaboration which demands aligned to open communication, sharing of resources and risks and rewards (Kakabadse, Rozuel and Lee-Davies, 2008; Varsei *et al.*, 2014). Management who are embracing sustainability designs measurements and rewards systems linked to employees' behaviours to sustainable outcomes (Pagell and Wu, 2009). With the increasing recognition of the notion of sustainable development, which attracts attention to 'meeting the needs of the present generation without compromising the ability of future generations to meet their needs' (WCED, 1987), focal companies are now required to handle responsibly the results of their operations on the environment and community (George, *et al.*, 2016). Such expectations have dropped more massively on environmentally delicate industries, such as organisations within the oil and gas industry (Deegan and Gordon, 1996). The oil and gas industry are the spine of global economic progress but also known for destroying the environment, damaging habitats and negatively affecting the livelihood of communities living near industrial operation sites. With growing attention on the industry arises enhancing sustainability examination associated to engineering, as well as scientific and technological advancements, such as innovation in oil enhance recover (OER), water and carbon technology (George, *et al.*, 2016). Moreover, in the recent few decades, oil and gas companies' marketing campaigns and corporate reports have been implicated of 'greenwashing' (Pulver, 2007:45), and attention has been raised over their sustainability policies, strategies and practices (Wagner and Armstrong, 2010). Therefore, what are the

enablers (drivers), the barriers (hindrance) to, and of, sustainability practices are and how these factors may be integrated in the organisation's particular route to sustainability.

Firouzeh *et al.*, (2017) argue researchers have already identified several drivers for and barriers to successfully implementing SSC. For example, Wan Ahmed *et al.*, (2016), using political, economic, social, technological, environmental and legal (PESTEL) model to identify the external factors that could influence the O&G industry's supply chain sustainability, argued six external factors are driving O&G sustainability; political stability, economic stability, regulations, stakeholder pressure, competition and the energy transition. Therefore, it is paramount to understand and embrace drivers and overcome inhibitors to achieve a sustainable performance. The list below highlights some of the drivers and barriers highlighted by the literature.

3.7.1 Regulatory framework

The literature advocates sustainability policy which requires compliance from a firm and allows supply chain to operate more sustainably is a driver for SSCM (Müller and Seuring, 2008; Broman and Robèrt, 2015; Wan Ahmed *et al.*, 2016). At the same time, the changes in the laws and regulations governing the environment, together with growing pressure and demands from stakeholders have resulted in companies developing greater environmental responsibility in recent years (Mendes *et al.*, 2014).

Müller and Seuring, (2008) in a literature review, regarded that regulation as an essential driver of SSCM practices and most cited by scholars in SSCM. However, Wan Ahmed (2016), in a similar study, noticed regulation as the second least significant force in driving sustainability performance. This is somewhat like the finding of Sharma (2001), who argued that other external factors, such as stakeholder and market pressure, are more critical in driving environmental sustainability. Research on regulation and governance implies that a hybrid of public and private interventions is seen as necessary to enhance working conditions and ecological standards within global supply chains (Locke, Rissing and Pal, 2013).

Harvey and Bice, (2014) further illustrated that the extractive sector, in general, has encompassed social responsibility. However, broad-based support for many extractive projects and operations remains obscure and often opposed by community, even where compliance-based social impact assessments (SIAs) and generous benefits by the industry are in place. Aragón-Correa and Sharma, (2003) further suggests that the cost of non-compliance to regulation can subject the industry to costly sanctions and fines, as well as community backlash that could damage the focal firm’s reputation and disrupt operations locally and globally. Armstrong and Wagner, (2010) see the society and governments concern about the consequence of carbon emissions on the environment as one of the most complex challenges that the O&G has to address. They argue that the industry suffers the demand to meet current and future requests of doing business in a world increasingly characterised by carbon-related limitations, limits on access to and developments in socially and environmentally delicate areas, and a steady rise in regulation, policy and standards development, litigation and stakeholder expectations. These difficulties are pushing evolution of industry most beneficial practices for social and environmental performance. However, governance matters present challenges to implementing best practices and maintaining key environmental and social risks very complex in diverse regions of the world. Despite the introduction of carbon market under the Kyoto protocol, the regulatory uncertainty and variations among countries poses a significant challenge for the industry to plan and manage. Although some scholars like Ford,

Steen and Verreynne, (2014) argued that collaboration among supply chain members through technological innovation might help the focal companies in mitigating that risk. Although regulation is critical in driving compliance and innovation toward a technological solution for environmental protection, in some context, might not be the most driver. On an industry-level, Thurner and Proskuryakova, (2014) studying the oil and gas industry in the Russian economy found that management's initiatives drive companies' enactment of greener production technologies and are much more prominent than the government regulation. They further assert that focal firms influence government regulation and thereby driving green production in the Russian economy. However, Liu *et al.*, (2017) further confirm that environmental regulations are still the main drivers for sustainable performance in the extractive industries.

It is also important business are educated and made aware of the rules and what need to do to perform sustainably. Businesses are encouraged to pursue profits and reduce the harm to people and environment (Silvestre, 2015). However, lack of framework coupled with additional uncertainties and complexity of the stakeholders is a barrier to sustainability. Emerging economies are more prone to such difficulties (Silvestre and Dalcol, 2009; Silvestre and Neto, 2014). Therefore, the regulatory system is considered is a driver and factor for sustainability adoption by focal firms in driving sustainability performance.

3.7.2 Stakeholder

Stakeholders are groups or persons that may be served or harmed by firm's actions or inactions, which may include governments, political groups, communities, investors, suppliers and competitors (Donaldson and Preston, Lee, 1995; Bocken *et al.*, 2014; Harvey *et al.*, 2017). In the evolvement of the stakeholder theory, Freeman, (1984) appraises the existence of a relationship between firms and different groups besides the shareholders and suggests that stakeholders can continuously influence or be influenced by the focal firms' actions and practices. Garcés-Ayerbe, Rivera-Torres and Murillo-Luna, (2012), further suggest that companies will grow more proactive in environmental strategy when they observe immense stakeholder pressure. Moreover, Carroll states "there is a natural fit between the idea of corporate social responsibility and an organisation's stakeholders" (Carroll, 1991:43). Hence, scholars argue that the strength and commitment of the main stakeholders in the industry drive better and more inclusive CSR practices and reporting. Increasingly more companies in the O&G industry are engaged in corporate social responsibility (CSR) practices to address stakeholder concerns (Frynas, 2005; Hilson, 2012). However, Frynas, (2005) noticed that the impact is philanthropic and often short-lived and associate that to lack of focal firms involvement of their CSR beneficiary, mostly local community) in the CSR program development. Mitchell, Agle and Wood, (1997) state that stakeholder power, legitimacy and their claim urgency determine the degree to which focal companies leadership and managers prioritise competing stakeholder claims and priorities. Fernandez-Feijoo, Romero and Ruiz, (2014) indicate that the pressure of notable stakeholders decides the expected level of transparency of the corporation sustainable reporting. They further suggest that the pressure of certain groups of stakeholders like clients, customers environments groups and employees enhance the quality of transparency of the focal firm sustainability reports. Yoo, Taeyoung and Nam, (2015) further suggest that consideration should be given to the relationships among focal firms and their stakeholders and further recommend that systems of accounting should encompass not only the profits of firms and their subsidiaries but also those of other stakeholders including suppliers. Therefore, the level

of company engagement with a stakeholder group and the pressure they exert on the focal company is a driver for sustainability practices and reporting.

3.7.3 Energy transitions

Contemporary societies confront significant sustainability problems in various domains, such as transportation, energy and food. Technological fixes have so far presented only temporary and incomplete solutions due to contradictory externalities, rebound effects or other unintended outcomes. Some solutions augmented technological and institutional lock-in, thus reinforcing enduring systems. It has, therefore, been recommended that societies necessitate to radically restructure systems of production and consumption by starting so-called sustainability transitions (Farla *et al.*, 2012). Sustainability transition could be explored from both neo-classical and strategic prospective. In a neo-classical view, externalities such as producers causing negative effects and environmental problems are often not manifested in the price of goods and services (Geels, 2005, 2010). To spur transitions in sustainable directions, neo-classical economists, therefore, argue that the circumstances under which the markets operate should be adjusted (Gerlagh *et al.*, 2004). Governments can approach market failures with policy instruments such as environmental taxes, subsidies and tradable permits. In addition, the internalisation of environmental costs leads to price changes that will consequently lead to further investments in R&D and capital investments that will transform economic structures in a more sustainable way. On the other hand, the strategy literature views sustainability transitions as strategic dilemmas for firms, who have to balance the risks and opportunities associated with huge investments. This often results in firms postponing 'green' capital investments due to future uncertainties in government regulations, price variations, the degree to which environmental concerns render into a willingness to pay more for green products, and the rise of 'green' markets (Rugman and Alain, 1998). Therefore, firms might defer investment on green awaiting clarity from governments or market appreciation for green products and services. However, leaders on 'green' technology may also avail benefits from such advancement in a form of brand recognition, a creation of market positions, technology lead, and the creation of patent barriers that create favourable positions in future 'green' innovation races (Geels, 2011). Firms that become a 'green leader' may also influence policymakers to issue stricter policy and regulations and thus impose imitation costs on rivals (Kramer and Porter, 2011). Environmental sustainability thus forms a dimension of strategic and competitive contests. Therefore, sustainability transition in driving factor in focal firms strive for sustainable supply chain performance.

3.7.4 Standards

As discussed previously, stakeholders' pressure appears to serve as an authoritative source enforcing firms to consider and adjust their externalities. This pressure could be originating from both the primary and secondary stakeholder groups, and stakeholders use different methods to drive the uptake of environmental and social practices to drive sustainable performance. For example, primary stakeholders, such as business associates, may mandate healthy green pro environmental practices from their suppliers. Secondary stakeholders, such as industry watchdogs and NGOs, may apply media to arrange boycotts of firms and to stalk negative media campaigns on polluting firms and supply chains members (Chaîneau, Miné and Suripno, 2010). The United Nations Conference on Environment and Development (the Earth Summit) in 1992 realised the need for businesses to advance in environmental stewardship exceeding national regulatory requirements. In answer to this, a non-governmental organisation that formulates management and technical standards called the

International Standard Organization (ISO), in 1995 interjected the ISO 14001 environmental standards. The ISO 14001 standard expects participants to install the Environmental Management System (EMS) that is valid externally. Participants are expected to pass a primary certification audit, and succeeding annual recertification audits carried by licensed and accredited third-party organisations (Mustapha, Ezenwaka and Amadi, 2014).

In acknowledgement to pressures from primary and secondary stakeholders, firms approach environmental issues and usually opt to explore independent third-party certifications to achieve independent verification of their environmental protection effort (Castka and Prajogo, 2013). Regulation, in the formation of normative environmental legislation, constitutes the bedrock of both EU environmental policy and many national systems, whereas self-regulation is a moderately new addition to the suite of instruments used to manage industrial environmental impacts (Hillary and Thorsen, 1999). The appropriation of Environmental Management Systems (EMS) standards such as ISO 14001 and European Eco-Management and Audit Scheme (EMAS) has achieved substantial drive in the last decade (Testa *et al.*, 2016). Others consider the independent third party certification as a useful governance tool to control for unobservable practices of firms, such as environmentally and green practices (Castka and Prajogo, 2013). Testa *et al.*, (2016) in their study of the adoption of the environmental management system (EMS) and ISO like 14000 in the EU, confirms that the intensity of environmental certifications is higher in sectors with the most prominent in more polluting industries with high environmental impact, but differed in intensity between states. They associated that to the heterogeneity concerning regulatory and incentives aid for EMAS enrolled organisations. The ISO 14001 standard, describes the EMS as "the part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy" (International Organisation for Standardisation, 2006, Article 3). The implementation of ISO 14001 and EMAS standards is therefore deemed to enhance environmental practices and organisational environmental performance, reputably for organisations considered as particularly polluting (Sambasivan and Fei, 2008). Standardised EMSs also provide the emergence of a more compliant policy instrument(s) for the implementation of optional EMS (Hillary and Thorsen, 1999; Hojnik and Ruzzier, 2016; Testa *et al.*, 2016). Testa *et al.*, (2016) argue that the achievement of standards relies on their very flexible provisions. Contradictory to the conventional command and control approach like states regulations and like the EU environmental Directives and Regulations which incorporates orders, permits, and licensing. The optional adoption of standardised EMSs is often regarded as a self-regulatory mechanism and tools especially companies adopting ISO 14000 in countries with weak environmental regulatory systems can indicates environmental stewardship and enhance international investors interest in less developed economies (Berliner and Prakash, 2013). This self-regulatory mechanism is generally associated with the certification process through external auditing, which primarily concerns the first two certifiable EMSs standards (Testa *et al.*, 2016).

ISO 14001 has grown to be the most popular and commonly used international standard for performing EMSs universally, and many companies, including oil and gas all over the world, are ISO14001 certified than EMAS registered. Therefore, it can be suggested that companies in sectors with greater environmental impact are more likely to choose EMSs based on international standards such as ISO 14001 and EMAS, as they can achieve more significant internal benefits. Consequently, as stressed by (Lagodimos, Chountalas and Chatzi, 2007), it can be concluded that focal companies in oil and gas with environmentally hazardous

materials and processes striving to achieve higher environmental performance and improve corporate image should be the superior users of the standard like ISO 14000. Tammela *et al.*, (2014) further argued in the oil and gas industry in Brazil adoption of an environmental management system has contributed to better environmental performance. Therefore, standard like ISO 14000 is a drive factor in sustainable performance within industry and among supply chain networks.

3.7.5 Social Media

The emergence of social media like the Facebook in 2004, YouTube in 2005, Twitter in 2006 and recently Instagram and WhatsApp as well as other social media sites, has caused an exceptional wave of environmental and social backing and news broadcasting (Cox, 2013; Nwagbara, 2013). It is the unfettered reach of social media bringing changes of perception about environmental issues in many places around the globe — for example, in the Niger Delta social media is democratising information dissemination and sharing beyond expectation (Kperogi, 2012). It is the connection social media offers by its unfettered access by which people "connect to the world and other people" (Lanier, 2010:6). Lanier indicated social news sources, mobile apps and online streaming are ways that individuals are increasingly accessing environmental information or stories promptly for timely intervention.

Examples of social media's role in driving sustainable behaviour from multinational companies (MNC) are many. In Nigeria for instance, MNCs like Chevron, Shell and Agip have received an outraged cry through online from NGOs and earth environmental rights action for their neglect of the environment, ecological pollution and human rights abuse (Nwagbara, 2013). The Nigerians used social media to engage with an economic, socio-political and environmental issue similar to people in Middleast during the Arab spring in organising, motivating, and informing each other of events across the country (Egbunike, 2015).

3.7.6 Transparency

Transparency is a concept associated usually to reporting, and especially to sustainability reporting (SR) (Veldhuizen, Blok and Dentoni, 2013). It is also a character of a corporate social responsibility report that improves the relationship between the company and its investors. Organisations globally are continuously highlighting the necessity of transparent reporting to all stakeholders generally and to the society, especially (Fernandez-Feijoo, Romero and Ruiz, 2014). Fernandez-Feijoo, Romero and Ruiz, (2014) claim that the pressure of significant stakeholders determines the required level of transparency of corporate reports and improves the quality of transparency of the reports. They further add the type of industry is normally described as affecting CSR declaration, particularly in industries with bigger operation and further suggest the influence of external pressures as a driver for transparency in CSR reporting.

From supply chain prospective, Pagell and Wu, (2009) argue that transparency and knowledge sharing among SC members is a novel form of information sharing practices in SSCM. Demanding suppliers to disclose materials used in production processes is a kind of risk mitigation for a more sustainable behaviour. Such transparency entails firms report to and actively engage with stakeholders to enhance SC performance and better horizontal integration among the network (Carter and Rogers, 2008). Therefore, transparency is an important factor in firm's sustainability drive and performance measurement.

Another example is the Deep Horizon oil rig explosion in 2010 let to killing 11 people and spewing oil into the Gulf of Mexico and resulted in a massive social campaign which drove the CEO of BP to resign (Gilroy, 2011; Cox, 2013). Environmentalists and supporters of sustainable development recognise the significance of effective communication in presenting scientific verdicts more significant and impactful for a broad audience (Munton, 1997). The literature shows driving demands for strategies to communicate sustainability in diverse contexts, such as in business (Kim and Chang, 2012; Rettie, Burchell and Riley, 2012; Siano and Sarno, 2016). The ultimate purpose of such communication is to improve behaviour by a better and shared understanding. However, others argue that firms also used social media to disseminate and market sustainability awareness but not necessary practices. For example, Gill, Dickinson and Scharl, (2008) examined the sustainability disclosure of oil and gas industry across Europe, North America and Asia employing automated web content technology and report that while firms manifest awareness of sustainability reporting, they did not significantly practice it. Tseng, (2017) further confirms that social media is widely used for sustainability advocacy. Therefore, in the modern age of instant sharing, social media is a powerful platform for social activism and a driver for sustainability.

3.7.7 Leadership Commitment

Leadership within organisations can be in many patterns, as was discussed by Bass *et al.*, (2003), leadership theory in an attempt to achieve a wide spectrum of leadership characteristics anticipated to have a presence on employee commitment. The full-range leadership theory differentiates between three general styles of leadership: transformational, transactional, and laissez-faire. The detailed description of those type of leadership is beyond the scope of this study; however, their impact on sustainability performance will be touched on. Transformational leadership is typically described and operationalised in terms of idealised influence and charismatic behaviours expressing a leader's ethical orientation, beliefs, values, a sense of purpose and mission. Also, more of inspirational motivation involves inspiring followers to aim for challenging goals, while showing confidence that they can accomplish those goals.

The second broad category of leadership recognised as transactional leadership and mostly known for management-by-exception active and contingent reward. Management-by-exception (MBE) suggests engaging with followers only when they cause errors, for the intention of changing their behaviours (e.g., corrective criticism, negative feedback). The contingent reward suggests rewarding staff for attaining agreed-upon objective tasks. This behaviour can germinate an energetic form where leaders constantly monitor follower behaviour for mistakes or a passive form that requires taking corrective action only when blunders are drawn to a leader's attention. On the other hand, the laissez-faire shows a total disengagement from staff, with low leadership and lack of feedback and inforcement. Driving sustainable performance within company boundaries and beyond will require a more transformational leadership drive to form creative solutions to the sustainability problems (Bass *et al.*, 2003). Jackson, Meyer and Wang, (2013) argue that transformational leaders motivate company employees by emotional charisma and the formulation of a compelling vision and mission. They stimulate employees to transform their personal attention and to work together in the best interests of the team and organisation (Bass and Avolio, 1997). They may also instil in employees a sense of obligation to reciprocate for the positive treatment they receive (Bass and Riggio, 2006).

SSCM involves leadership decisions and managerial orientation and behaviour that are designed and embedded to ensure that SC performs well and sustainably (Pagell and Wu, 2009). Literature is fully embracing the need for pro-activeness and commitment of business leadership. Pagell and Wu, (2009), Walker and Jones, (2012c) and Harms et al., (2013) all argue that sustainable practices implementation is proactively lead by strong leadership commitment. Also, proactive approach to SSCM and supplier management enhance companies positions in developing sustainable products and supply chain (Müller and Seuring, 2008). Mutual learning processes in organisations and clear strategy lead by the leadership encourages employees to follow-suite and advocate further for sustainability (Wan Ahmed, 2016). Sustainability will flourish and grow when employees are having a way of thinking that sustainability compatible with business goals and part of the day to day conversation and non-economical components of sustainability are shared among all functions (Pagell and Wu, 2009). Therefore, sustainability becomes integrated into the organisation when the managerial orientation and innovation capability are developed. Hence leadership commitment is a driving factor in sustainability performance.

3.7.8 Organisational Culture

Culture is a multifaceted construct that has been described in various forms. House *et al.*, 2004:15) defined it as "commonly experienced language, ideological belief systems which includes religion and political belief systems, ethnic heritage, and history." Others focused on two widely accepted dimensions of culture: individualism-collectivism and power distance/hierarchy (Jackson, Meyer and Wang, 2013). Individualism mostly refers to "a loosely-knit social framework in which people are supposed to take care of themselves and of their immediate families only"; collectivism displays a wider context "a tight social framework in which people distinguish between ingroups and outgroups, they expect their ingroup to look after them, and in exchange for that, they feel they owe absolute loyalty to it" (Hofstede, 1980b:45). On the other hand, power distance relates to the degree to which a community accepts and endorses authority, power differences, and status privileges (Waldman *et al.*, 2006). Schwartz and Carroll, (2003) further applied the term hierarchy likewise to point to the acceptance of diversity in state and power over social roles and enthusiasm to comply with the obligations and rules connected with those roles.

A supply chain network with multiple organisations combined, coordinated and structured involves more people with complex human relations, and behavioural issues are therefore highlighted (Silvestre and Dalcol, 2009; Jabbour and De Sousa Jabbour, 2016). Hence, a human resource management HRM can have a positive influence on SCM (Gowen and Tallon, 2003). Also, an organisational culture is a major internal enabler for SSCM practices (Walker and Jones, 2012). Carter and Rogers, (2008) suggest that organisations culture is the facets that support SSC practices. Therefore, the development of organisational culture that promotes sustainability action and willingness to transparency business conduct is a step forward in sustaining sustainability. Sustainability culture through monitoring encourages firms to adopt more socially responsible supply chain practices (Frankel and Mollenkopf, 2015). Companies that imbed sets of values that define their sustainability principals, shape business models and guided decision-making are among best sustainability performers (Pagell and Wu, 2009). Therefore, the organisational culture is a factor and driver for sustainability performance.

3.7.9 Sharing Economy

The sharing economy had had a significant influence on the industry, labour, and the distribution system (Ferrell, Ferrell and Huggins, 2017). The title sharing economy, collaborative consumption or peer to peer or person to person (P2P) and piecemeal labour indicates to an economic model that includes creating access to underutilised resources (Singer, 2014; Cohen and Sundararajan, 2015; Pouri and Hilty, 2018).

Others associate it by the term "gig economy" referring to a job position where individuals shift from one project to another rather than endeavouring permanent employment (Cohen and Sundararajan, 2015). Digital connections facilitate the gig economy through application software called "apps" developed particularly for usage on wireless computing machines. Many countries started to define such shift; for example, the department of commerce in the US describes these firms in sharing-economy space as digital matching firms (Schor, 2017). Although the debate for the definition of the gig economy is ongoing, the terminology is used widely (Ferrell, Ferrell and Huggins, 2017). Associates in the gig economy are micro-entrepreneurs or small-scale businesses with no more than five workers and predicted that 95% of small enterprises are micro-businesses (Clawson and Clawson, 2017; Payton, 2017). Others associated it to sustainability as a practical choice to ownership (Belk, 2007; Weber 2014), some associate sharing products and services in the sharing economy as an evolvement of disruptive technologies (Danneels, 2004). Danneels defines the process as a "technology that changes the bases of competition by changing the performance metrics along which firms compete"(Danneels, 2004:249).

There is no doubt that apps and social media that link businesses and consumers with instantaneous information about the availability of products and the location and provide platforms to defeat normal conditions, and fixed location barriers of traditional distribution systems have also contributed to the growth of the sharing economy (Ferrell, Ferrell and Huggins, 2017).

Social media and apps that connect consumers and businesses with instant information about the location and availability of products and services provide platforms to overcome temporal limitations and fixed location barriers of traditional distribution systems (Ferrell, Ferrell and Huggins, 2017). Recently the application of sharing systems has gown wide and broad, covering a vast range of services from medical, accounting, riding and sharing car and bicycle and the bulk of people appear to see the sharing economy favourably. According to Smith (2016), ridesharing services are growing usage, with 15% in America, and nearly 72% of Americans have utilised some sort of shared or on-demand service with almost 71% of positive experience (Smith, 2016). The growth of the percentage of the sale through such platform is showing prevalence. Huws, Spencer and Joyce, (2016) states that the entrepreneurial perspective of the sharing economy is very progressive as one-third of sellers in the sharing economy perform more than 40% of their revenue from such platforms. Steinmetz further adds that about 86% of those who engaged in a sharing- economy transaction consider that the sharing economy presents more affordable life than the conventional processes, and almost 78% of consumers believe that the sharing economy reduces waste. However, the same optimism is not shared by all as some view relying upon independent contractors causes variation in the service with almost 72% to believe the sharing economy is not uniform (Steinmetz, 2016).

Therefore, the sharing economy has evolved and has included commercial sharing that is market engineered to render product benefits without ownership, but the government and regulatory institution must manage the deployment of this business model. For example, in the USA, the Internal Revenue Service has published tax rules for independent contractors utilising the sharing-economy descriptions on their Sharing Economy Tax Center website (Internal Revenue Service, 2017). On the other hand, another agency in the US like the Department of Commerce strives to narrow the locus to digital-matching firms with companies such as Craigslist: firms that facilitate this interaction without a monetary transaction, such as Freecycle and Couchsurfing, are seen as outside the digital-matching firm description (Ramirez, Ohlhausen and Mcsweeny, 2016).

Ferrell et al. (2017) examined how the sharing economy is confronting conventional marketing channels, and supply chains sustainability strive and made six observation and provided a conceptual framework. They argue that sharing economy is transforming the universe of the concept of employment, access and ownership and the regulatory, legal and ethical environment of the sharing economy is evolving with links that produce the need to reduce risks for all involved stakeholders. From a risk perspective, they explain that till the demand within the sharing economy progresses significantly to catch up to the oversupply of sharing possibilities, product insufficiency will not be a substantial risk concern. However, risks associated to the lack of training that many sharing-economy companies need of their service providers, as well as the potential for insurance liability associated to any damage to personal products provided (e.g., bikes, automobile, home, boats, tools, etc.), are substantially viable and immediate risk concerns for members in the sharing economy.

Focal companies considering enhancing their social sustainability need to consider the shift in society, especially among the Millennials. As Millennials rush into the sharing economy, they appear less enthusiastic in ownership than earlier generations and more enthusiastic about sharing (Van den Broek, Dykstra and Schenk, 2014; Bernardi, 2018). Research suggests that consumer purchase behaviour is evolving with the capability to monetise underutilised resources (PricewaterhouseCoopers, 2015). For example, most people only use their car for about 10% hence the car is potentially available to be utilised by others as owning and preserving is not as necessary as transforming ownership into an economically viable venture. Therefore, shifting attitudes toward ownership could influence our economy in various ways, and focal companies need to adjust their purchasing systems to accommodate that and allow the expansion of competitive boundaries. For example, they might allow their staff to utilise more Airbnb versus standard hotels accommodation and allow Uber versus company cars. This is a similar process shift created in the automotive industry by the introduction of just in time (JIT) and other quality enhancement system as the concept of ownership starts to lose its meaning when most physical products and services can be accessed just in time as the psychological delight and rewards from ownership could decrease within our culture. Also, most of current laws and regulations historically emerged around property rights and physical ownership. Private property has long been seen as a critical asset in increasing wealth, income and financial independence. However, the sharing economy now provides access to products the user cannot afford to own (Gonzalez-Padron, 2017), hence the growth is inevitable and focal companies need to embrace it and contribute to its evolvement. The sharing economy is also known for workers without employers who possess flexible agreements as autonomous consultants or contractors and research advocates it is rising from 15% in 2015 to 40% in 2020 in the USA alone (Liu, Feng and Wang, 2019) and rose by 2.1 million between 2010 and 2014 (Rinehart and Gitis, 2015). According to Friedman, (2014), they are young, well educated, advanced in technology uses, task-oriented

and committed. However, some independents contractors like Uber were met with legal challenges. If lawsuits proceed to classify independent contractors in the sharing economy as employees, companies such as Uber might likely have to give up some control to their independent contractors and allow them to run their operations as they see fit. Although some might argue that the personal transportation industry was never built around employees even before Uber as the broad majority of taxi drivers in most cities operate as an independent contractor. Other independent contractors in the sharing economy like Airbnb, has grown a friendlier relationship with regulators through paying hotel taxes to the towns where it runs, and cities seem to be more welcoming to sharing-economy firms that are prepared to compromise (Chafkin, 2016). Therefore, the focal companies in the oil and gas industries with purchasing power need to accommodate the growing trend in sharing economies and develop its industry code of practice to embrace it as an enabler for sustainability purpose especially in developing economies where the regulatory system is lacking, and the room for hidden entrepreneurship is high. Oil and gas industry might capitalise on the efficiency of the sharing economy in cocreating multiple systems and activities associated with supplying chain management. Further adaption for information technology will provide for the supply chain to be more efficiently performed under the unified supervision of leader-facilitators and reduces costs and places the sharing-economy business model with a more competitive advantage to enhance social inclusion. Other industries like Walmart in grocery and Hugo Boss in the clothing industry already embraced the sharing economy to deliver their goods and services (Ferrell, Ferrell and Huggins, 2017). In the retailing business of the oil and gas, sharing-economy companies can facilitate and expedite distribution, rendering services that do not need additional resources for retailers. The industry could also use shared economy in inventory management, and warehousing. For example, Airbnb has a higher inventory of rooms than Hilton worldwide and cost them nothing if unoccupied but not the same for Hilton. However, it seems that most sharing-economy companies such as Uber and Lyft despite their size and success still have not established sound codes of ethics and cultures to manage ethical risks (Gonzalez-Padron, 2017). The O&G industry can grow the sharing economy because it has the experience in developing good management system like the HSSE, and it can also mitigate risks associated with such ethical values to further develop the system to adjust for the eventuality of risks and create an ecosystem to assure risk is mitigated to the term widely used by the industry based on the managing risk as low as reasonably practicable (ALARP).

3.8 CORPORATE STRATEGIES AND SUSTINABLE PERFORMANCE

Previous research in business strategy suggested that production processes were used to improve total socio-economic welfare and that resources to be used for comprehensive social ends, not the sole self-interests of the firms (Angell and Klassen, 1999). This approach pointed out that research towards environmental influence is a critical indicator of corporate social performance (Carbone, Moatti and Wood, 2012). Early on, Carroll, (1999) recognised that four management values mainly economic, legal, ethical, and discretionary, might affect the approach used by business leaders on environmental issues. Wilson's outline of strategy is widely accepted for managerial approaches and hold full acceptance amongst scholars in the area of sustainability and CSR (Roome, 1992; Azzone, Bertelè and Masella, 1993; Henriques and Sadorsky, 1999; Buysse and Verbeke, 2003). He outlines reactive, defensive, accommodative, and proactive aspects of responsiveness (Schaltegger, Lüdeke-Freund and Hansen, 2012), a continuum which was later named by Henriques and Sadorsky, (1999) the "RDAP scale". However, the scale was criticised by Schaltegger, Lüdeke-Freund and

Hansen, (2012) for entirely neglecting environmental and social issues at the reactive stage and advocated that only the three strategies namely defensive, accommodative, and proactive could be considered helpful in explaining strategy and the business case for driver interrelations. Other researchers also maintained the belief that a firm's bearings toward environmental management impact range within a strategic spectrum, ranging from reactive to proactive approach (Dillon and Fischer, 1992; Muller and Seuring, 2008; Arjalies and Mundy, 2013; Lisi, 2015). Gosling et al. (2017) further highlighted three types of strategies and called them reactive, contributive and proactive. Others choose to call them as steps in the developmental maturity, arranging from naive to sophisticated (Hunt and Auster, 1990; Marguglio, 1991). The literature further argued that the consequences for the corporate performance of a proactive or sophisticated environmental management strategy had been explored by many, but with mixed results (Klassen and McLaughlin, 1996)(Russo and Fouts, 1997). The researchers, therefore, began to focus on environmental management in the resource-based view of the firm. Such strategic and firm-specific resources are associated with proactive environmental management, such as continuous improvement and engaged stakeholder management (Hart, 1995). As proactive strategies emphasise radical changes to the core business logic of the focal firm, a significant number of business model elements will be affected by sales and profits. Therefore, it is necessary to elaborate further on the type of strategies adopted by firms in driving sustainability performance next.

3.8.1 Reactive strategy

Resource dependency theory presents alternatives to firms for reducing environmental risk in order to satisfy the sustainability internal and external motive (Oliver, 1991)(Gresov and Drazin, 2016). According to this theory, firm responses can be distinguished depending on whether they are external (buffering) or internal (bridging) to a steady exchange relationship and the transformation of the existing firm (Carroll, 1993). On the other hand, Talluri et al. (2013) explained that the risk mitigation strategies suitability and effectiveness are conditional on the internal and external environment, which is solidly grounded in the contingency theory. Therefore, the contingency theory has enormous potential to explain the strategic behaviour of the firm towards buyer-supplier risk, and Mishra *et al.*, (2016) suggest that the strategies of (Bode *et al.*, 2011) buffering and bridging are most suitable while coping with business environmental uncertainty. Buffering is argued by Mishra et al. (2016) as one of the most commonly accepted mitigation strategies followed by a firm in sustaining its competitive advantage. It supports the managers in focal companies to defend their supply chain from any interruptions or risk by keeping sufficient inventory. Thus, buffering serves to circumvent unforeseen risks which cannot be eliminated by utilising process enhancement strategies and serves as a shield for an organisation and can be done at varying degrees and levels.

In contrast to buffering, a bridging strategy shields a firm from risk or disturbance by building effective linkages with the trade partners, supply chain members. According to Ulrich, Barney and Barney, (1984), firms involved in bridging may manage or alter the relationship with the trade partners or supply chain member via lawful acts that vary from strengthening the relationships with distinguished people of their partner firms to upward integration to mitigate risks as it is contingent on the external and internal business environment. Flynn and Flynn, (1999) associated bridging to investment in the firm's collaboration or boundary scanning strategies through strengthening information exchanges, use of multifunctional staff and JIT practices to sustain competitiveness further. Therefore, neither buffering nor bridging is intrinsically "good" or "bad." Hence either of the two or a

mixture may be useful, depending on the context the firm finds itself operating in and it strives to mitigate operational risk. Although they may constitute independent approaches, buffering and bridging are not mutually exclusive (Bode *et al.*, 2011). For example, a focal firm may decide to increase its safety stock (buffering), while concurrently practising more reliable information exchange with a trade partner in the supply chain (bridging).

Hillman, Withers and Collins, (2009) based on the work of Salancik and Pfeffer, (1978), looked into the role of resource dependence theory (RDT) in shaping corporate strategies. They argued that firms could act on five options to minimise business environmental dependences: (a) mergers and acquisition through vertical integration, (b) establishment of inter-organisational relationships and joint ventures, (c) enhanced boards of directors content and knowledge in providing both monitoring and resource outline as well as guidance and counselling, channels of information flow, legitimacy and preferential access to resources to company leadership, (d) political action to adjust the condition of the external economic and political business environment, and (e) firms executive succession and counselling towards the changing business environment in related context. Such mitigation strategies might be broad but designed to address risks and context in which the firm operates and further guard business from operational risk or political regimes within host countries. The oil and gas industry and its nature of global operations adopt most of them but for a different context and a different risk mitigations purpose. It is in line of the argument of Salancik and Pfeffer, "to understand the behaviour of an organisation, you must understand the context of that behaviour—that is, the ecology of the organisation" (Salancik and Pfeffer, 1978:1).Therefore, the influence of external factors on organisational behaviour and, although restrained by their context, drive leadership to act to reduce business environmental dilemma and dependence as firms attempt to overcome others' power over them, often endeavouring to enhance their power over others (Hillman et al. 2009).

However, the strategies mentioned above might address firms risks from business continuity but not necessarily sustainability (Schaltegger, Lüdeke-Freund and Hansen, 2012). Furthermore, the deployment of physical and technological assets, inter-functional coordination, organisational culture, and firm's intangible resources drove more interest to political acumen and green customer segments (Russo and Fouts, 1997). Hence, two dominant strategies towards environmental management system emerged; proactive pollution prevention, which relies on strategic resources and whereby can achieve a sustainable competitive advantage; and reactive pollution control, which cannot bestow competitive advantage (Russo and Fouts, 1997).

However, the discussion that embracing sustainable social and environmental policies is competitively disadvantageous to corporation's sustainable performance and has been challenged by Porter and Van der Linde (1995), Shrivastava, (1995), Peloza (2009) and Peloza and Shang, (2011) and others. Shrivastava (1995) argues that corporations place advantages over their rivals by adopting ecological strategies more competitively to guide entries into new markets. It was further argued by Adams *et al.*, (2015) that organisations striving to position themselves strategically focus mostly on innovation activity and operational optimisation within the firm's internal boundaries first. Usually, the principal drivers include the pursuance of efficiency gains through new practice adoption and compliance, reacting to local and international regulatory requirements (Adams et al., 2015).

Therefore sustainability-oriented innovation matures to become more proactive if reactive innovation matures to be uneconomic, for example, when add-on solutions incur a higher cost

than the cost of process redesign (Alston and Roberts, 1999). Therefore, the sustainability outcome from such a strategy is a decrease in harm per unit of production by only using current innovation processes and without compromise to the current enduring business models. Focal firms adopt primarily cost, and efficiency-oriented measures intended for low-hanging fruits and thus only demand moderate (if any) business model changes. Accordingly, firms see sustainability issues as risks heading to protective behaviour, while reputational business elements are rather cosmetic.

Focal companies operating in developing economies need to address such environment in shaping its strategy to react to internal or external drivers. This approach of risk mitigation might be useful in addressing some concerns of sustainability performance, such as safety and may meet some regulatory requirements. However, it is more of a reactive approach and might not be adequate to sustain operational excellence or maintain a licence to operate as the external and internal pressure is intensifying for more proactive engagement with all stakeholders. Therefore, it is paramount to address such an alternative proactive strategy next.

3.8.2 Collaborative and Proactive Strategy

Scholars assert that corporations are more motivated nowadays to proactively blend sustainability matters into a strategy rather than to simply comply with the regulatory requirements (Stern, 1995; Schaltegger, Lüdeke-Freund and Hansen, 2012; Bhupendra and Sangle, 2015; Phan and Baird, 2015; Wijethilake, 2017; Wijethilake, Munir and Appuhami, 2018). The proactive sustainability strategy is fostered by firms to improves corporate sustainability performance by efficient use of resources, reduced waste and discharge, promotion of social reputation, improved customer preferences, and generation of new innovative capabilities and increased cost advantage (Sharma and Vredenburg, 1998; Adams et al., 2015; Bhupendra and Sangle, 2015).

Barney, (1991) argues that the resource-based view (RBV) of the firm proposes that internal resources and capabilities of the firm that are valuable, rare, non-substitutable and unique usually lead to sustainable competitive advantage. However, Hart (1995) highlighed the shortcomings of the RBV in seizing the resources and capabilities that drive a competitive advantage when corporations associate with the natural environment like oil and gas and mining and propose a natural resource-based view of the firm. Hart (1995) stresseed that “it is likely that strategy and competitive advantage in the coming years will be rooted in capabilities that facilitate environmentally sustainable economic activity a natural resource-based view of the firm” (Hart,1995: 991).

The natural resource-based view (NRBV) of the firm suggests three interconnected strategies that drive sustainable competitive advantage: pollution prevention, product stewardship, and sustainable development (Hart, 1995). The pollution prevention strategy strives to deter emissions and waste throughout the production process rather than cleaning waste post-event, which ultimately links with decreasing product and service costs of the focal firm (Hart, 1995; Hart and Dowell, 2011). Product stewardship strategy further extends the pollution prevention strategy to the whole product life cycle, which includes all firm’s stakeholders. It formulates a better sustainable competitive advantage by strategically limiting the negative impacts of environmental matters (Hart, 1995; Hart and Dowell, 2011).

Kristel and Alain (2003) argued that many simultaneous developments in various resource domains are needed for firms to move to a higher level of proactiveness and more proactive

environmental strategies are associated with more profound and broader coverage of stakeholders. Carter and Rogers further emphasised the systematic coordination of the three elements of sustainability and defined SSCM as: "The strategic, transparent integration and achievement of an organisation's social, environmental, and economic goals in the systemic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual company and its supply chain" (Carter and Rogers, 2008: 368). The definition is an attempt to explain the relationship between sustainability and SCM and strategically integrate them for better sustainable performance.

It also brings the role of the focal companies in driving sustainability performance in a proactive strategic way. Therefore, a sustainable development strategy, which recognises all aspects including economic, environmental and social sustainability, concentrates on sustaining environmentally friendly production processes for an unlimited future (Hart, 1995; Hart and Dowell, 2011). This strategy tries to achieve sustainability that serves stakeholders in less-developed countries and mostly contributes to the product life cycle by multiple means (Hart, 1995; Hart and Dowell, 2011). Focal companies operating globally or through joint ventures need to consider more long-term perspective for better sustainability performance. This is in line with Hart (1995) claims "firms (either multinational or local) that are focused on generating short-term profits at the expense of the environment are therefore unlikely to establish long-term positions in the developing world" (Hart,1995: 997).

Torugsa et al. (2013), and Wijethilake (2017) in their strive to develop a comprehensive sustainable model incorporate all three strategies considered in the NRBV of the firm and examined proactive sustainability strategy in terms of economic, environmental, and social strategy and conclude that a proactive sustainability strategy is positively correlated with sustainability control systems (SCS) and corporate sustainability performance. According to Bansal (2005), the sustainable economic strategy involves the "creation and distribution of goods and services … to raise the standard of living around the world" (Bansal, 2005:198). Steurer *et al.*, (2005), further highlight the economic sustainability strategy encompasses financial and long-term competitiveness and sustainable performance. Value creation is a function of products and services, and thus, the effectiveness and efficiency of products or services improve created value.

The environmental strategy assures that human activities do not harm the land, air, and water resources (Bansal, 2005; Torugsa, O'Donohue and Hecker, 2013). Firms striving to reduce their ecological impact employ environmental management strategy to decrease the size of their environmental footprint by blending environmental attentiveness into daily operations (Steurer et al., 2005; Torugsa et al., 2013; Wijethilake, 2017; Wijethilake et al., 2018). Further, more firms need to address the social aspects of their operations to perform sustainably. Adopting a social strategy ensures the similar rights of members of society and supply chain partners to access resources and opportunities (Bansal, 2005; Torugsa et al., 2013). Perspectives of social sustainability strategy might include equality inside the focal firm, internal social improvements, local and international equity among suppliers and external social improvements for society at large (Steurer and Martinuzzi, 2005). Leadership is growing a better understanding of the need to amalgamates all aspects of sustainability strategies to enhance a proactive sustainability strategy adoption. Roome (1992) claimed that the requirements for sustainability could not be reached solely by compliance and that leadership-oriented action is needed.

The growing presence of corporates representation throughout three Earth Summits implies that some corporate's leadership are supporting sustainability adoption (Adams et al. 2015). The oil and gas sector are also showing a keen interest in developing a more proactive approach to offset the rise of critics. Wan Ahmed et al. (2016) highlighted the fundamental importance of supplier and logistics management to the achievement of sustainable O&G supply chains. However, it was argued that the industry must cultivate an organisational culture that supports sustainability performance through proactive behaviour and team collaboration and discovering innovative sustainability answers in order to translate a dedication to sustainable practices into activities that can produce an actual distinction to their SSCM practices. Therefore, this leads to the next section of developing a further understanding of how the focal company can develop a better and more engaged strategy based on shared value with its stakeholders. This is the argument for the next section.

3.8.3 Shared Value Strategy

Firms are considered agents that transform natural resources into desirable products or services. They are well established to achieve ecosystem resource-preservation strategies (Shrivastava, 1995).
The natural- resource-based industries and energy industry, for example, can perform a valuable role in preserving ecosystems through conservation and resource-renewal strategies (Starik and Carroll, 1991; Stead and Stead, 1992). Civil society and social movement and research organisations can also shape corporate strategies towards sustainability (Penna and Geels, 2012). The previously mentioned reactive and proactive strategies so far have fallen short from creating the radical shift that humanity needed to sustain our existence on planet earth. Corporate leaders have realised that social problems manifest both daunting limitations to their operations and boundless opportunities for economic growth (Pfitzer, Bockstette and Stamp, 2013).

However, many are grappling with implementing the shared value concept of sustainability. Pfitzer, Bockstette and Stamp, (2013) studied more than 30 companies in the US supply chain that, innovate to create scalable models for delivering social benefits and business value. They have observed that these companies consistently rely on five reciprocally reinforcing factors, whose optimal form and balance depend on a firm's context, culture and strategy. They further argued that creating shared value requires installing a social mission in the corporate culture and routing resources to the development of innovations that can improve solving broader social problems.

Therefore, a shared value strategy needs a more innovative business model centred around people and the planet. Concerns from climate change and the rise of earth temperature is driving many, especially the young generation, to repel the statuesque (Sengupta, 2019). There are new terms starting to exhibit a shift and use concepts like prime movers (Jacobsson and Johnson, 2000), system builders (Hughes *et al.*, 2005) or change agents (Rogers, 2003) to name few transformative performances of leading single actors, (organisations and individuals) in driving sustainability performance through strategic orientation.

The corporate world, especially in the oil and gas industry, needs to create a shift towards more shared value. For example, in 2011, the European Commission amended the definition and strategy for corporate social responsibility (CSR) with the invention of shared value as a central element of the new concept and business model. Porter and Kramer in the same year published in the Harvard Business Review their strategy of creating shared value (CSV) as a

focal element of long-term corporate strategies. Both approaches have the societal legitimation of enterprises to do business as the starting point of doing business (Moczadlo, 2015). Moczadlo, (2015) argued that the overall aim and intention of the EU in driving shared value is to enhance enterprise legitimacy and demands a broader focus and much higher requirements for enterprises. Through CSR, the European Commission strives to assess CSR as a measure for firms to contribute to more inclusive growth which results in more employment and the societal wellbeing.

Therefore, firms have to consider in addition to economic, social and environmental targets, consumer concerns and ethical human rights while developing their long-term business strategy. Porter and Kramer shared value creation also go beyond the classic business case of CSR because CSV extends the definition to include a long-term measure which has to be blended systematically into the strategic core business of firms. Therefore, the simultaneous creation of profit and societal value are decisive for Porter and Kramer; hence shared value is an essential element in the business strategy and the responsiveness of business for societal needs. Besides, the compliance of applicable legislation, as well as collective agreements between social partners, are prerequisites for any CSR.

It also alludes that creating shared value leads to more long-term competitive advances for focal firms through impeding CSV in the creation of innovative goods or services of higher quality to serve better societal needs. Focal firms adopting shared value strategies should recognise the importance of growing insight into the inadequacies they endeavour to address and need to go deeper to better know the underlying social positions and how best to improve them. A focal firm striving to enhance its shared value with society should conduct thorough research to develop a broad view of the problem in hand, the number of people affected, the barriers to progress them, the opportunities for driving change for better wellbeing, and the parties who share with the same aspiration and can help. Such understanding renders the foundation for forecasting resource conditions, detailing the business case, and distinguishing the necessary performance capacities inside and outside the focal firm. Adams et al. (2015) further argued that focal firms striving to drive shared value need to innovate further and shift focus from technology-focused to people-focused and from operational optimisation, eco-efficiency to system building which focuses on societal change. In a business environment distinguished by a growing consciousness of environmental sustainability amongst diverse stakeholders in companies, innovating for sustainability can be anticipated to expand in importance from the standpoints of reputation, organisational legitimacy and sustainable performance (Varadarajan, 2017).

Focal firms should also strive to shift from the regular business model to a business model for sustainability (BMfS). The BMfS will allow focal firms to attempt corporate sustainability and shared value by the intentional creation of business cases for sustainability. A BMfS adoption will help focal firms to enhance the efficiency and effectiveness of its business activities and actions in the fields of the economy, natural environment, society, and to generate profit from these activities (Schaltegger, Lüdeke-Freund and Hansen, 2012; Hansen and Schaltegger, 2016).

A business model for sustainability is about generating an increased positive effect and significantly reduced adverse effects for the society and natural environment through shifts in the way a focal firm and its network create, deliver, and capture value (Bocken and Short, 2016). Therefore, shared value strategy is an approach to a focal company in the oil and gas industry need to embrace to offer a more comprehensive sustainable performance. It will

address the ecological challenge and urgent societal need and will further develop a new sociotechnical approach toward maintaining the social licence to operate and sustainability.

3.8.4 Stakeholders Collaboration and Integration

Stakeholders are defined as “any group or individual who can affect or is affected by the achievement of an organisation's purpose” (Freeman, 1984:53). They are very critical, and their relationship management is a powerful mechanism through which firms can address sustainable development challenges (Steurer *et al.*, 2005). Scholars argue collaboration among the members of the supply chain is very critical and enhances innovation (Pagell and Wu, 2009; Sahay,2003; Swink, 2006).

Therefore, firms should strive to align their goals and adopt the right business practices to facilitate collaboration (Bello et al., 2004; Gold et al., 2010; McCarthy et al., 2013; Silvestre, 2015). Gold, Seuring and Beske, (2010) argue that SSCM enables collaboration among SC partners in developing SC solutions that can improve capabilities and competitiveness. Pagell and Wu, (2009:52) further states that SSCM leverages the abilities and skills of all stakeholders including “NGOs, regulators, competitors and members of the community”.

However, lack of communication and coordination among members of SC could lead to ineffective implantation of SSCM strategies (Beske and Seuring., 2014; Seuring and Muller, 2008). Silvetsre, (2015) goes further to argue that relationship and collaboration among the supply chain members and other external stakeholders as important as the cooperation among the members and external stakeholders can be a source of risk if concerns of the chain are not approached satisfactorily. Matos and Silvestre, (2013) urge management to take into account the interest of all SC stakeholders to avoid conflict and overcome uncertainties and build necessary trust among all stakeholders. Wheeler, Fabig and Boele, (2002) highlight the case of Shell Nigeria and the adverse consequence of lack of stakeholder management and lack of alignment between corporate and local strategy.

It is highlighting the role of focal companies especially in developing or under-developing economies in bringing benefits for local communities they operate. Managing social demands of local communities’ possible benefits both for external stakeholders and the business. Focal companies and their influence in the supply chain can manage better by acting as an agent encouraging dialogue. The literature acknowledges that external pressure and incentives put forward by stakeholders are departing point for SCCM (Seuring and Muller, 2008; Matos and Silvestre, 2013; Silvester, 2015). Focal firms, supply chain members and external stakeholders are well impeded in a particular business environment and consequently, face context specific issue.

Silvestre, (2015) further argue that SSCM in emerging economies needs a deep understanding of the contextual factors in addressing the sustainability decision-making process. Silvester, (2013) states that in Brazil the oil and gas industry was able to achieve a significant success regarding its sustainable strategy. He adds success such as adoption of cleaner production innovation, reduction of energy consumption and reduction of hazardous waste, are associated with good policy of collaboration of focal company, supply chain members and external stakeholders.

Integration, on the other hand, is another driver for sustainable supply chain management (Ellram, 1991; Cooper et al., 1997; Silvestre, 2015). Information and material flow are very

critical for the harmonious functioning of a supply chain, and integration facilitates its efficiency (Silvestre, 2015). Rai, Patnayakuni and Seth, (2006) argue that supply chain integration is capable of leading operational and financial improvements. Enhancing information flow and ensuring that all members of the chain thrive is critical and enhances the ability to innovate and provide continuity to the supply chain members (Pagell and Wu, 2009).

3.9 SUSTAINBILITY PRACTICES FOR SSCM PERFORMANCE

3.9.1 Lean Supply Chain Management

It has been argued that the industrial competitiveness mostly has taken priority over environmental and social performance with environmental quality coming at the cost of industrial competitiveness and focal firms investing in end-of-the-pipe treatment and control technology to decrease the toxic content of environmental discharges and wastes (Flora, 1996). Besides, public policy has sought to use a combination of regulatory standards and penalties to limit the environmental by-products of industrial production processes, frequently by mandating the use of so-called "best-available" control technology.

In recent years the growing pressure and demands from stakeholders and regulations changes in governing the environmental impact, produced more focal firms developing inclusive environmental responsibility strategies and practices (Waddock and Boyle, 1995; Frostenson and Prenkert, 2015). Therefore, focal firms become more aware of the impact their activities are having on society hence adoption of advanced production practices and innovative processes like Lean Management (LM) have become paramount in managing their businesses responsibly (Florida, 1996; Cherrafi *et al.*, 2016), and they are therefore raising their corporate social responsibility to a higher level. The concept of lean and lean manufacturing became widely accepted since the publication of Womack et al. (1990) book “The Machine That Changed the World”.

Recently the use of management systems like lean to resolve the current global provocation of sustainability has been examined (Chiarini and Vagnoni, 2015). It is in this context that process like Six Sigma and Lean manufacturing have arisen as an important part of the strive for sustainability solution (Cherrafi *et al.*, 2016). Also adopting LM has enabled focal firms to improve their results and their competitiveness (Moyano-Fuentes and Sacristán-Díaz, 2012; Moyano-Fuentes, Sacristán-Díaz and Martínez-Jurado, 2012; Martínez-jurado and Moyano-fuentes, 2014). Furthermore, it is not only intra-organisational aspects that need to be focused upon for further strides but vital for Lean principles and practices to be diffused throughout the whole supply chain members to derive the implied gains of LM (Womack and Jones, 1997; Hines, Francis and Found, 2006). In this regard, focal firms embarking on such initiatives face increased integration problems with key suppliers and customers (Perez *et al.*, 2010). Hence it is necessary that LM should be addressed from both a company focus and the supply chain in an integrated and collaborative way.

Scholars further argue that the economic sustainability of a firm is impacted by the Lean Supply Chain Management (LSCM) principles and practices in many ways. The literature identifies the following; a more positive impact of the level of internal Lean management implementation on both suppliers and customers (So and Sun, 2010), a whole supply chain gain in economic and ecological results (Perez *et al.*, 2010), reduction in business’

operational risk through joint investments in technology and R&D, better inventories reduction, product quality enhancement, knowledge increase through collaborative product design and overall wastage reduction throughout the supply chain members (Arkader, 2001; Hines, Francis and Found, 2006). In this regards the lean supply chain management (LSCM) is crucial for achieving environmental sustainability across the supply chain and, eventually, all the potential privileges of the Green Supply Chain strive and strategy (Mollenkopf *et al.*, 2010).

Therefore, LSCM influences on environmental sustainability could further achieve the following: a close and long-term relationships trigger better adoption of the aspired environmental management practices and behaviours (Florida, 1996), some practices and tools, such as the Lean supplier development and value stream mapping, are also very useful for adopting environmental management practices (Simpson and Power, 2005). In addition, collaborative design from inception stages of product development influences environmental design to reduce environmental pollution and waste throughout all stages of a product's life cycle (de Carvalho and Barbieri, 2012; Martínez-Jurado and Moyano-Fuentes, 2014; Cherrafi *et al.*, 2016; Pearl-Martinez and Stephens, 2016).

3.9.2 Corporate Social Responsibility

Corporate social responsibility (CSR) is among the major elements discussed in the literature contributing to the sustainable performance and evolving to be among many practices of several industries, including oil and gas. While CSR is broadly known as the responsibilities of a business world to society, researchers have been struggling both theoretically and empirically to provide clarity to this construct (Brown and Forster, 2013). Evidence of CSR in the form of research, conferences, consultancies publications and practices in the twentieth century were more matured in developed economies like Europe and America but latterly, Asian countries, and developing economies also emerged, giving attention to CSR policies and practices as part of their sustainability performance (Carroll, 2009).

The term CSR saw different interpretation and extended boundaries in different industries and context; hence, a universal definition will be difficult to establish. The literature also, adopted various names for CSR, including corporate ethics, corporate responsibility, corporate citizenship, corporate accountability or stewardship, triple bottom line and responsible entrepreneurship (Hohnen, 2007). Hohnen (2007) further elaborated on the nature of CSR and its rapid integrated growth in modern business practices in driving responsible competitiveness. However recently the term has taken a broader scope and the title of "sustainability" or "corporate responsibility" has been widely used as well.

International standard organisation (ISO) mostly ISO 26000 working group on social responsibility (2007), also has contributed to shaping further the definition and the understanding of corporate responsibility and integrated what Hohnen called a working definition (Hohnen, 2007).

"Social responsibility (is the) responsibility of an organisation for the impacts of its decisions and activities on society and the environment through transparent and ethical behaviour that is consistent with sustainable development and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organisation".

For CSR to perform its intent, it has to be integrated accountably and transparently into the firm's value, strategy, culture and operations and through practices within the firm and cross boundaries to drive wealth and better enhance society. Therefore, there is also increasing importance to sustainable development and global goals.

3.9.2.1 Dimensions of CSR: The pyramid

Properly the most know structure for CSR is Carroll's global pyramid of CSR with its four elements: Philanthropic responsibilities, ethical responsibility, legal responsibility and economic responsibility. As indicated in the figure (3.6) below, all domains within the pyramid of CSR are supportive and interactive of each other, which must be performed momentously in order to produce the developed CSR scheme. Although the remit of this study is not CSR per se, it is necessary to elaborate on that dimension in order to reflect on their role on SSCM and the focal company use CSR to drive sustainable performance.

3.9.2.1.1 Economic, Legal and Ethical Responsibility

Adam Smith advocates that the primary purpose of companies and corporates are to create wealth and profits for its shareholders by supplying consumers and society with goods and services (Brown and Forster, 2013). However, society in recent time has evolved to be more demanding and, modern businesses have increasingly elevated their profits models and the importance of their survival motivation to be more of a long- term value. The corporate focus has emerged to maximise their profit and to earn as the foundation in CSR notion (Carroll, 1991). Carroll further argues that for any business to survive and operate in lasting harmony with the state and its customers, it needs to operate under the obligatory of the law. Hence, the legal responsibility of the firm incorporates basic notions of fairness in its operations as installed by the law, which is also one aspect of "codified ethics". Therefore, both legal and economic responsibility is considered to exist concurrently and majorly in the business scheme, although the legal component is represented as the subsequent layer on the CSR's pyramid (Carroll., 1991).

Figure 3.6 CSR Pyramid (Carroll, 1991:42)

Ethical responsibility has been unwaveringly seen as one of the ultimate CSR parts by the business ethic evolution of the ancient decennia. It stretched the process of CSR beyond the dimension of the law. Firms in this phase carry out what is right that is even not required or codified into law but more of the focal firm commitment to creating shared value (Moczadlo, 2015). They perform on a comprehensible corporate culture which the business as the citizen in the society involves in (Tuulentie *et al.*, 2019). Therefore, ethical responsibility involves ethical expectations arising from societal groups and the higher tier of the implied levels of ethical performance. This Carrol further elaborates in stating that, values, criteria, or prospects which display attention of what the business stakeholders (external and internal) consider as just, fair, or keeping with the reverence of assurance of their moral rights are encompassed in the corporate ethical responsibility. Therefore, ethics or standards are understood to be the underlying motivation, the key drivers behind the creation and institution of laws and regulations (Carroll., 1991).This is depicted in this statement "For example, the environmental, civil rights, and consumer movements reflected basic alterations in societal values and thus may be seen as ethical bellwethers foreshadowing and resulting in the later legislation "(Carroll., 1991:41).

The performance of the company and its supply chain network in a way and the arising values and norms adopted in an ethical component may indicate a higher performance level than the current law requirement, which frequently happens in loose or broad definition or the frequent public debate and controversy related to their legality which business frequently struggle with (Carroll, 1991). Carroll further intimates that ethical responsibility must be recognised to be reciprocally interactive with legal responsibility and continuously expands the legal category to stretch while concurrently demanding entrepreneurs to reach a higher degree of expectations at measures entailed by the laws (Carrol, 1991).

3.9.2.1.2 Philanthropic responsibility

Philanthropic responsibility is the benefaction to society even when they are segregated from the specific business through charitable process (Moczadlo, 2015). Firms are anticipated to involve in corporate social actions for asserting their enthusiastic response as good corporate citizens (Haniffa and Cooke, 2005). It includes active corporate participation in actions or programs to promote and strengthen human wellbeing or goodwill. Those generous act through business contributions of financial resources, executive time, such as contributions to education, arts and the community could be considered as an illustration of philanthropic behaviour (Carroll 1991). Kim and Reber, (2008) analysing the roles and contribution of 173 PR practitioners to CSR and identified five roles for public relations in CSR in which value-driven, philanthropic, communication is among them.

Saeidi *et al.*, (2015) examining 205 Iranian manufacturing and consumer product firms report that the connection between firm performance and CSR is a fully mediated relationship and recognises customer satisfaction, sustainable competitive advantage and firm's reputation all contribute to firms' performance. They conclude that there is a role for CSR in indirectly improving firm performance through improving firm's reputation and competitive advantage while enhancing the level of customer satisfaction. A study of supply chain actor by Hsueh,

(2015) also indicated that sustainable performance is improved by CSR collaboration among supply chain members.

The O&G mostly the large ones are mostly associated with international organisation to contribute to the CSR principle and practices. The industry is associated with several high-profile meta-organisations such as the American Petroleum Institute (API), stock market sustainability indices, the UN Global Compact, and the GRI that are responsible for developing CSR principles and guidelines. Researchers, however, express significant concerns about the sincerity of the O&G industry's commitment to CSR (Berkowitz, Bucheli and Dumez, 2017; Chowdhury *et al.*, 2019).

They justify their concerns to the industry considerable costs on society like air pollution, oil spills, injuries, death, social dislocations, and conflicts. Several studies have also raised questions about the real impact of CSR activities of the O&G industry. Idemudia, (2009), for example, provides evidence that CSR activities of large O&G companies have failed due to poor design and low community participation. Chowdhury *et al.*, (2019) find that CSR improves the O&G firm's value. While social projects and activities such as community development and employee well-being are key value-drivers, economic sustainable and environmental activities have an insignificant influence on the O&G firms market value. Likewise, Berkowitz et al. (2017) argued that the complexity and variety of CSR issues in O&G compel companies to develop non-industry-specific and industry-specific collective actions.

O&G companies indeed face several challenges regarding the proper implementation of CSR activities. One of them is related to the industry's "stranded asset risk" resulting from the decarbonisation of the world economy by 2100 (Chowdhury et al. 2019). Since oil and gas have significant economic value, actions to reduce carbon emissions imply a significant decrease in the asset value of different stakeholders associated with fossil fuel supply chain management. Energy companies, therefore, have strong financial reasons to oppose efforts to leave their valuable assets in the ground (Heede, 2014). Linquiti and Cogswell, (2016) mention that such resistance stems not only from losing massive wealth value but also facing the high costs in technology transformation. A lack of skilled human resources, the poor commitment of O&G staff, a failure to integrate CSR projects in a company's strategic plans, and the inability to involve the beneficiaries of CSR are some of the other challenges that O&G companies experience (Frynas, 2005, 2010). While all these factors adversely affect the real outcomes of CSR, the failure of CSR activities damages the reputation of O&G companies. Such reputational risk "can be just as damaging to the bottom line as a legal liability" (Spence, 2011:76) and thus may lead to a negative impact on firm value of O&G companies.

A study by Miao et al. (2012) have proposed two counterintuitive arguments about the relationship between CSR and firm value in conservative industries, like O&G. Between them, the value-enhancement proposition suggests that if managers are moral and ethical, they will use CSR as a mechanism to improve the image of corporate philanthropy and transparency, which will give a positive and favourable signal to the market about the sincerity of the company's CSR activities. This outcome will result in higher firm value. Alternatively, the window-dressing proposition suggests that when managers become immoral and unethical, they might use CSR to enhance their reputation as socially responsible citizens at the cost of their companies. This will ultimately result in a decline of infirm value. Given the challenges that managers in O&G companies face, any of the above

two propositions can be applied in the O&G industry. Despite the criticisms and failures of CSR activities, the O&G industry has begun to correct some deficiencies in managing CSR by introducing specific measures, such as signing the Global Memorandum of Understanding (GMoU) and introducing the Environmental Management System (EMS). If these initiatives allow companies to become more socially responsible, CSR should be value-additive for O&G companies.

In contrast, even after initiating the above measures throughout the industry, CSR cannot be effective if weak legal and political systems in host countries, cultural barriers in local communities, and a lack of transparency prevail. These sorts of agency problems encourage managers to use CSR as a means of extracting economic benefits in an unethical manner, which ultimately hurts a company's reputation and market value. The two massive 2010 oil spill crises in the US and North American waters that accumulated extensive media awareness, CSR is growing to be a critical element in focal companies strive to defend its moto of cause no harm to people and the environment (Spangler and Pompper, 2011).

3.9.3 Local Content and In-Country Value

The last few decades, many countries with abundant natural resources witnessed economic growth and social prosperity. Numerous Oil and Gas rich countries underperform in matters associating to social and economic advancement. Consequently, more inclined to conflict and prompts more authoritarian resource nationalism consultations. It is argued that the majority of Oil and Gas wealthy countries have missed relinquishing their full potential hence leading to less economically enduring environments (Thurber, Hults and Heller, 2011). Also, others suffered from the resource curse. The term 'resource curse' relates to the paradox that resource-rich countries often exhibit more inferior results across a range of development performance indicators opposed to less resource-rich countries. The resource-rich countries are often marked by a lack of accountability and mismanagement and corruption, limiting the citizens from harnessing the advantages that natural resources can bring (Norad, 2016; 2019). Nevertheless, some countries like Norway have undoubtedly utilised legal frameworks and institutional systems to serve Norwegian society (Thurber, Hults and Heller, 2011; Hunter, 2014)

Norway's success can be attributed to various inter-related constituents, an institutional design reinforced under a collective political will (Thurber et al., 2011). Also, sustained regulatory frameworks devised to facilitate the development of local competitive goods and services commonly recognised as Local Content requirements (LC) of 1972. The legal stipulation indicated explicitly affirmed objectives and rationales for nurturing local participation (Hunter, 2010). Thus, Norway became a diversified economy where both international and local players had similar purchase capacity (Heum, 2017). Arguably, Norway has moulded the discourse of LC in the Oil and Gas sector (Acheampong, 2016). The Norwegian success promoted many developing economies to follow the "Norwegian LC Model" that has rendered this potential industry into a "silver bullet" able of improving cross-sector growth, job creation, and national capacity building (Berryl Claire Asiago, 2017). The "Norwegian approach has inspired admiration and imitation as the canonical model of good bureaucratic design for a hydrocarbons sector." (Berryl Claire Asiago, 2017:475). This motivated policymakers across many countries to export the Norwegian LC model and practices to their respective fields (Ovadia, 2014). Many countries like, Angola, Ghana, Nigeria, Kazakhstan and Oman LCs emerged mainly because of the Norwegian character and success. The Norwegian success and the Oil and Gas globalisation through development

programmes has contributed to sustainably managing resources (Norad, 2019). On its website, Norad argues that "Norway continues to receive numerous requests from countries that wish to learn from our experience in petroleum management, which is why the Government of Norway initiated the Oil for Development (OfD) Programme in 2005." OfD programme provides a platform of experience sharing through:

- strategic ownership by the state, strong and competent institutions
- continual accumulation of technical knowledge, an advanced regulatory system with high respect for the environment, health and safety
- the society's determination to secure national control over petroleum resources

The main objective of the OfD programme is to reduce poverty by encouraging responsible administration of oil and gas resources. It also advocates that responsible governance is an essential prerequisite for sustainable economic growth and welfare for the citizens (Norad, 2018). It is the collaborative nature of OfD programme, which enables it to achieve success and build capacity through institutional collaboration with partners countries. Also, the programme success could be attributed to collaboration with other non-governmental institution like civil society organisations, media, academics and multilateral actors such as the IMF and the World (Norad, 2019).

The local content or In-Country Value (ICV) aims at enhancing the value of goods, services and skills in industrial sectors and stimulating manufacturing and local production in order to decrease the imports of goods and improve the provision of services, thereby decreasing dependence on external experts and upgrading the skills and capabilities of nationals by enhancing their contribution to the activities of industrial sectors. In a mid-sized, open economy like Oman, in which the most significant driver of growth so far has been oil, achieving the transition to a more diversified economy is challenging but have been supported by a mechanism like ICV.

The ICV in Oman was growing importance and referred to total spend maintained in Oman to support in the job creation, improvement of human resource capabilities and establishing of local industries to enhance productivity in the oil and gas sector (Ministry of Oil and Gas 2014). The scheme, known as the ICV Blueprint Strategy, was unveiled in late 2013 and built on previous successful practices to date which were aimed at achieving optimal value from the country's petroleum resources. Therefore, companies working in Oman's oil and gas sector are currently adjusting their operations in line with a government scheme aimed at making more of the extractive industry's potential to benefit the broader national economy.

The oil and gas industry in Oman highly depend on outsourcing mostly from international firms. Therefore, the supply chain of the industry is critical in driving ICV objectives hence a considerable part of the attention need to be determined if the national content should be achieved. Also, the ICV could offer the knowledge and innovation capacity to address the barriers of high-tech intensity and intensive capital.

There is no doubt the process is challenging and likely may take many years to mature and requires a high focus on education and skills development as well as on institutional capacity building. On the other hand, moving away from the core of upstream petroleum activities and its high-tech focus, services are in general technologically more straightforward functions and are also less demanding organisationally. Midstream, on the other hand, shares less complexity than upstream. Such services should be the initial focus of national content

development. The petroleum industry has very rigorous and non-negotiable requirements concerning health, safety and environment. The development of a competitive supply industry locally must, therefore, take into account those requirements.

3.10. PERFORMANCE MANAGEMENT

Sustainable business development has gained recognition over recent decades because of the critical focus in the supply chain network on environmental, social and corporate responsibility(Ahi and Searcy, 2013). Also, the operations and markets have urged firms to revisit their business, corporate and functional operations and to strive for sustainable supply chain management (SSCM) (Ageron, Gunasekaran and Spalanzani, 2012). The interaction between sustainability and supply chains is important, both for keeping companies competitive and to sustain their licence to operate (Kleindorfer, Singhal and Van Wassenhove, 2005; Kim, Chung and Lee, 2011; Fleming *et al.*, 2017).

Hence, the importance of sustainability in supply chain management is growing further recognition, and there have been many attempts to develop an evaluation performance framework. Performance measurement could facilitate more informed decisions making process and continuous improvement of the practices (Wan Ahmed et al., 2016). According to Mentzer (2004), business performance is a multidimensional construct, and the ultimate purpose of SCM is to improve supply chain competitive advantage or competitiveness. Seuring and Muller (2008) argue that supply chain performance can be improved more efficiently when suppliers are clear about sustainability requirements that must be fulfilled.

Therefore, a sustainable performance system is great enabler for SSCM and firms requiring a greater sustainable performance need to implement adequate performance system in their supply network. As discussed previously, the concept of sustainable supply chain management (SSCM) has been recognised as a basic organisational philosophy to attain profits by decreasing environmental risk and impact while enhancing the economic and social efficiency factors (ESEF) (Raut, Narkhede and Gardas, 2017b). Also, sustainability is an integrated process, and any attempt to measure performance should include all three aspects of sustainability (environmental, economic and social).

However, most research into sustainability in the realm of logistics and the supply chain is mostly focused on environmental aspects and how these perspectives link to economic aspects (Müller and Seuring, 2008). Srivastava (2007), for example, gives a comprehensive literature review on green supply chain management. He recognises that there is a definite growth of interest in green supply chain management among academics and practitioners of supply chain management and logistics. However, management often has some challenges in choosing and implementing green supply chains in practice and within their context of the operation. He notices that "the problem is complex and challenging, as a very large number of parameters, decision variables and constraints are involved along with a large number of estimation requirements such as those of expected demands and returns and cost criteria associated with each decision" (Srivastava, 2007:71). Scholars relate the challenge of green supply chain management to the superficial solutions which perform insignificantly enhanced environmental and economical solutions (Brockhaus et al., 2013; Srivastava, 2007; Lee and Wu, 2014).

Scholars also strived to establish a steady relationship between corporate social performance and financial performance. Peloza, (2009), in his strive, to establish a relationship between corporate social performance (CSP) and financial performance conducted a literature review. The review highlighted that there are inconsistencies for managers who seek the "holy grail" of creating financial value out of environmentally and socially sustainable activities. The variety of metrics and measurement processes described in the literature illustrate that there is always a need to clarify the value chain, from initiative to financial impact (Peloza, 2009).

The measures firms use will further depend on how a corporate social performance is conceptualised and how it is expected to affect the firm in a particular context. Therefore, for firms understanding of the impact of CSP on end-state financial metrics, such as share price, is highly depends on achieving the full costs and benefits of each sustainability initiative, through the intervention process. However, scholars argue that researchers have only just started to comprehend the significance of the mediating process and started shifting from examining the relationship between corporate social performance and financial performance to examining a broader dimension of structures and processes firms use to maximise the corporate social performance.

Therefore, the research needs to help firms' managers establish strategies for measuring the financial impact of their initiatives suited to their context and industry. Reed (2001: 4) points out that "the business case is not a generic argument . . . for all companies in all situations, but rather something that must be carefully honed to the specific circumstances of individual companies operating in unique positions within distinct industries. Success in whole industries and at other companies are useful examples, but the case still has to be applied to one company at a time and ideally one initiative at a time". A Yale University study of chief financial officers and financial analysts found that finance executives tend to discount environmental issues because of a lack of hard data, even though they believe that environmental issues are relevant to the long-term business sustainability.

However, managers to make the business case for a sustainability performance need to address both the quantitative elements of performance such as profitability, ROA and share price and define a process or tool for making a quantitative calculation understand by the market and financial ecosystem. Lee and Wu (2014) further argued in logistics like transportation it is better to consider performance indicators from different perspectives simultaneously and to integrate them into one model of system measurement in order for corporations to improve their sustainability performance. Hourneaux Junior *et al.*, (2017) argued that although many initiatives linked to guidelines for the publishing of sustainability in organisations have endeavoured, there is still room for the practical implementation of corporates and management practices of sustainability and the reporting of sustainable management practices. Gaudencio *et al.*, (2018) pointed out that most oil and gas company in Brazil fail to elaborate in their sustainability report at corporate or industry level and recommend better regulation and requesting policy makers to exert more control over sustainability performance reporting at industry level. The scope of this study is not to include metrics related to the corporate social performance outcomes of the firm but mostly to highlight the importance of measures mechanism in driving sustainable performance and to suggest a practical approach for corporate management in achieving sustainability performance.

The SSCM is defined "the set of supply chain management policies held, actions taken, and relationships formed in response to concerns related to the natural environment and social

issues with regard to the design, acquisition, production, distribution, use, reuse, and disposal of the firm's goods and services" (Haake and Seuring, 2009:285). A practical, efficient and reliable performance measurement framework can serve as a valuable tool that allows management to monitor, control and improve their firms' processes and performance (Tseng, Lim and Wong, 2015).

Kaplan and Norton (1992) have introduced a balanced scorecard (BSC) to help business assess business performance applying financial and non-financial indicators. The BSC facilitates the expression of business performance indicators and hence assures the framework needed for the performance measurement of management functions. Nevertheless, the framework is a multi-hierarchical arrangement of dependence relations with a closed-loop structure for the perspectives and criteria of an organisation. Scholars argued most of the existing SSCM literature neglects to address these concerns for performance assessment (Carter and Rogers, 2008; Stefan Gold, Seuring and Beske, 2010; Ageron, Gunasekaran and Spalanzani, 2012; Gopalakrishnan *et al.*, 2012; Walker and Jones, 2012b; Ahi and Searcy, 2013; Tseng, Lim and Wong, 2015).

In the BSC model, as depicted in figure 3.8 below, four aspects need to be balanced for SSCM performance measurement; these include learning and development, internal business process, stakeholders and sustainability, (Kaplan, 2009), and they blend environmental and social perspectives with economic performance. Current studies have familiarised managers of the relationship between environmental and economic systems, but they failed in demonstrating how a firm handles the performance criteria of different BSC aspects from a typical case (Tseng, Lim and Wong, 2015).

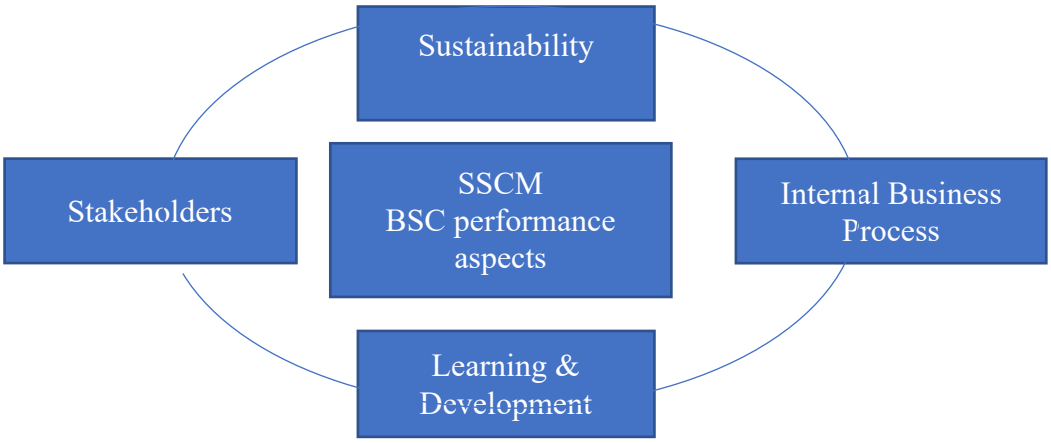

Figure 3.7 BSC performance close-loop network hierarchical structure.

Therefore, focal companies trying to achieve a sustainable performance should start to develop its vision, mission strategy and create a balanced approach among four prospective of sustainability mainly learning and growth, internal business process, stakeholders and sustainability. In the learning and growth perspective, drivers for creating long-term

stakeholders' value and the focal firm can adopt there are measure focal company could adopt measures for enhancing research and development (R&D) for green technology within the company or collaboration with the supply chain in doing so. Also, the technical capacity building should include HSE information system to enhance knowledge sharing among company employees and suppliers for better performance drive. Collaborative planning, forecasting, and physical integration of the supplier into the plant and firm's operation will further enhance learning and growth for both the focal firm and the value chain.

Building capacity and awareness among company staff towards sustainability is vital and will enhance staff adoption and learning towards sustainability. Peter Drucker injected management by objectives in his famous book, The Practice of Management (Drucker, 2002). Drucker asserted that all employees should have individual performance objectives that aligned firmly to the company strategy. Staff at all level must acknowledge and understand the ultimate business goals, what is expected of them toward sustainability and why. Management needs to extrapolate what staff will be measured against and how.

The focal firm striving for better sustainable performance could further enhance gender diversity and encourage more content among staff from employees with particular need such as disabilities. Female at the O&G industry is underrepresented at a company and board-level hence a favourable policy to enhance the percentage of female staff at both levels will enhance diversity and inclusiveness and therefore sustainability performance. A study by Burnett and Williams, (2014) of geologists and geophysicists in the oil and gas in the US concluded that a glass ceiling is solidly in place in the oil and gas industry, with very few women pictured at the executive levels and on boards of directors despite being the most powerful and profitable industry in the world and companies declare commitment to diversity in their formal corporate documents. They further argue that even though O&G published commitment to diversity, the oil and gas industry is dominated mostly by white men (Burnett and Williams, 2014).

The industry and focal companies need to further enhance their capacity through third parties assessment, such as environmental and social certification and benchmarking. Dragomir, (2012) in a study of environmental disclosures of five European companies (i.e. BP, Total, Shell, BG Group and Eni) argued that the companies could be challenged for their ability to provide high-quality environmental disclosures at group-level. It was further argued that the five industry leaders had published reports bearing unexplained figures and methodological discrepancies. Therefore, a need for credential should be further enhanced toward the entire supply chain and focal companies and their suppliers should be encouraged and supported to achieve certification such as ISO 14000 for the environment and ISO 26000 for social inclusion.

The internal business process is also critical for achieving sustainable performance as they serve with the learning and growth perspective the dynamic and the cause of the focal firm capacity to achieve. Therefore, the focal firm should put in place necessary processes to drive precise measurement in multi-criteria such as lost time incidents (LTI), lost workdays and employee accidents. Measuring the frequency of company loss of sustainable performance from staff and suppliers' personal incidents will help the focal firm to prevent such performance loss and causing harm to people. On the other hand, environmental protection requires processes to be put in place to prevent causing harm to the ecosystem. The focal firm could address that by enhancing its policy and procedure and creating third party assessment and certification. Also, initiatives such as life cycle assessment, green supply chain

management and purchasing, water and energy consumption and sustainable consumption are necessary to create a better culture towards managing waste not only at product level but also a process of generation. Focal firms could further enhance adoption of green design, packaging and shared economy and energy transition to manage waste from cradle to grave and further collaborative mindset.

As it was discussed previously stakeholders are major drivers towards sustainability performance but also, they could be a barrier if not involved at early stages of developing corporate strategies. Therefore, focal companies striving to achieve better coordination and collaboration with stakeholders need to adopt many initiatives such as the signing the code of conducts or voluntary initiatives with concerned bodies and target their CSR and ICV toward value creation, not risk mitigation. On the one hand, the arguments presented by the industry in support of the case for CSR in the likes of sub-Saharan Africa, Latin America and Asia, are tenuous at best.

Hilson, (2012) argues in developing countries, the expectations of CSR are much too high and therefore for CSR activities to be effective in any location, there must be a grounds of sound regulations and enforcement in position for it to complement. He associates the lack of drive for legislation in many developing countries the reason for such conflicts in expectation. Therefore, HSSE policy and procedure are necessary but not adequate to address all stakeholders needs and concerns. Capacity building, investment and collaboration with supply chain members in creating inclusive growth which community focused are paramount. The success of such programmes needs to be assessed through satisfaction surveys and stakeholder's engagement sessions as well as award and incentives for high achievers and consequence management for violators of necessary code of conduct.

Suppliers are significant contributors to corporate success but at the same time could be a significant cause of sustainable performance if not integrated. Therefore, building suppliers capacity in managing HSSE and innovating toward sustainability is highly needed. Initiatives like lean need to be extended to enhance operational efficiency and environmental and social effectiveness.

The communities at large should also be supported in elevating social such as education and health systems. Blanco, Caro and Corbett, (2016) stated that although collaboration and performance measurement are broadly recognised as necessary for enhancing sustainability in supply chains, limited knowledge is known about how comprehensively companies are currently measuring their supply chain carbon emissions. Also evaluating the social impact of the business and further collaboration with social entrepreneurial and social charity projects could elevate the social capacity of the focal firm and its supply chain.

In conclusion, focal firms as depicted above in figure 3.8, will manage to achieve sustainability performance within the company and across the value chain if focal company management managed to create a balanced approach in adopting financial and nonfinancial indicators (Kaplan and Norton, 2001; Kaplan, 2009). As explained above, the adoption of the performance management system like BSC will create better facilitation within the focal firm's functions and across the value chain.

The adoption of financial measures such as revenue from green production, reducing operation cost through the adoption of lean and increasing of the local supplier will contribute to the focal company economic bottom line. At the same time, reduce carbon

emissions, natural resource reduction and hazardous waste will contribute to reduce harm to the environment and enhance transition towards renewable energy. This balanced approach will further enhance the focal firm licence to operate and develop better credit balance with society. It will also create a better collaborative mindset towards sustainability performance. The system could be further complemented by external verification and reporting like ISO, GRI and the UN SDGs to enhance social acceptance.

3.10.1 SUSTAINABLE PERFORMANCE IN OIL AND GAS

The oil and gas industry as discussed earlier is associated with diverse source of pollutions and GHG emission including flaring. Within the Oil & Gas industry (O&G), gas flaring describes the process of safe disposal of associated or waste gas by burning at the flare. Whereas associated gas is excess gas produced during oil exploration and production activities, waste gas is the by-product of the different oil refining processes (Heede, 2014; Rashedul *et al.*, 2017) On one hand, gas flaring is a non-routine safety procedure that takes place in case of emergency shutdowns, maintenance or operational upsets to clear the hydrocarbon gas inventory from facilities' pipelines or equipment. On the other hand, normal gas flaring refers to the continuous discharge of gas to the flare during routine plant operations (Stiglitz *et al.*, 2017). Since the primary focus of this section is the impact of focal companies in the O&G on environmental impact, the discussion of flaring will be limited its greenhouse gas (GHG) emissions and it contributes to global. Based on the data compiled by the World Bank's Global Gas Flaring Reduction (GGFR) Public Private Partnership, global gas flaring has been persistent at around 150 Billion Cubic Meters (BCM) during the period from 1994 to 2009, representing about 30% of the European Union's yearly gas consumption and resulting in annual emissions of some 400 Million Tons of Carbon Dioxide Equivalent (MtCO2e) into the atmosphere (Dragomir, 2012). From a social perspective, gas flaring poses a threat to human health and to ecosystems at sites adjacent to the flare. From an economic perspective, gas flaring is a dissipation of non-renewable natural resources since the flared gas has an energy content (calorific value) that is wasted without use as soon as the gases are combusted at the flare (Basciano and Peterson, 2007).

Mourad, Ghazi and Noureddine, (2009) and Timilsina *et al.*, (2010) outlined several alternatives to flaring that primarily rely on the recovery of the otherwise flared gases. Following inception in Norway in 1994, concepts and technologies of flare gas recovery have been proven and extensively applied in offshore oil and gas production facilities (Christiansen, 2002). However, as reported by the World Bank (2005), economic viability of flare gas recovery projects is constrained in many countries mainly due to high project development costs, lack of funding and lack of distribution infrastructure. Another significant factor affecting economic feasibility of flare gas recovery projects is the energy subsidy that many governments provide (Rashedul *et al.*, 2017).

As. Discussed earlier the O&G industry is selected for this study to demonstrate the role of focal companies' situation in an industrial supply chain. Multiple global processes from the exploration, extraction, refining and distribution phases distinguish the industry (Bandinelli and Gamberi, 2011). It represents a significant role in modern society through economic development and social activities (Wan Ahmad *et al.*, 2016).

Initially, the oil and gas companies were established to create wealth and profitability and resources were only seen as the means to achieve profits, and the main measure of successful trade (Frynas, 2005; Ferns, Amaeshi and Lambert, 2017). However, sustainability concerns arose over the exploitation of natural resources and frequent environmental disasters (Armstrong and Wagner, 2010). The interlinked relationship between poverty reduction and climate change warrants a paradigm shift towards ceasing poverty, fostering economic growth, respecting human rights, and assuring social inclusion (Sachs, Maennling and Toledano, 2017). There are also substantial reasons for O&G companies to be involved and take a leadership role in implementing sustainability (Silvestre, 2015b). Access to sustainable and modern energy is essential for economic growth, employment, education, poverty reduction, health and safety. Without energy, other sustainable development goals cannot be accomplished (Sachs, Maennling and Toledano, 2017). Besides, the public feels ambivalent towards the industry as it imposes significant costs on society, including ecological degradation, social dislocation, conflict, injuries, and death (R. George *et al.*, 2016). Compliance strategies which consist of codes of conduct and standards are the most critical supply chain action adopted to counter social issues in supply chains (Yawar and Seuring, 2017). However, codes of conduct are not adequate unless it acts as initiatives for building partnerships with shared values and commitment (Leigh and Waddock, 2006). Also, collaborative relationships through direct supplier development strategies such as training and education, are necessary mechanisms to implement codes and standards (Krause, Handfield and Tyler, 2007).

Therefore, O&G industry must adopt a more transformative and proactive approach with a shared value strategy. It should seek to build up and enhance their perception as a "good citizen" to increase organisational legitimacy and access to critical resources (Wolf, 2009) (Wolf, 2014). Scholars have all agreed that shared value strategy offers corporations the opportunity to utilise their skills, resources, and management capacity to lead social development in ways that even the best-intentioned governmental and social sector organisations can rarely match(Kramer and Porter, 2011; OECD, 2011; Wilson and Kuszewski, 2011; Pfitzer, Bockstette and Stamp, 2013; Harvey and Bice, 2014).

The industry must accommodate the coevolution between economy, society and ecology, i.e. significant, non-linear changes in societal cultures, structures and practices. A transition strategy would include shifting from a centralised fossil-based energy system to a renewable energy decentralised system (Loorbach and Wijsman, 2013), and sustainability for all stakeholders (Gao *et al.*, 2017). However, the performance of the O&G focal firms and its supply Chain need to be measured to assure systemic implementation. There are performance indicators and protocol developed by the Global Reporting Initiative (GRI) are considered helpful in improving sustainable performance outcomes (GRI, 2013). Therefore, sustainable performance is vital as the focal company performance is affected by the rest of the supply chain members and needs to extend the assessment process upstream and downstream along the supply chain (Escrig-Olmedo *et al.*, 2018).

3.11 CONCEPTUAL FRAMEWORK

Following the recommendation of Walsham, that a researcher embarking on interpretive case studies “create an initial theoretical framework which takes account of previous knowledge, and which creates a sensible theoretical basis to inform the topics and approach of the early empirical work” (Walsham, 1995:76).

A conceptual framework lays out the key constructs related to the phenomenon being studied and the presumed relationships between them (Miles and Huberman, 1994). Voss, Tsikriktsis and Frohlich, (2002) also argue that the starting point for case research is the research framework that graphically underlies the research and provides ―a prior view of the general constructs or categories that we intend to study, and their relationships.

Furthermore, Saunders, Lewis and Thornhill, (2009) stated that a conceptual framework enables the researcher to link the study into the existing body of knowledge in the subject area under study. It performs as a sensitising device assisting the researcher to theorise or compose a logical sense of the research problem (Sekaran, 2003). Thus, the conceptual framework presented below assists as a guide for the exploration and presentation of possible explanations for the phenomenon of sustainability performance in supply chain management.

As discussed in this chapter, a business case of sustainability is often argued as achieving economic success while implementing voluntary social and environmental activities (Schaltegger et al., 2011). In a strive, by academia and practitioners to address this predicament, there are several approaches to the subjects and many conceptual frameworks evolved over the years to amalgamate the performance of supply chain to sustainability. They have also argued that the SSCM is evolving in theory and practices (Geng, Sarkis and Zhu, 2005; Zhu and Sarkis, 2007; Müller and Seuring, 2008; Wittstruck and Teuteberg, 2012; Zhu, Sarkis and hung Lai, 2013; Varsei *et al.*, 2014).

In 2008 Muller and Seuring, in their strive to contribute to SSCM frameworks conducted a literature review on SSCM taking 191 papers published from 1994 to 2007 into account. They confirmed the dominancy green/environmental issues and offered to the framework the concept of a focal company (Müller and Seuring, 2008). They contested the SSCM approach for lacking the take-up of theoretical background and the need for conceptualisation towards theory building or philosophical conceptualisation based on a literature review. The framework defended the argument that focal companies experiencing pressure triggers the adoptions of two strategies; “supplier management for risks and performance” and “supply chain management for sustainable products” (Müller and Seuring, 2008:1703). However, they urge further work to improve this framework from a research methodology perspective empirical research through case studies, in order to build a more robust theoretical basis. Nevertheless, scholars consider that any framework for comprehensive sustainability management and appraisal demands the attention of three elements of sustainability; economic, environmental and social objectives and performance measures (Schaltegger and Burritt, 2010; Schaltegger, Lüdeke-Freund and Hansen, 2012).

Therefore, the strive to discuss the effect of stakeholders to drive sustainability and the rise of developing economies being the new hub for manufacturing resulted in Zhu and Sarkis (2007) and Zhu et al. (2013) developing a conceptual model focusing more on GSCM among Chinees manufacturing industries. The Zhu and Sarkis (2007) framework focused primarily on the examination of pressure moderating influences on relationships between GSCM practices and Performance in Chinese manufacturers. Zhu et al. (2013) further developed and empirically tested a theoretical model on the diverse types of institutional pressures driving manufacturing enterprises to seek green supply chain management (GSCM) practices and comparable performance results. Using a sample of 396 companies and path analysis to evaluate many structural links, concluded that institutional forces had driven the manufacturer selection of internal GSCM practices which in turn correlate to their external GSCM practices choice. The results also suggest that GSCM practices do not directly affect

economic performance but can increase it indirectly. The study introduced a conceptual model that identified the structural relationships associating the antecedents for performing the different components of internal and external GSCM practices and their relations to the performance outcomes from the implementation by manufacturing enterprises. The limitation of this might be related to its survey instrument limitation to GSCM practice and performance components that are developed based on a past study by Zhu et al., (2005).

In their strive to address the critical success factors for SSCM, Wittstruck and Teuteberg (2012) argued that many organisations are often unable to understand SSCM factors implications for management practice hence the implementation of SSCM often does not succeed in striking benefits. Their strive in fixing that anomaly resulted in conducting a systematic literature review of nine high-quality journals to identify potential success factors of SSCM in recycling networks in German companies (Teuteberg and Wittstruck, 2010; Teuteberg and Wittstruck, 2012). They found that signalling, information provision and the adoption of standards are crucial preconditions for strategy institutionalisation, mutual learning, the setting of ecological cycles and hence for the overall success of SSCM. The explanatory model presented causal relationships between internal SSCM measures, the realized efficiency and intensity of cooperative relationships with supply chain partners, and the achieved success. However, the study is exclusively focused on German companies and might be criticized for that limitation of being developed in developed economy concept and ecological. Therefore, its results do not necessarily apply to other countries or even continents especially developed one due to contextual factors and ecology focused.

The focal company and its stewardship in driving sustainability was the focus of Varsei et al. (2014) attempt to present a framework which can serve focal companies in the advancement of sustainable supply chains. They consolidated concepts from four organisational theories, including the institutional, resource-based, stakeholder and social network perspectives, to represent key drivers and enablers of sustainability actions in the supply chain. The framework and approach manifested are only conceptual based on the identified theories hence lacked being comprehensive and validation. However, it was one of few studies that incorporate some of the critical aspects of all three dimensions of sustainability in a single overarching framework for supply chains and offered some theoretical contribution and implications for sustainable supply chain management.

All the frameworks discussed have lacked a conclusive approach and could be argued fell short to address the gaps raised in this study. It is also ignored a very critical industry and a contributor to the global economy and human prosperity since the industrial revolution. The fact that these factors are scattered or often scarcely addressed by the literature, leads to the formulation of main question “What are the key factors in driving or inhibiting sustainable supply chain performance in the oil and gas sector in Oman, and How are the key factors facilitate or inhibit sustainability performance in the supply chain?

The literature review suggested that the interaction between sustainability and supply chains is necessary for competitiveness and maintaining the corporates licence to operate (Harvey and Bice, 2014; Lee and Wu, 2014; Bocken and Short, 2016; Hansen *et al.*, 2016; Fleming *et al.*, 2017; Liebetruth, 2017). Focal firms in the oil and gas sector are subjected to an influence from primary and secondary stakeholders (Matos and Hall, 2007; Sueyoshi and Wang, 2014; Al Hadhrami, 2015; Al Shueile, 2015; Silvestre, 2015a; Voyer and van Leeuwen, 2019). The primary stakeholders are those with a direct interest in the firms such as shareholders,

governments , regulators, employees and suppliers (Ehrgott *et al.*, 2011; Swailes, Al Said and Al Fahdi, 2012; Parsons, Lacey and Moffat, 2014). The secondary stakeholders such as political groups, industry neighbours and their expectation, social activists, NGOs, social media and their campaigns and rising transparency call is further exerting an external pressure on focal companies to report their performance in more transparent way and green washing (Matos and Silvestre, 2013; Fernandez and Ali, 2015; Qatan *et al.*, 2015; Saeed and Kersten, 2019). Standards organisations is considered by many investors as third-party verifiers and providing an impartial opinion of the industry and its actors hence they provide a continuous pressure on focal companies and their value chain (Hsu *et al.*, 2013; Testa *et al.*, 2016; Bastas and Liyanage, 2018). Recently energy transition has evolved to be an emerging concern not only for green drive but also a competitive imperative for growth opportunities in the business environment (Wan Ahmad *et al.*, 2016; Rezaei *et al.*, 2017; Bach, 2019). Although external stakeholders are not directly engaged in activities or business transaction with focal firms but can affect, or are affected by the focal firm's operations (Amini and Bienstock, 2014).

The study acknowledges that there are other factors like national culture that might influence the oil and gas industry especially in developing economies like Oman, but are not addressed here because their relevance might be weaken by the chosen context and industry (Common, 2008; Moideenkutty, Al-Lamki and Murthy, 2011).

The literature has presented further challenges to focal companies striving to enhance sustainability performance. The supply chains face further barriers to sustainability in developing and emerging economies, which contribute to a higher degree of complexity and uncertainty due to the existence of highly turbulent business environments, lack of transparency, lack of SD activities and initiatives incentive, weak SD culture and institutional voids all contribute to further hindrance to successful adaption and implementation of sustainability (Mezher *et al.*, 2011; Walker and Jones, 2012b; Abidin and Powmya, 2014; Ansari and Kant, 2017; Lutz *et al.*, 2017; Centobelli, Cerchione and Esposito, 2018).

At a macro level the supply chain is considered mostly internally focus and functions are lacking alignment to sustainable and shared agenda (Verbong and Geels, 2010; Wijethilake, Munir and Appuhami, 2018). It could be further heighted by lack of awareness among focal company staff and supply chain members which might result in inability to adapt to practices such as sustainable consumption (Biggs, Hall and Stoeckl, 2012; Jing, Avery and Bergsteiner, 2014). The company working in a dynamic business environment and its ability to influence depends on its power and authority over supply chain members and inability to influence will hinder the sustainability performance.

In addition, focal companies are also subjected to internal dynamic such as management commitment and preparedness, organisational culture and organisational values (Walker and Jones, 2008; Pagell and Wu, 2009; Harms, Hansen and Schaltegger, 2013b; Wan Ahmad *et al.*, 2016). The management commitment might be translated in their proactiveness, leadership, transparency and active engagement with all stakeholders (Pagell and Wu, 2009; Braziotis *et al.*, 2013; Fritz, Schöggl and Baumgartner, 2017).

The literature review discussed here also indicated that stakeholders' pressure is influencing the strategy of focal companies. Therefore, the next discussion will address the question of How do they impact corporate strategies on supply chain performance?

Sustainable strategies involves making internal changes to organisation philosophy and values and practices (Hahn and Scheermesser, 2006; Tate, Ellram and Kirchoff, 2010; Adams *et al.*, 2015; Rezaei *et al.*, 2017). Leadership can foster an organisational culture facilitating implementation of sustainable activities (Walker and Jones, 2012a), and sustainable innovation (Amini and Bienstock, 2014; Silvestre, 2015a; Pearl-Martinez and Stephens, 2016). The leadership in their decision to mitigate the pressure adopts different strategies depending on their factor magnitude and the focal company capability and magnitude of influence. The management preparedness to mitigate brand image or product risk, will result in the focal company adopting a reactive approach build on the foundation of fulfilling minimum standard, enforcing code of conduct, enhancing operational efficiencies through practicing lean manufacturing and enforcing minimum wages and HSSE (Kolk and Van Tulder, 2002; Atle Midttun *et al.*, 2007; Sharma and Hart, 2014; Chiarini and Vagnoni, 2015; Bruno S Silvestre *et al.*, 2017; Gosling *et al.*, 2017; Tseng, 2017).

However, as the pressure by internal and external stakeholders intensify the management will initiate a more accommodating or proactive approach (Schaltegger, Lüdeke-Freund and Hansen, 2012; Stinnett and Gibson, 2016; W. N. K. Wan Ahmad *et al.*, 2016). The strategy would be striving to create further outreach to all stakeholders through further enhancement of operation effectiveness. The industry will adopt industry leading practices beyond compliance to enhance its duty of care beyond the company boundaries to include contractor's welfare ISO/Standard. Also, more focus will be rendered to initiatives such as a wide range of CSR activities and projects of local content. This strategy will furnish the focal company to better collaborative approach with diverse stakeholders according to business need or image enhancement campaign.

The above two strategies mentioned above are necessary to maintain the corporate license to operate but still lacking the adequate focus on people and planet. It is more technically geared toward efficiencies, hence a more integrated process to address the growth on anxiety among all stakeholders. Management need to further enhance internal cross-functional integration of all corporate function and communication is also critical (Müller and Seuring, 2008). Also, the integration of internal and external stakeholder is necessary to achieve sustainable performance (Wolf, 2011). However, changes are needed for the organisations' philosophy and values to enhance corporate sustainability and dynamic capabilities and not only for the products, processes and practices (Adams *et al.*, 2015; Amui *et al.*, 2017). It also requires a shift from corporate social responsibility (CSR) to shared value philosophy (Kramer and Porter, 2011; OECD, 2011; Harvey and Bice, 2014; Wittmayer *et al.*, 2017).

The framework developed is comprehensive as looks on the entire business ecosystem of the supply chain within the context of oil companies in developing economies which currently missing despite the rising concerns of the role of oil and gas industry in climate change.

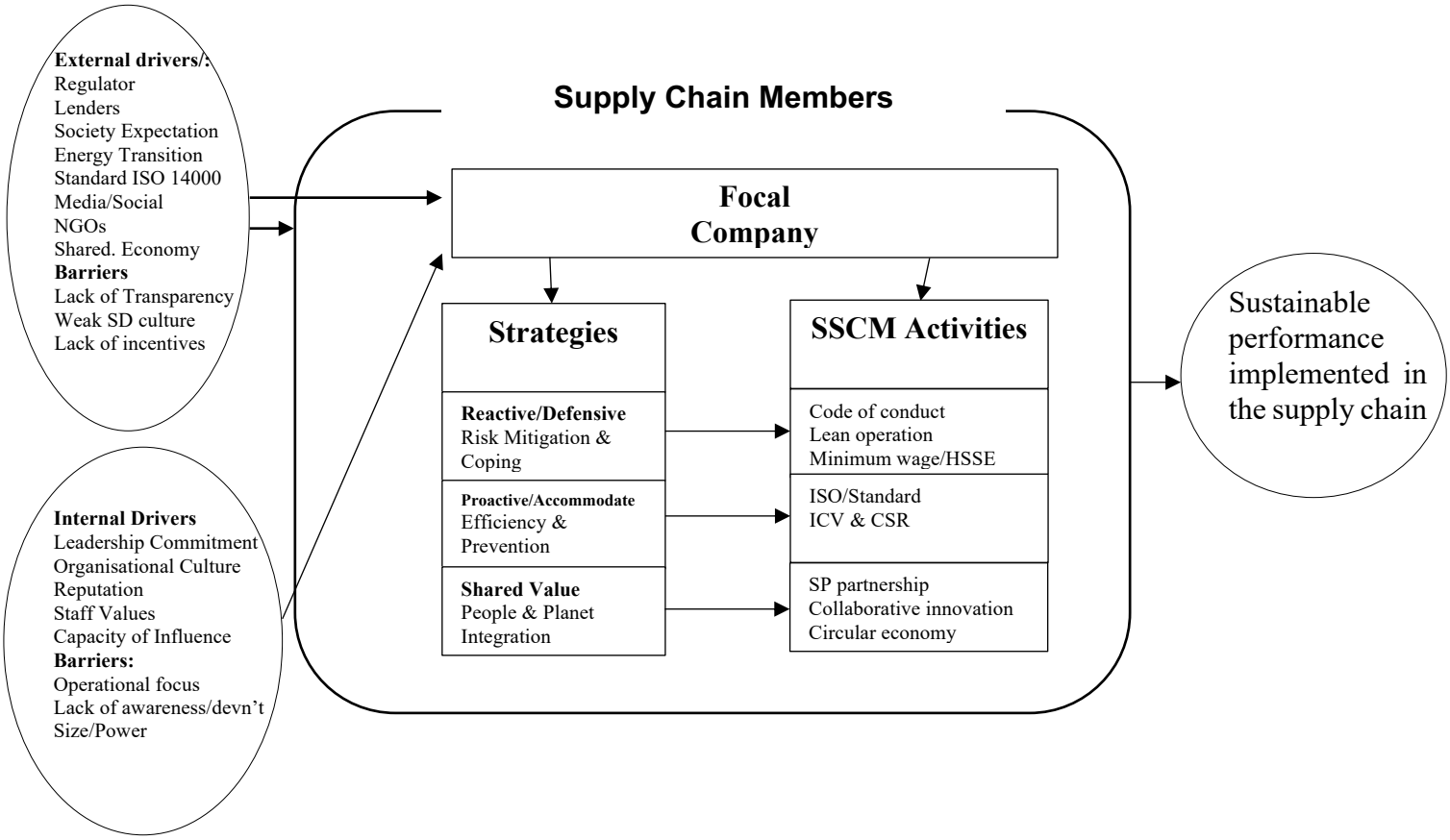

Fig. 3.8 The conceptual Framework

3.12 CHAPTER SUMMARY

This chapter investigates the role of focal companies in stimulating supply chain sustainability through sustainable strategies and practices. The context of the oil and gas industry is selected to demonstrate the role of focal companies' situation in an industrial supply chain. The literature review resulted in the development of a conceptual framework which will be guiding the empirical examination of the context in chapter five. Chapter four, next will be addressing the method the philosophical stand shaping the research paradigm of this study.

CHAPTER FOUR: METHODOLOGY

4.1 INTRODUCTION

Methodological studies point to the research design and the process of approaching a given research problem – including the approach to the literature revision and critique, the nature of the data to be collected and consolidated, analysed and understood (Bryman, 2006). This chapter aims to present a much more comprehensive account of the underlying philosophical and methodological approaches, techniques and procedures used in the thesis as a more extensive body of research (Gephart, 2004; Leitch et al., 2009). This chapter commences by describing the philosophical paradigms, particularly the interpretive paradigm and the rationale for its adoption in the thesis. It is then, followed by a detailed justification for choosing a qualitative approach. Subsequently, a detailed description representing the study context and defining the unit of analysis, the sampling and data collection methods employed in the research study, and the analysis approach and procedure. The generated data was enriched and triangulated with publicly available secondary sources. The data were interpreted using a thematic approach, with the findings reported and discussed in Chapters 5. The chapter then discusses the ethical considerations and precautions that were undertaken during the research process. Finally, the chapter concludes with a detailed evaluation of the research, its weaknesses, and how they were approached.

4.2 RESEARCH AIMS AND QUESTIONS

It could be concluded from the literature review that while there is an ample body of literature on the role of SSCM, strategies and practices emerging from several domains, the literature is fragmented and has not traversed to the development of an empirically derived coherent conceptual framework. Therefore, the need to develop a coherent conceptual framework in exploring the role of focal companies in Oil and gas industry was highlighted and constructed to further empirically validated and adjusted to address the highlighted gap. Thus, the aim and research questions will guide the development forward.

Research Aim

To develop an integrative framework that provides a holistic understanding of the key factors that impact sustainability success by focal companies in the oil and gas industry in Oman.

Research Questions

1. What are the key factors in driving or inhibiting sustainable supply chain performance in the oil and gas sector in Oman?
2. How do the key factors facilitate or inhibit sustainability performance in the supply chain?
3. How do they impact corporate strategies on supply chain performance?

4.3 RESEARCH DESIGN

The research design explains the procedure for carrying the study. It describes “where, when, from whom and under what circumstances data were obtained” (Kerlinger, 1986: 279).

The research design is a set of steps that aim to connect the main research arguments with the right philosophical stance and link the research questions to the data collected (Punch, 2014). Scholars over the years have eluded to diverse approaches in classifying the research design but in concurrence to the approach adopted by Saunders, Lewis and Thornhill, (2009), Lyon, Mšllering and Saunders, (2015). Figure (4.1) represents the research onion as research philosophy related to the development of knowledge and the nature of that knowledge.

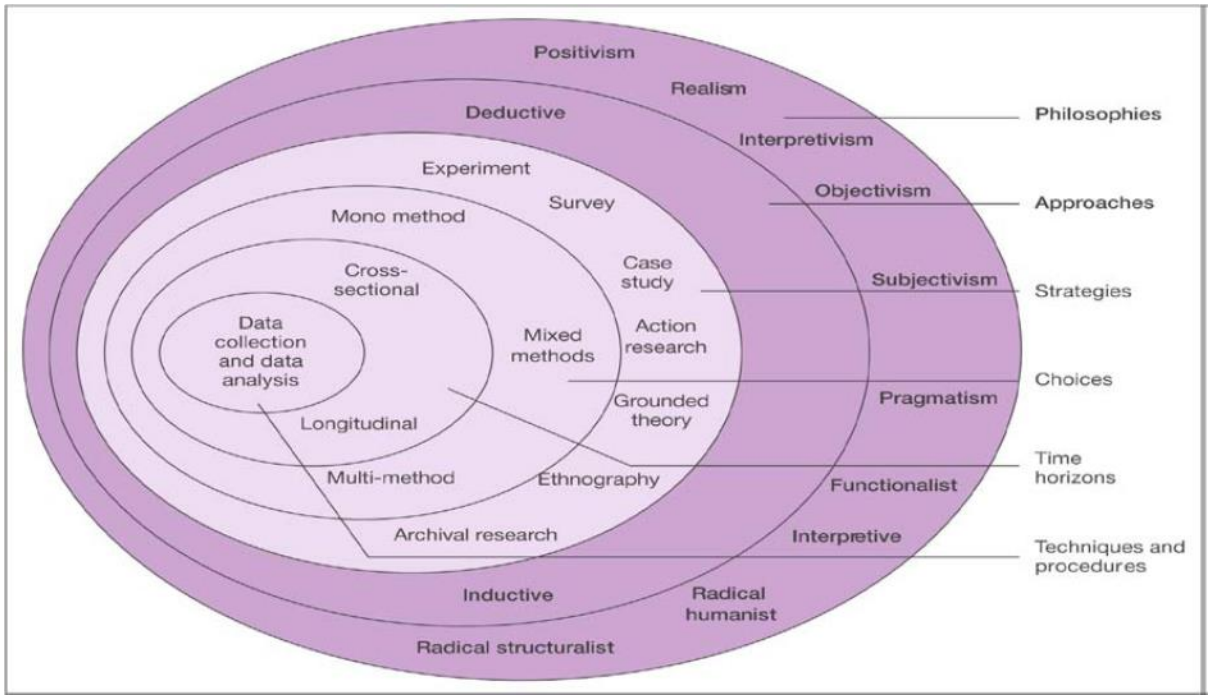

Fig 4.1 The Research "Onion": Mark Saunders, Philip Lewis and Adrian Thornhill 2009:108

4.4 RESEARCH APPROACH

Social sciences involve either a subjective or objective approach to research. Under these two major philosophical approaches, there are a group of core assumptions concerning the ontology and epistemology of the reality being investigated. The ontological assumptions are about the nature of reality and address the following questions; what the form and nature of reality is, what can be known about that reality and is it given or a product of the mind (Ponterotto, 2005). On the other hand, epistemology is concerned with the relationship between the "knower" (the research participant) and the "would-be knower" (the researcher). Epistemology addresses questions such as what forms of knowledge can be obtained, how to sort truth from falsehood, and can knowledge be acquired, or must it be experienced? (Ponterotto, 2005:127).

Starting with the deductive-inductive approaches, Saunders, Lewis and Thornhill, (2009) opine that deduction moves from the general to the specific. It moves from a pattern that might be logically or theoretically expected to observations that test whether the expected pattern occurs. In this vein, Liehr and Smith, (1999) associate most theoretical frameworks with quantitative research, which in turn tends to rely on deductive reasoning, whereas most conceptual frameworks are associated with qualitative research – mainly utilising inductive reasoning. Thus, a researcher following a deductive approach starts by specifying the theory

guiding the study – in the process, citing the main points emphasised in theory, and illustrating how the main aspects of the theory relate to the research problem. In giving an exposition of the theory, one needs to bring into the discussion the main proponents and detractors/critics of the method to offer a balanced argument. However, it helps when a researcher successfully demonstrates that despite criticisms of the theory, it is nonetheless supported by other experts in the field, particularly concerning research problems of the class of the one the researcher is pursuing.

4.5 RESEARCH PARADIGM

Determining the philosophical paradigm in which the research is located is essential to build meaningful insights to the reader of the thesis, and to waive any philosophical confusion. Morgan and Smircich, (1980) explain that being in a particular paradigm means to view the world in a particular way. It is the underpinning assumptions of this philosophical paradigm which informed the process of the research inquiry from start to finish. Smith, (2011), explain that the quality of management research and the study design are determined by the experience of the researcher to think within the philosophical premises during the research process. Therefore, the chosen paradigm will reflect how the thesis has been designed, how the data was both collected and analysed, and how the research findings were bestowed (Creswell, 2013).

However, before presenting a detailed description of the philosophical stance and assumptions of this research, it is necessary to allude to the historical and continuous debate between philosophers in the social sciences with regard to the nature of the social world, the extent to which one can know about this reality, and how one can reach at this knowledge (Johnson and Deberley, 2000). The underlying assumptions regarding these elements have grouped scholars into various schools of thought that seldom overlap and oppose with each other (Ponterotto, 2005). While acknowledging these contests and the variations in these schools of view, the aim is not to discuss the history of these philosophical debates, nor to take part in these never-ending 'paradigm wars' (Punch, 2014), as Johnson, Onwuegbuzie and Turner, in their observation called it the "antagonism between paradigms is unproductive." (Johnson, Onwuegbuzie and Turner, 2007:117). Therefore, the aim here is, only to furnish the underpinning rationale for the chosen paradigm to inform this research.

Smith (2008: 4) defines paradigms as "schools of shared assumptions, values and views about the phenomena addressed in particular sciences". The Quantitative and Qualitative research paradigms are the most commonly cited by researchers (Guba and Lincoln, 1994; Denzin and Lincoln, 2002; Johnson, Onwuegbuzie and Turner, 2007; Bitektine, 2008; Hancock, Ockleford and Kate, 2009). Baker and Edwards, (2012) argued that qualitative research methods diverge from quantitative approaches in several material respects, not the least of which is the latter's stress on numbers. Quantitative researchers apprehend a shallow band of information from an extended swath of people and seek to objectively use their correlations to explain, predict, or determine and influence what people do. Qualitative researchers, on the other hand, usually study many fewer people, but probe more intensely into those individuals, contexts, subcultures, and scenes, aspiring to produce a subjective understanding of how and why people assume, ponder, role-take, understand and interact. Both research strategies offer possibilities for generalisation, but about different things, and both approaches are theoretically valuable. However, a key difference involves the "hypothetico-deductive" approach that oversees quantitative research versus the inductive paradigm framing qualitative research (Baker and Edwards, 2012:8). In trying to verify

hypotheses, quantitative researchers have finite ideas, before starting research, about the scope and aims of their projects.

Studies involving people's ways of life, "lived experiences, behaviours, emotions, and feelings as well as about organisational functioning, social movements, cultural phenomena, and interactions between nations" (Strauss and Corbin, 1998:11) are better studies in ways that generate qualitative data that are mainly descriptive and interpretative. In this regard, Strauss and Corbin, opine that although some researchers quantify qualitative data, obtained through techniques usually associated with qualitative research – such as interviews and direct observation techniques, qualitative data analysis refers "not to the quantifying of qualitative data but rather to a nonmathematical process of interpretation, carried out to discover concepts and relationships in raw data and then organising these into a theoretical explanatory scheme" (Strauss and Corbin, 1998:11).

Qualitative approaches to research in the social sciences are increasingly used (Frost *et al.*, 2010), and researchers operating in the context of discovery, are more open-ended, and often develop emergent empirical and conceptual findings in unforeseen ways. Thus, they may not know, in advance, how much data they need to collect till reaching an empirical saturation, although not always practical (Hill, Thompson and Williams, 1997). It is further observed as "All research is interpretive, and we face a multiplicity of methods that are suitable for different kinds of understandings. So, the traditional means of coming to grips with one's identity as a researcher by aligning oneself with a particular set of methods or being defined in one's department as a student of "qualitative" or "quantitative" methods is no longer very useful. If we are to go forward, we need to get rid of that distinction" (Schwandt 2000: 210). This point is supported by Johnson, Onwuegbuzie and Turner, (2007:117) in their observation that "antagonism between paradigms is unproductive." But they go further and posit that the integration of these two research paradigms give birth to a third research paradigm called mix method. However, Schwandt, (2000:206) has taken issue with these "paradigm wars," calling into question the need for this division or differentiation. In his words, "it is highly questionable whether such a distinction is any longer meaningful for helping us understand the purpose and means of human inquiry" (Schwandt, 2000:210). Therefore, having discussed the stand of scholars on paradigms briefly, I included in table (4.1) a high level, comparison adopted from Hancock, Ockleford and Kate, (2009). Next, I will further elaborate on the choice of paradigm for this study.

Academic research for environmental sustainability has evolved to present environmental sustainability through indicators as observable and quantifiable variables, reflecting the different ways in which a given activity can cause ecological impacts. Although the use of physical, chemical and biological proxies to assess the positivity or negativity of the pollution produced and resource consumed quantitively, they fail to provide the underpinning reasons or the forecasting of managerial intent or the strategic drive which would enable monitoring polluting behaviour (Albertini, 2017). In the preponderance of academic research cases, both the quantitative and qualitative methods have equal attention, yet where one is predominant, this is regularly the quantitative role (Molina-Azorín and Font, 2016). It could be further argued that most quantitative sustainability performance in SSCM studies (e.g. are based on corporate published data and cannot be considered as a true reflection of companies' actual sustainable performance (Gill, Dickinson and Scharl, 2008; Wirtz *et al.*, 2016; Ho Lee, 2017; Rentschler and Bazilian, 2017). In the previous quantitative research organisational performance was conceptualised as economic and human (productivity), ignooring ecological and social performance (Albertini, 2017). Systematic incorporation of sustainability criteria

into basic organisational concepts can expand researchers' organizational theory agenda by shifting the central problem for the field. The question of central concern then becomes-what drives organizations ecologically sustainable, not simply what makes them grow or more profitable? (Shrivastava, 1995).

Qualitative research	**Quantitative research**
tends to focus on how people or groups of people can have (somewhat) different ways of looking at reality (usually social or psychological reality)	tends to focus on ways of describing and understanding reality by the discovery of general "laws"
takes account of complexity by incorporating the real-world context – can take different perspectives on board	takes account of complexity by precise definition of the focus of interest and techniques that mean that external "noise" can be discounted
studies behaviour in natural settings or uses people's accounts as data; usually no manipulation of variables	involves manipulation of some variables (independent variables) while other variables (which would be considered to be extraneous and confounding variables) are held constant
focuses on reports of experience or on data which cannot be adequately expressed numerically	uses statistical techniques that allow us to talk about how likely it is that something is "true" for a given population in an objective or measurable sense
focuses on description and interpretation and might lead to development of new concepts or theory, or to an evaluation of an organisational process	focuses on cause & effect - e.g., uses experiment to test (try to disprove) a hypothesis
employs a flexible, emergent but systematic research process	requires the research process to be defined in advance

Table 4.1 Qualitative and Quantitative research (Adapted from: Hancock, Windridge and Ockleford, 2009:6)

A recent study by Molina-Azorín and Font, (2016) opined that quantitative studies are more dominant in sustainability empirical studies. It is further observed that prior sustainability studies have often adopted a quantitative method, a survey-based approach or a classical statistical method in their context (Shrivastava, 1995; Geng, Sarkis and Zhu, 2005; Hahn and Scheermesser, 2006; Buchholz, Luzadis and Volk, 2009; Martens and Carvalho, 2017; Vanalle *et al.*, 2017).

Previous studies focused a lot on making an empirical contribution through theory testing. They mostly followed the hypothetic deductive model, i.e. using theory to formulate hypothesis before testing those hypotheses with observation (Jantunen, 2005). Admittedly, one could debate that theory testing is especially valuable in management because some of the most implicit theories proposed in the literature wind up being unsupported by empirical research (Colquitt and Zapata-Phelan, 2007). Godfrey and Hill, (1995) have challenged the process of theory testing in strategic management studies for the lack of unobservable

constructs. Based on a review of transaction cost theory, agency theory, and the resource-based view of the firm, which are widely used by scholars in sustainability studies and hypothesis testing, they argue the positivists, who believe that theories containing unobservable constructs are only useful as tools for making forecasts and do not apprise us about the difficult structure of reality. They suggest realists should not use the evidence that a construct is unobservable given contemporary instrumentation as a justification for not striving to advance new and more beneficial instrumentation that can recognise the formally unobservable. Institutional theory has been successfully advantaged in judging for isomorphism and institutionalization in driving sustainability. However, Oliver has recently criticized it ‘‘for focusing on conformity rather than resistance, passivity rather than activeness, and preconscious acceptance rather than political manipulation in response to external pressures and expectations.’’ (Oliver, 1991:141). Furthermore, sustainability does not mean the same to every company and it was suggested by Hahn and Scheermesser, (2006) researcher should adopt a more qualitative and a differentiated view when looking at corporate approaches to sustainable development.

Therefore, despite the priority attached to sustainability and growing concerns over the global warming and the contribution of oil and gas companies, the subject has not been extensively studied (Burnett and Williams, 2014; R. George *et al.*, 2016; Ahmad *et al.*, 2017) and therefore, there is a need for qualitative research to serve as a foundation for better-informed policymaking and practices. Concerning sustainability and supply chain sustainable performance, previous studies were generally quantitative, and it is worthwhile employing qualitative research to assist the understanding of the phenomena at hand.

Stumpf, Sandstrom and Swanger, (2016) advise the research of sustainability to avoid methodological bias due to the nature of sustainability in principle and practice. They further argue that an aggregate of core sustainability principles with methods of practice that are flexible and adaptive to the particularities of diverse contexts is needed to strike a balance between rigidity and adaptability. Therefore, a systematic, yet flexible guidelines for collecting and analysing qualitative data to construct theories grounded in the data collected is best to address sustainability research.

The study is attempting to generate data in an interpretive way by investigating and involving people’s (managers and administrators) understanding of sustainability adoption in a corporate world, as well as about organisational functioning in such an evolving demand for economic viability, social justice and eco-friendly. It also strives to understand the interaction corporation (focal companies) endeavouring to achieve sustainable performance. Hence, this research is pursuing a qualitative inductive approach in developing a conceptual framework and then testing its concepts in a particular context.

The study followed the interpretive philosophical paradigm underpinned by the underlying ethical assumptions and the nature of research questions, and existing literature on the phenomena under investigation. Given the underlying aims of this research, the researcher undertook a ‘passionate participant' role and engaged in the process of interpreting the meanings, experiences, and perceptions of key leaders in the Omani oil and gas industry. Through this process, the researcher understood the reality of the Omani Oil and Gas sector context and how it shapes the leadership viewpoint. Guided by the ‘interpretive practise' school of thought, both questions related to how and what social reality were addressed. Through this approach, the researcher was able to pay close attention to the role played by the leadership in driving sustainable supply chain performance for supply chain members.

Guided by the underpinning philosophical assumptions and the underlying nature of the research questions, the research deemed the qualitative approach to be a suited method for answering the research questions. Embracing the qualitative approach responds to the burgeoning calls for incorporating this type of research into studies to enrich our understanding of sustainability performance in supply chain management.

4.6 DATA COLLECTION

4.6.1 Collection Process

The collection process is very critical in any research and because there is little empirical research examining the role of oil and gas focal companies in developing economies, in the integration of corporate strategies in driving sustainability performance (Hilson, 2012; Heede, 2014; Silvestre, 2015b; Hansen *et al.*, 2016; Voyer *et al.*, 2018) and the level of an organisation's interaction and engagement with its environment – which is often referred to as social responsibility or corporate social responsibility – has received little attention, especially within operations management (Parast and Adams, 2012; Kirat, 2015). Corporates in a strive to transform threats into opportunities use strategic thinking, by creating a competitive advantage based on socially and environmentally oriented projects (Raufflet, Cruz and Bres, 2014; Akhavan and Beckmann, 2017). A case-based approach using field studies to identify key trends and practices employed by the industry in Oman was used (Robinson, 2014).

Case studies can be administered with various distinct motives and have a distinguishing place in evaluation research in that they seek responses to research questions converged on 'how' and 'why' (Yin, 2010). The government of Oman, as discussed in chapter one and two, approaches to sustainable development is blended into government planning, reporting, programming and decision-making and has various national institutions that are formed to address sustainable development issues (Times of Oman, 2018). Oman has made a massive strive in driving sustainability to a new domain and claimed already scoring 13 out of 17 SDGs in 2019 (OmanObserver, 2019b). In the wake of declining oil prices, countries such as Oman, whose economy relied heavily on exporting oil, often underwent more sweeping losses resulting in slower economic growth than other developing countries due to, considerable part to the economy being concentrated in a single commodity, which often leads to volatility in their government funds which resulted in Oman currently cutting the state subsidies of public goods and utilities (Vohra, 2017). Also, Oman in it strive to building the nation human and economic capacity invested in building human capital and job creation but it might be considered not adequate to address the purging rise of unemployment among the youth (Djeflat, 2013).

Hence Oman is embarking on a very aggressive diversification campaign to lessen its dependence on a single commodity such as oil and gas. Oman's oil and gas sector will have to deliver a more notable role in addressing some of Oman's most constraining sustainability challenges, including creating higher value local content locally known as "In-Country Value" (ICV). Currently, the industry forecast total spends retained in the country that can serve business development, contribute to human capability development and stimulate more productivity in the Omani economy. Therefore, the oil and gas industry in Oman is under evolving pressure from the government, the society and the international institutions to address its unsustainable economic growth, social disparity and environmental degradation.

Selecting an appropriate sample is critically important when conducting field study research. Sampling decisions involve people, setting and social process (Miles and Huberman, 1994). Here, the conceptual framework guided the development of a thematic approach to understanding better unexplored dynamics regarding drivers of sustainability and strategies adopted by focal companies in driving sustainability performance among supply chain members. It was also to build and elaborate theory; a search for a context that could serve as an "extreme case" (Eisenhardt, 1989; Pettigrew, 1990) was necessary.

Extreme cases facilitate theory building because the dynamics being examined tend to be more visible than they might be in other contexts hence, applying this criterion the Oil and Gas industry was selected for the study. The industry was also, chosen because its activities and its ambivalent public perception present a good challenge for sustainability strategies adoption and let the researcher to explore practices and sustainability driving performance differences (Mendes *et al.*, 2014; Silvestre, 2015b; Hourneaux Junior *et al.*, 2017; Wan Ahmad *et al.*, 2017).

The research represents the segmentation of this industry by examining strategies in both parts of the industry mainly upstream and down-stream. The choice of these two groups maximized differences along two dimensions thought to be particularly relevant to the work of focal companies: upstream versus downstream, and high to low degree of society contact. The generalists, represented by upstream focal company, are primarily interested in the exploration and production using seismic activities, enhance oil recovery and efficiency maximisation and other techniques. In contrast, down-stream are in more community contact who focus on processing oil and gas. Therefore, it is particularly appropriate to use Oman as a case study to address the key research aim, objective and the aiding research questions.

Before conducting the required fieldwork, an interview protocol was developed by integrating the researcher experience with current practices described in the literature and the conceptual framework discussed previously. The interview protocol asked leaders and managers to discuss the role of exerted pressure on them by the industry stakeholders in accommodating sustainability in their strategies and practices in suppliers' selections evaluations, and monitoring. The interview protocol is attached in appendix (III).

Finally, the researcher wanted to study the dynamics within the industry. By controlling for organisation, the researcher was better able to see differences in strategies that were attributable to the industry sector and type (e.g., upstream-downstream) as opposed to those caused by differences between organisations. Further following the logic of choosing extreme cases, it was necessary to find focal companies that was known for its intensity in practising sustainability. When initially screening organisations, it was prevalent that the sustainability practices of this organisations were well known and highly publicised by local and international press, social media and gained many complementary awards locally and over-seas for their leading roles. Both members of and recruits to this organisation characterised it as demanding, high quality, and somewhat militant towards sustainability. Because of these characteristics, the organisations are labelled "focal companies." This excerpt from the current chair of an upstream company conveys the leading philosophy behind focal companies:

"I am from the old school, so I like the focal/leading company "commando" image. . .. This industry grew up to take care of national economy, protect the environment and create social and economic wealth for employees and society. Contributing to more than 75 % of national

GDP means taking care of sustainable operation is 24 hours a day, seven days a week. The sustainable development of nations does not stop hence the industry takes no holiday. Also, staff and community put the safety of their health and wealth in the industry hands to protect them and protect the future generation interest and expect us to leave this world for them without damage."

These organisations also needed to be operating within the Omani oil and gas sector as a context of study. However, within the sample, a various local, international and public and private-owned to check on diversity of drivers and barriers experienced by all within the same context to gauge the approach adopted. Therefore, taken together, this sample and context provided an excellent opportunity to examine the construction of sustainability drivers, strategies and performance.

4.6.2 Interview Procedures and Instruments

As discussed earlier, a qualitative method was employed in this study to achieve the research aims of attaining more in-depth insights on companies' challenges and adopted strategies through personal interviews, company records, and published data sources (Eisenhardt, 1989; Patton, 1990; Yin,1989). The interview process was preceded by a written request to selected companies through emails and followed by multi-phone calls to share and explain a brief of the research purpose, the expectation of the interview, time needed, and a highlight of the questions to be addressed.

Considering the vast location distribution of the target sample, site locations are dispersed over a vast geographical stretch, that involved commuting and time. Also, the industry is safety centric and access to site areas most of the times need safety inductions and rescheduling of meetings due to sites operational reasons. Interviews were varied in length and lasted between an hour and two hours, subject to availability of interviewees, quality and quantity of discussion. In many cases, an intimate approach replaced a formal/structured pre-planned approach to ensure the data collection and cover the areas required for informative and a satisfactory interview. Although the cultural norms in the Omani context discourage discussing or criticising government policy or business practices, the researcher saw high engagement and interest from interviewees to share theirs and their corporate perspective. Therefore, most interviews exceeded the expected time. All interviews were conducted separately to avoid any data bias. This was necessary in a culture of seniority respect present a cultural barrier.

Each site visited during the data collection phase last several days based on the availability of interviewees. Each visit began with a meeting with a senior executive in charge of a process related to strategy, purchasing and finance, human resources development, health, safety and environment (HSE), In-country value (ICV), external relation and sustainability managers. This was necessary to identify the critical elements of the companies' strategies, their market environment, challenges and aspired future for sustainability in the supply chain. It was also necessary to understand the approach and to assess the role of integration of companies' activities toward sustainability performance. In many cases, the interviews were extended to include a plant or office tours and discussion with other functional employees to assert the alignment of practice with strategy. It was also necessary, when possible, to validate and enhance collected data validity by reviewing corporate documents on ISO certification, sustainability reports, purchasing and human resources policies (Handfield, Sroufe and Walton, 2005). As shown in table (4.2), the diversity of companies within up and down-

stream, the management level presented different level of leadership and organisation structures necessitated a careful validation of the role and its relation to the topic of the study and supply chain performance.

4.6.3 Semi-Structured Interview

Semi-structured interviews were conducted to gather insights from the participants. In addition, in developing countries contexts, GCC and Oman, research participants often prefer face-to-face interviews to surveys (Al-Waqfi and Forstenlechner, 2014). According to Bell and Bryman, (2007), semi-structured interviews are most widely used for qualitative research and provide sufficient freedom for participants to express themselves and provide as many details as possible (Di Cicco-Bloom and Crabtree, 2006). Also, the fundamental reason for conducting face-to-face semi-structured interviews was to gain an in-depth illustration of the drivers and hindrances to sustainability and further support the findings of the literature review and the conceptual framework by exploring the views of oil and gas leadership (Sturges and Hanrahan, 2004). Interviews were designed around 20 basic questions (Appendix II) plus other questions that arose during the interviewees. Interviews lasted from one to two hours. Interviews were recorded using a tape recorder and I-Phone. The interviews conducted at the interviewee's work locations and lasted between 45 minutes to a couple of hours in length. The length of the interviews depended on the quality of data and the availability of interviewees.

4.6.4 Interview Population and Sampling

The oil and gas leadership and staff were the target population for the interviews. Purposive sampling was used to select information-rich participants who provided comprehensive details in their answers to the research questions (Topp, Barker and Degenhardt, 2004). The sample was drawn from managers with responsibility for aspects of sustainability, strategy, policy formulations, health, safety, security and environment (HSSE), in-country value (ICV), corporate social responsibility (CSR), finance, human resources and external affairs. Interviews were seen as the most appropriate way to acquire data for this study. Therefore, the primary data collection method involved semi-structured interviews with O&G leadership, in-country value managers, responsible for the designing and implementating of the ICV training programs at downstream (n = 42). Table (4.2) indicates the participants demography.

Designation	**Number**	**Gender**	**Local/Expat**	**Percentage**
Chairperson	3	M	L=2 Exp=1	7%
CEO/Deputy CEO	10	M	L= 7 Exp= 3	24%
Manager	15	F4 M11	L= 13 Exp= 2	36% (10%F)
Section Head	14	F6 M 8	L= 13 Exp=1	33%(14%F)

Table 4.2 Participants' Demography

4.6.5 Participants Demography

Following a chronological order in how analysis of the sample was processed, the first section of the interview consists of companies' names and information providing the characteristics of participants. Table 4.2 participants' demography.

Based on the total characteristics of participants, much of the sample is male 76% (10 females and 32 males) and 14% are an expat (6). The sample depended on interviewees' availability at the time of the interviews, but the resulting percentage also can explain this gender gap concerning sector and company activities or can be related to cultural reasons, especially working in harsh, remote locations. The foremost challenges women encounter in masculine industries involve access to expatriate roles because of inadequate female networks, family concerns, managing work-life balance and often coping with loneliness (Shortland, 2018). The researcher's observations are compatible with the resulting gender imbalance were in all the participating companies there was a small number of women working in various positions from managerial, administrative to operation and production but mostly in companies' main costal offices. According to the graduate survey (2017), only 9% of Omani female graduates joining the private sector are employed in oil and gas companies. Therefore, the sample gender balance relates to the current percentage of female in the sector, but it does not necessarily tally with the number of female graduates in Oman. Considering the percentage of employment by gender in the Oil and Gas sector in Oman indicates that females constitute less than 10% of the total number of employees that is lower than the global female participation in the sector which is estimated at 20-25% (Opal, 2018). Also, according to the ministry of higher education in Oman, on students for the academic year 2015/2016, females aggregated 58.5% of the total number of students at higher education institutions, and they formed 36.6 of students in the engineering specialization. In the oil and gas sector, according to OPAL, (2018) 75% of employed graduates hold degrees in engineering and related studies, but female's percentage in the workforce is much lower in the sector despite the percentage of females in the engineering major is about the third of the total number of students. There is no doubt applying a gender lens to research on oil and gas sector, and energy-system and transitions will inspire positive change in many ways including harnessing innovative opportunities for the more inclusive and creative energy industry. It is argued that improving gender diversity in oil and gas and energy-decision making will spread political power and influence to promote a more sustainable society and better SSCM (Pearl-Martinez and Stephens, 2016). Therefore, the gender diversity in the sector warrants further review. However, further elaboration is presented in later section under social performance.

The chosen participants are from various types of technical and non-technical, local expats, male and female staff to bring a better diversity and inclusiveness and enhance generalizability and comparability of results.

The research used vast literature in sustainable supply chain management, strategies, and so on so forth. Secondary data types as depicted by Saunders et al. (2012:307) figure 4.2 below, related to the topic of discussion also were synthesised to complement the study and provide further evidence of sustainable supply chain performance. Also, published UN and sustainability report of corporations, websites of companies and national and international UN publication were considered the valuable and precious source to complement the understanding of the economic, social and environmental system in Oman.

4.7 QUALITATIVE DATA ANALYSIS

The mechanism of analysing qualitative data is generally left to the researcher (Saunders, 2011). The method used depends on the research topic, the personal researcher choices and the equipment, time and financial resources available. However, many authors have emphasised various approaches to analysing qualitative data (Saunders, 2011). For example, Miles and Huberman (1994) described the 'data display and analysis approach.

This approach comprises three stages of analysis: data reduction, data display and drawing and verifying the conclusion. Thematic analysis is another method that is broadly used. In this research, the primary data collected through the interview were analysed using thematic analysis as it offers a practical and flexible approach to examining and composing rich and comprehensive qualitative data (Braun and Clarke, 2006). As discussed earlier, the first stage of the fieldwork involved negotiating access to conduct interviews in the oil and gas sector, known to practice sustainability within and across supply chain members. The main interview questions were centred on understanding the drivers and inhibitors of apply sustainability and how focal companies managed to deal with such diverse stakeholders.

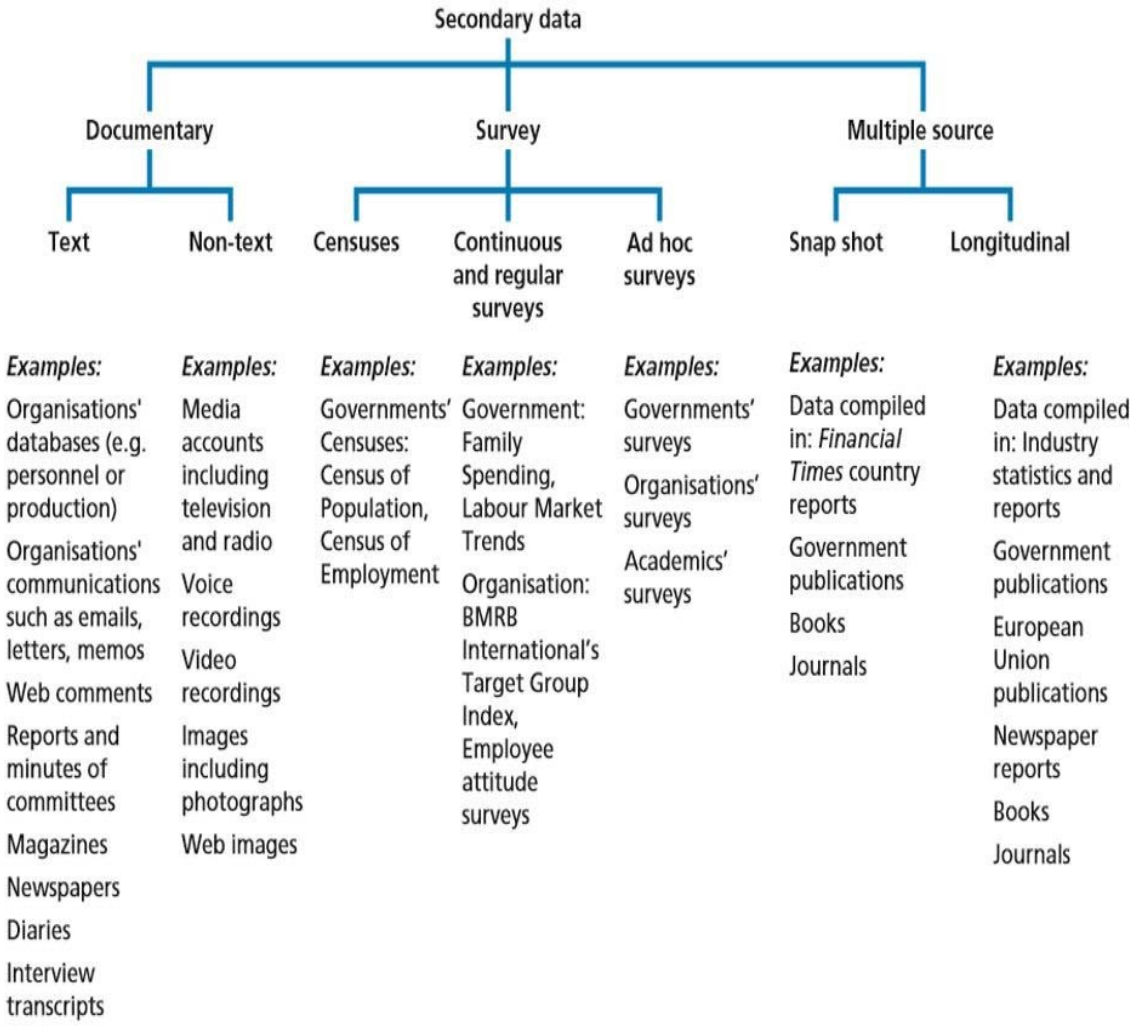

Figure. (4.2) Types of secondary data (Saunders et al. 2012:307)

Also, leadership in those focal companies were requested to discuss approaches and strategies in managing such drivers and inhibitors. They were further asked to elaborate on practices adopted to reflect supply-chain performances and how success and failures were measured. The pre-planned questions developed from the construct of the conceptual framework are listed in Appendix III. As the discussion progressed, further questions emerged naturally, based on information provided by the participants. Transcripts of notes were produced immediately after all interviews, and analytical notes were produced. English is the business and the industry of oil and gas official language; the interviews were conveyed in English, and a tape recorder and I-phone were used to avoid the risk of losing the recorded data (Beyea and Nicoll, 2000). To further avoid some of the known pitfalls of qualitative research transcribing, the researcher in this study was the interviewer and the transcriber (Easton et al. 2000). Further on the recorded proceeding were transcribed using online software called Trint and validated by the researcher. This was deemed necessary to guarantee confidentiality and data trustworthiness. Interviewees were assured that the purpose of the research was to discuss the industry contribution to the sustainability agenda and supply chain performance.

For ethical reasons, personal information and companies' information were excluded to preserve participants' rights. As detailed in Appendix III, determined categories during the coding were used as the main elements of the content analysis to label data. This led to the subsequent analysis approach using thematic analysis corresponding to the conceptual framework discussed in chapter three, which involved interpreting extract themes to create patterns to understand sustainability drivers, strategies, practices and performance. Following the ethical understanding of confidentiality and anonymity of participants, there is no mention of the companies they work for or individual names. To guarantee anonymity to participants and companies, the first company was named company 'C1' and its manager respectively 'M1', where all following company managers were coded with company C2, C3 etc., and Manager 'M2', 'M3' and so forth. The companies involved in this research represent the upstream and downstream oil and gas sector in Oman and are leading their supply chain with more than ten years' experience in Oman.

The interview data were classified into fewer and meaningful categories and thematically analysed to create a framework for the assessment of sustainability approaches effectiveness relating to the oil and gas industry and its sustainability performance. The inductive procedure in interviewing allowed the emergence of ideas, concepts and themes from the interview data involved also making specific observations of the data then identifying patterns with the observations and composing broad generalisations and eventually a tentative theory is identified.

The first step in the analysis was to identify the units of the analysis by breaking the interviews into useful chunks of data, words, phrases and sentences and coded each chunk of data. These codes accurately described the meaning of the segment of the data (open coding). Each code was given a unique colour to easily group codes with the same colour together. The objective was to reduce the long list of codes down to a smaller more manageable number of codes.

4.8 PRACTICAL CHALLENGES AND ACCESS ISSUES

Determining the sample population was a challenge due to the difficulty of covering the entire population and ensuring that the chosen sample represents the population. However,

gaining access to the sample and ensuring an acceptable degree of cooperation from the participants were additional challenges summarised below.

Saunders et al. (2009) advise the first-time researcher, like the incumbent, to give proper attention to access both physical and cognitive, including institutions, people and documents, as lack of attention might endanger the outcome of the PhD research. L'Anson and Smith, (2004), opine that access challenges may include the rank of the researcher, ethical entanglements, and obtaining access to organisations or respondents as the constraints and pressures of time and resources often compound access issues.

Clark et al. (1998) furthermore rationalises a choice of research method to the ease of access to the desired quantity and quality of respondents and their cooperation. In management studies, Buchanan et al. (1988) associate access challenge to the growth of field research by further education institutions, dealing with confidential company data and the harsher economic climate. They encourage the organisational researcher to display more "innovative, devious and opportunistic in the search for sites and data" as gaining access for research is more a "game of chance, not of skill" (Buchanan et al. 1988:70). The researcher followed the advice of Buchanan et al. (1988) in allowing adequate time on negotiating to gain access. The fieldwork took six months, from January to June 2019, which is long but typical for case study research in the oil and gas industry. Gallie (1978) stated that he spent nine months gaining permission to do case study research in a British oil-refining company.

Furthermore, the field researcher was entirely reliant on the goodwill of organisational 'gatekeepers. This dependence produces risks that are beyond the authority of the researcher, and which are hard to foretell or avoid. The researcher experienced a challenging circumstance to gain access to senior leadership in a major national oil and gas company due to the claim by the CEO, the gatekeeper, that the time and the number of interviewees requested indicate lack of understanding of the researcher of the time needed to deliver value for shareholders. Although the researcher familiarity with the sector and the leadership, it was a clear indication of leadership limited time to give to non-productive academic research activities. It was also the timing of the fieldwork during the first quarter of corporate financial reporting as companies and leaders are busy with preparation for shareholders committees and board meetings.

The researcher holds an executive role in the industry which was helpful to negotiate also access via the researcher's connection and network. That not always fruitful, as in another case, the researcher negotiated his way through the appropriate local management hierarchy. Local management, however, as a matter of routine, notified the company's main headquarter in the USA of the study, and they halted it, against the desires and view of the local contacts.

On the other hand, the researcher has been most successful, where he has had a relative or a friend working in those organisations targeted by the research. Those persons most of the times managed to arrange access themselves, depending on their position, or they spoke for and acquainted the researcher to someone else in the organisation who can do this. That approach was advantageous to gain access to a more diverse group beyond the executive positions. It is often argued that the terms' research', 'interview' and 'publishing' have strong negative connotations, especially to managers. Most of the time the words have a stereotyped notion of exposure and humiliation, especially in an industry known for pollution and environmental degradation. It was the case in one of the international companies who declined the interviews and felt interviewing staff and publishing their revelation might

subject the company to liability. It was the case despite the assurance of the researcher that the script would be shared for validation of content accuracy, if deemed necessary, and conformity with the company code of conduct. Buchanan et al. (1988) associate block of access to researchers to time and confidentiality as gatekeepers in organisations often have opinions on these matters entirely different from the researchers' expecations. In cases where access initially denied, it was the researcher ability to convince the gatekeepers that both time and confidentiality will be managed professionally and indicated that the researcher has successfully dealt with them in previous studies without difficulty.

Furthermore, the 'gatekeepers' often given assurance of the flexibility of timing as interviews can be held during lunch periods, or in the evenings, and with the consent of those concerned. As the interview commenced rolling the relationship, mutual trust and understanding were established, and restrictions are relaxed as respondents learn more about how their information is going to be used. In other words, the concern with commercial and technical confidentiality can reflect interviewees' lack of understanding of the research process and usually disappears during the interview.

Gaining access to elite settings and individuals like the one in executives' role also posed further challenges to the researcher. Executive elites are regarded as particularly tricky because they, by their nature, "establish barriers that set their members apart from the rest of society" (Welch et al. 2002:614). In these circumstances, the researcher draws attention to his institutional affiliation, used personal connections where possible, and obtained an influential "sponsor" like the minister of oil and gas, whose endorsement of the project was to ensure the cooperation of the rest of the industry.

Also, and as stated previously, expanding the interview process to cover other geographical areas beyond the company's headquarters in the capital Muscat involved travel to such locations which lasted over 5 to 6 hours round trip which required more time and effort as Oman is a big country.

Following up and securing interview slots with participants was another challenge and involved a lot of facilitations with personal assistances and security systems. This incurred high costs as telephone calls and travel in Oman are relatively expensive

4.9 RELIABILITY AND VALIDITY

The concepts of validity and reliability are among creating a check and balance of any study. The quantitative research approach has typically defined, and established structures and methods of data collection associated with this approach. However, the case differs for qualitative research because of the inherited flexibility, freedom and spontaneity given to researchers in the procedures and methods of data collection (Taneja, Taneja and Gupta, 2011). There are several challenges in conducting qualitative case research: it is time consuming; it needs skilled interviewers; care is required in drawing generalisable conclusions from a limited set of participants and in ensuring rigorous research. Despite this, the results of qualitative research can have a very high impact. Unconstrained by the rigid limits of questionnaires and models, it can lead to new and creative insights, develop new theory, and have high validity with practitioners ± the ultimate user of research (Voss, Tsikriktsis and Frohlich, 2002). However, qualitative case research enriches not only theory, but also the researchers themselves. Through conducting research in the field and being exposed to real problems, the creative insights of people at all levels of organisations, and the

varied contexts of cases, I was as a researcher, personally benefited from the process of conducting the research. The researcher developed a good rapport and trust with interviewees through conducting the interviewees in places of comfort and choice, which mainly resulted in personal visits to participants workplace. Conducting interviews in such an area of choice encouraged participants to give ample time. This has resulted in meetings lasting between an hour and two hours with a lot of rich insight. The interview questions built on and clarified the discussion as it progressed. Furthermore, the confidentiality of the study was assured, and participants were offered to review the scripts if deemed necessary.

4.10 ETHICAL CONSIDERATION

4.10.1 Ethical Approval

The University of Brunel London ethical procedure was adopted for this research. The ethical procedures addressed issues of participant confidentiality and privacy and mitigated potential risks of inclusion and diversity, especially within the context of Oman. The author is savvy of the local and multinational culture; hence, all cultural issues were identified early, and a process to minimise this risk. The Research Ethics Committee in the University of Brunel London approved the letter and participants' consent form in late 2018.

4.10.2 Anonymity and Confidentiality

The participant's data was secured and stored and protected by a password in the university server. Data integrity and anonymity was most critical and ethical consideration was followed in line with guidelines of Brunel University. For anonymity, respect for participants' confidentiality and privacy, the recorded interviews were transcribed using online software called Trint (Lancaster, 2017). It was essential before the commencement of the data analysis; the transcribed interviews were validated to make sure that data is analysed objectively and without misrepresentation.

Many scholars demonstrated that anonymity has the additional benefit of maximising authenticity, reliability and moderately gaining responses when participants are faced with sensitive topics (Babbie, 2007; Singer et al., 1995). The researcher made sure that participants are offered in anonymity and confidentiality and allow them to withdraw at any phase of the interview. Therefore, all names and addresses of participants and their companies were removed.

4.11 CHAPTER SUMMARY

This chapter highlighted the study philosophies and paradigm and is conducted through an inductive qualitative, method approach. This involved interviewing officials and managers and integrating the results. Therefore, the design of the research involved data collection via in-depth semi-structured interviews as well as publicly available documents, corporate websites and reports. Purposive sampling was used to select information-rich participants who provided comprehensive details in their answers to the research questions. The sample included 42 active representatives of the various stakeholders within the Omani Oil and Gas focal companies. Thematic analysis was employed to analyse interview data.

Finally, the chapter describes the ethical research procedures taken. Chapter five next present the qualitative analysis and results of the data collected

CHAPTER FIVE: DATA ANALYSIS AND DISCUSSION

5.1. INTRODUCTION

This chapter aims to assert the influence of factors related to sustainability discussed earlier and know their link with performance in the supply chain context.
The results shed light on many aspects related to the Omani oil and gas context and management perception of their companies in practising sustainability within companies' boundaries and across supply chain members. Also, the results cast a spotlight on the role of the focal company and related sustainability practices in driving sustainability performance among supply chain members, as indicated by interviewed participants. It also reveals how sustainability pressure could drive or hinder strategies and, consequently, performance interpreted by the interviewees.

The upcoming sections backed up with observations on sites during data collection, corporate online data, and annual reports explain sustainability drivers found patterns and the link between different themes.

5.2 DRIVERS AND BARRERS FOR SUSTAIANBLITY PERFORMANCE

The drivers and barriers for sustainability performance in the supply chain in the private sector of the oil and gas industry are discussed under two primary and distinct themes which emerged from the data. These are external and internal drivers, as presented in Appendix (III). The thematic interpretation of these two themes with further sub-themes associated with each central theme. Interview data were analysed inductively using a bottom-up approach which means the codes were not predetermined but emerged from the data. Although the conceptual framework guided the work, this was considered a particularly useful method as the subject in the study context is an under-researched area and the participant's views on the topic are not known (Braun and Clarke, 2006).

The interviewees both upstream and downstream of the oil and gas sectors bring a long list of drivers and barriers to sustainable supply chain performance as exhibited in the concept map as sub-themes. The analysis of the interviews revealed that there were two main types of drivers which affected the focal oil and gas companies drive for sustainability performance in Oman. These are External and Internal drivers, as shown in Appendix (III) and discussed below. For external drivers, issues like regulatory system, industrial standards, shareholders and lenders, society expectations, energy and transition, transparency and social media. Internal drivers were leadership commitment and organisational culture staff support, brand image and transparency. Based on the interviews, there were many barriers that resulted in causing hindrance to sustainable performance. The concept map is employed to facilitate the reporting of the analysis findings and discussion. Each main them with its sub-themes are analysed and discussed below.

5.2.1 External Drivers

The discussion with interviewees was to understand whether the oil and gas sector has experienced any external pressure from outside of their boundaries of control and did it impact supply chain sustainability performance and how they managed to mitigate such influence or hindrance. In general, there was an agreement amongst the interviewees, both

upstream and downstream of the sector, that the external pressure was instrumental in driving sustainable supply chain performance. All upstream and downstream respondents agreed that the industry is facing a growing challenge from multi external factors some of them related to the country other to the industry. An upstream official state:

" The 'company' is encountering rising complexity, capital intensity, emerging markets, funding limitations and calls to generate more local employment opportunities.....new business environment characterised by weaker oil price, digital disruption and mounting climate change pressure.". (C1M1)

A study by Walker et al. (2008) highlighted that factors that drive or hinder organisations from implementing green supply chain management initiatives are regulation, competitors, customers and society. Government regulations also drive the purchasing and supply management sustainability (Giunipero et al. 2012). A recent systematic literature review by Saeed and Kersten, (2019) confirmed that regulatory and market pressures are the most dominant drivers of SSCM and sustainability practices.

The participants explained that external pressure was practised on them from vast external stakeholders through regulatory agencies, industrial standards, shareholders, society expectation and the growing competition in the energy domain. The two fundamental external pressures cited by the literature that serve as antecedents or drivers to sustainability practice adoptions are regulatory pressure and non-governmental stakeholder pressure. Fundamental to the distinction within these two sources of external pressure is whether or not firms require to be legally compelled by to act (Mathiyazhagan *et al.*, 2013), or if they are also responsible to voluntarily invest in sustainable practices to appease a broader group of stakeholders (del Río González, 2009). Therefore, the government regulations are a major driver and will be discussed next

5.2.1.1 Government Regulation

The state regulation was seen by all the interviewees both upstream and downstream as having a significant impact in driving the supply chain towards more sustainability-related behaviour. Omanis' regulation and policy regimes have contributed to the companies considering sustainable practices to accommodate such pressure. The respondents argued that in some cases, specific law or regulation was the stronger driver than others. This is summarised by C2M2 when explained how external pressure is driving the company to adapt to a new reality which had a significant negative impact on the cost of operation. It was stated:

" The increased pressure from regulators, especially in accommodating local providers and more local employment with the higher cost is creating more stress on the bottom line". (C2M2)

Therefore, the social element of sustainability is prominent in Oman and might reflect rising youth unemployment as stated earlier hence creating more pressure to regulate for more job creation and ICV. This is further reflected on the pressure exerted by the government:

" I think the directive from the government is unequivocal and trust me. We have very stringent Omanisation clauses and very stringent penalties, and these are checked very well by state audit institution and where perhaps we have been a bit lax in applying penalties or

discipline them, we have to justify. So, it is not something that is only a desire to execute it. It is also mandated, and there is a top-down directive." (C1M2)

This is also in line with what Bryde et al., (2015) and their argument for economic sustainability in the Middle East. They demonstrated that the Middle East region has one of the highest youth unemployment rates in the world. They further asserted that the GCC countries are the highest recipient of temporary migrants in the world has implications for social sustainability in terms of coherence and the fabric of society. Therefore, the government focus on local employers to address the undesired consequences is understandable and in line with trends. Kramer, (2012) intimated that the capitalist world is under siege as businesses are increasingly being seen as the leading cause of social, economic and environmental problems.

Mathiyazhagan *et al.*, (2013) also, reasoned that pressure from governments as broadly seen in the literature as an essential driver for the adoption of green supply chain management practices. While there are costs associated with the adoption of new practices, it appears that there are benefits to adopting SSCM practices in business environments with intense regulatory pressure. Participant from C4 expressed this:

"Companies should look beyond today as there are proven long-term benefits from sustainability practices are visible. Our planet is currently facing an increased pressure from adverse climate change and the industry implicitly held responsible". (C4M2)

Another participant sees the pressure as a cause of opportunities rather than risk:

" I do not foresee government pressure as a risk. I take the R out and put O, Opportunities. So yes, we have an unemployment issue. Yes, we have a corrosion issue. Yes, we have a financing issue. OK. So, what are the opportunities to create employment to address and resolve and become best practice or centre actors in corrosion? What are the opportunities to develop a more holistic funding model, and so forth? So, it is up to us to move in the spectrum of opportunities." C1M1

This is in line with the literature highlighting proactive efforts towards environmental regulation are more probable to be drivers of successful green supply chain management projects (Sharma and Vredenburg, 1998; Carter and Dresner, 2001). Environmental regulations are considered as a motivator to innovate and decrease the environmental impact at a moderate cost, instead of a reason for massive litigation (Porter and Van Der Linde, 1995; Kramer and Porter, 2011). Porter and Van Der Linde, (1995) argue that the view of 'ecology versus economy' is incorrect, as the needed innovation for meeting regulation sparks offsets, such as better production creation, more efficient material usage, or improved product yields and well-designed environmental regulations might influence to enhanced competitiveness. Conversely, it has been debated that win-win situations endure but are extremely rare and some might argue that the total cost of a company's environmental program might be clipped by the total cost of a company's environmental activities and programmes. Win-win situations may be growing progressively less apparent for many companies, which indicates a battle between environmental performance and profitability (Grankvist and Biel, 2007). Compliance- driven companies, which were in a reactive mode, did not appear to have integrated environmental concerns into their value chain processes as

thoroughly as companies which were initially motivated to do so (Handfield and Melnyk, 1998; Krause, Handfield and Tyler, 2007).

However, Walker, Di Sisto and McBain, (2008) consider regulation, industry-specific barriers and poor supplier commitment as external barriers. Anne Touboulic, (2015) and Walker and Jones, (2012b) further confirm that the barriers to environmental supply chain management encountered by firms tend to be both external and internal.

Therefore, the finding confirms with the previous finding that regulatory pressures are drivers for sustainability strategies and hence sustainable performance.

5.2.1.2 Society Expectation

Oil and gas firms are more aware of the necessity to obtain the trust of local communities and achieve a 'social licence to operate' in addition to permits and legal licenses (Wilson, 2016). The local society and society at large are presenting further challenges towards sustainability adoption in Oman. All participants indicated that society is creating allot of pressure towards sustainability practices. The C3M2 backs this by stating:

*"Local community is having a very high expectation and is growing multi-folds in recent times. It started with the provision of essential support like portable water for their herds and camels to seeking direct employment in the company despite limited skills and credentials.". (*C3M2)

Society is also seeking firms in the industry to create a balance between economic growth and industrial pollution prevention and a more sustainable society (Sueyoshi and Goto, 2014). Participant C1M1further asserted that:

"I think there is a local regional and global expectation particularly in our industry now which is you know under fire for climate change, and everything else has become increasingly unpopular as the tobacco companies are where we need to secure our social licence and social trust. And you only do that through truly understanding your stakeholders." (C1M1)

In a study of the intersection between society and oil and gas companies in Greenland, Smits et al. (2017) concluded that social, political and legal licenses determine the successful implementation of the industry activity hence trust and legitimacy by society are regarded as the underlying principles on which all three licenses of operations are based. Rezaei *et al.*, (2017) from a survey conducted in two national O&G companies from developing countries further asserts that stakeholders including society is a major driver for sustainability among SCM.

Although the pressure from the community is growing momentums, there is a concern from the focal firm's management that might be a hindrance to accommodate more national in the supply chain as skills and experience are limited, which managers argue might affect the corporate bottom line negatively. This was highlighted:

"Skill shortage is even more critical for the industry in areas like health and safety, and employment of unskilled labour with a low attitude towards HSE could prevail a detrimental consequence" (C4M4)

Companies are spending a lot of their wealth in addressing the skills shortage encountered by society demands for employment especially in green supply management (Tramarico et al. 2017). Also, the managers of companies who were interviewed in this study have exhibited an attitude of prioritizing competing stakeholders claim on the power that stakeholders hold, and the legitimacy and urgency of their claim (Mitchell, Agle and Wood, 1997). C5M3 highlighted:

"In a very diverse group of stakeholders and growing demands for support in current financial circumstances and austerity, we have to be selective and prioritise our support. Most of our CSR activities are aligned with government programmes and initiatives. Also, neighbouring communities mostly hold our licence to operate hence gets priority in job offered and business opportunities created". (C5M3).

Therefore, the government and societies in which company operate could influence the relationships the focal firm have with governments, customers, partners, suppliers and communities in the countries. BP, a leading focal oil and gas company, states in its sustainability report, (2017) in response to "How will BP respond to global change? States that:

"We want to build enduring relationships with governments, customers, partners, suppliers and communities in the countries where we work." (B P Sustainability report, 2017).

It seems all focal companies in Oman are experiencing pressure from main stakeholders but foreign firms or MNCs proffer further importance than local firms to all stakeholders' pressure. It was manifested in one of the responses of company C5M1, which stated

" We are guests of the community in Oman, and our behaviour is monitored by multi-stakeholders locally and globally. Our compliance is part and parcel of our code of conduct and the industry code. Therefore, the pressure on us is multi-folds." (C5M1)

This study also confirms Beske and Seuring, (2014b) finding that companies who follow sustainability in their business strategy use specific practices in their management of the supply chain, and it is related to the concerns of the quality of relationships inside the chain and the relationships to outside stakeholders as well. They further argued by investing in such practices, the overall performance in all dimensions of sustainability can be propelled.

The participant's views and contribution further confirm that stakeholder pressure is one of the most cited external pressures for sustainable practices in the supply chain (Müller and Seuring, 2008). The relations among these stakeholders can affect the costs, quality and overall achievement of a business (Gillespie, 2011). The stakeholders exerted pressure and mentioned by participants also fits with Donaldson and Preston, (1995) definition of persons or groups that may truly or potentially benefit or be harmed by the firm's actions or inactions. Governments, investors, suppliers, political groups, communities and competitors have all influenced the industry to react and adapt. Also, the level of company engagement with any of highlighted stakeholder group could indicate the saliency of the stakeholder, thus the actual and tangible pressure that they exercise upon the company. It is in line with (Mitchell

et al. (1997), who argued that stakeholder salience depends on the power that they hold, and the legitimacy and urgency of their claim.

Zhu and Sarkis, (2007) in a study of Chinese manufacturing companies, reveal that the industry has experienced increasing environmental pressure to implement GSCM practices. The pressure intensity and magnitude through the existence of market (normative) and regulatory (coercive) pressures affected organisations behaviour to adopt an improved environmental performance, mainly when these pressures cause the adoption of eco-design and green purchasing practices. Manufacturing companies facing higher regulatory (coercive) pressures tend to implement green purchasing and investment recovery. Also, competitive (mimetic) pressure existence significantly improves the economic benefits from the adoption of several GSCM practices with no harmful influences on environmental performance. Zhu et al. (2013) also further validated those institutional pressures had driven the corporation adoption of internal GSCM practices which in turn correlate to their external GSCM practices adoption. They further argued that GSCM practices do not immediately affect economic performance but can enhance it indirectly. Saeed and Kersten, (2019) conducted a literature review to distinguish and investigate drivers of sustainable supply chain management (SSCM) that encourage or influence organisations to engage in sustainability initiatives and implement sustainable solutions throughout their supply chains. They further confirmed that regulatory and market pressures are the most common prevailing drivers of SSCM.

5.2.1.3 Shareholders and Lenders

All participants have stated their shareholders have driven the sustainability within the company and among supply chain members. It is very prevalence in the statement made by an interviewee:

"As an example, the board had mandated that we allocate 1% of our capital expenditure on social investment and sustainability programs. I think that it is very honourable of them and notably to mandate it. So now when we have a particular project in a location 1% of the CAPEX that's used to uplift the community in that area through clinics or hospitals or veterinary services camel tracks installation of cat eyes on the roads to ensure safety on the road to Salalah. (C1M2)

Other participants see their shareholders are supportive in driving training and development for supply chain members and national skills upgrade.

"...the board does mandate and steer us in that direction. The other example is where the National Training Fund is mandated to put one point two (1.2%) of contract value for training for employment. It's another example of shareholders driven sustainability."C2M4

Shareholders and the board of directors are very critical in driving firms' sustainability agenda especially in the emergence of social paradigm, reflecting more comprehensive directors' responsibilities not only in meeting shareholders' interests but also addressing a wider stakeholders' needs (Chams and García-Blandón, 2019). Saeed et al. (2017) further argue that shareholders emphasise to adopt a specific level of responsibility and fulfil sustainability goals.

Lenders, mostly institutional lenders, seems taking a growing interest in the focal firms social and environmental conduct. This was highlighted mostly among the downstream focal companies as they are subjected to long term financing facilities. Participant C6M2 was very adamant that lenders are subjecting the company to social and environmental securities and demand external audits verification. The recent financial crises and the rise of climate change also highlighted driving lenders to further pressure companies for sustainable performance. This concurs with previous studies (Wilson and Kuszewski, 2011; Novogratz, 2017). However, that not the case for local lenders as the size and influence was perceived influential despite the recent government drive. This is in concurrence of previous finding of (Buckley and Rynhart, 2011) on Oman and in-line with Mahmood and Rizwan, (2018) finding in a developing economy of Pakistan. Therefore, the finding of this study also confirms the literature and previous research finding that institutional lenders are a driver and a contributing factor for energy transitions.

5.2.1.4 Energy Transition

It seems there is consensus among participants from the oil and gas industry in Oman that the energy transition is playing a significant part in the sustainability drive. This is mostly associated to the shift in social preference and governments policies, and new technologies will alter how energy is produced and consumed in the future in ways which are impossible to predict today (BP energy outlook 2018). The interviewees in this study highlighted that demand for global energy consumption set to increase by around a third or so by 2040 and hence the competitive pressures within global energy markets are intensifying. This moderate forecast is also among the scenarios by BP energy outlook 2018 and other oil and gas MNCs like Shell. It could be further argued that technological advances might expedite the industry ability to produce energy even faster than anticipated, be that in unconventional oil and gas, or renewables like wind and solar energy. This concurs with previous studies. Therefore, the finding of this study also confirms with the literature and previous research findings. Indeed, the continuing rapid growth of renewables is leading to the most diversified fuel mix ever seen, and diversified energy supplies will make for a challenging marketplace and more downward pressure on carbon emissions. This was summarised by a participant from focal firm in the upstream sector when he stated:

"the global drive for energy mix is creating and opportunities for the industry and challenge. This is providing focus on technical advances for more renewable. With climate debate growing momentum in recent time, cleaner energy sources will be dominating the industry discussion" C2M2

The current understanding of new sustainable development goals (SDGs) and the Paris Protocol have stressed the significance of resource efficiency and low carbon energy for obtaining a rising living standard and overcoming poverty (Lenzen, Malik and Foran, 2016). The participants also argue that there is no silver bullet that will achieve such dynamic of stakeholders' pressure and policies focussed on specific fuels or technologies are unlikely to be sufficient on their own. However, the participants in this study understand the complexity of the energy transition and the pressure it creates in driving sustainability. They all acknowledge the fact and argued that the industry will need a comprehensive approach encouraging improvements in energy efficiency, carbon pricing incentives for everyone as well as the continuing shift to a lower carbon fuel mix but more importantly a more inclusive approach to accommodate all stakeholders need. It was stressed the transition and growth in the sustainability drive in mobility is pushing industries beyond energy efficiency and

towards more interaction of fully autonomous cars with shared mobility. A recent regulation change in Oman towards the reduction of fuel subsidies resulted in a drop in conventional fuel demands but failed to boost technical innovation in product mix. However, it seems the industry is aware and willing to accommodate the change if it arises as one interviewer of oil retailer stated C7M3:

"Currently there is no regulation in Oman to mandate the provision of alternative but if the market picks on this, our global partner will mobilise their expertise to capture the market".

The findings also revealed that although cognitive, organisational and technical enablers moved integration of sustainability forward in the sample organisations, specific cognitive barriers considerably affected the attainment of full integration. This also confirms the study of George et al. (2016) of an oil and gas company in the Indian market. They argue the institutional pressures provided the impetus for the development of enablers towards sustainability, but certain cognitive barriers considerably affected the attainment of full integration within companies and across supply chain members. The study also shows that sustainability integration in performance management systems could lead to better management and control of sustainability performance in organisations. Therefore, this study confirms previous studies as well that energy transition is a factor in the drive for sustainability performance.

5.2.1.5 Standards

International standards and good governance may display adequate legitimacy amongst stakeholder groups to be regarded as appropriate risk minimisation mechanisms (Roberts, 2003; Rosen and Beckman, 2003). All companies in the sample use ISO standards to address legitimacy pressure. For example, C1 states in the public documentation:

"Wherever possible, we endeavour to measure our practices against a national and international benchmark, such as the ISO 14001 certification".

Another downstream company argued that the ISO standard is used for their lab to seek legitimacy by their buyers.

"The company use ISO/IEC 17025, which spells out the general requirements for the competence of testing and calibration laboratories. We use ISO 17025, to demonstrate to our buyers that we operate competently, and we can produce valid results. This also goes hand in hand with another quality standard we maintain such as ISO 9001." (C5M4)

The interviewee from another company in the upstream sector highlights that the company uses ISO 45001 to seek legitimacy and assurance on its occupational health and safety management systems (OH&S):

*" Our company is very articulate when it comes to the health and the wellbeing of our employees and contractors. The OH&S management system provides us with a framework for managing OH&S risks and opportunities. It helps us to prevent work-related injury and adverse health to workers and contractors' staff and to provide safe and healthy workplaces by exercising effective preventive and protective measures." (*C3M3).

The welfare of staff due to temporary facilities, especially in the upstream, is also considered essential and providing legitimacy to the companies' duty of care. This is further manifested in the company sustainability report (2017):

"The company has driven significant improvement in temporary accommodation camps (TCA) for contractors through a series of inspections." (C1)

The company reports that early inspection in 2014 has helped to identify non-compliance issues with TCA. This is resulted in increasing the number of audits from 82 in 2014 to 147 in 2016 compliance audits with embedded corrective actions. C1M3 elaborates more on this matter:

" The company is serious in addressing non-compliance issues. The TCA audits resulted in senior management of the company and affected camps to draw corrective actions plans and implementation delivery and timelines were closely monitored. Penalties were imposed on companies not making sufficient progress regarding corrective actions." (C1M3)

Contractors' welfare seems to raise further legitimacy challenge by other company in upstream. C2M3 highlights this by stating:

*"Our company is strongly advocating for contractors' wealth fear. In 2015 we launched the industry-first initiatives aiming to establish contractor welfare standard, especially for those working in the interior and with our supply chain network. It is our way of creating a caring environment among contractors' community. It is also to embed effective and caring labour practices and ensure personnel among our community supported following the highest international standards." (*C2M3)

There is increasing recognition of the necessity to ensure good organisational governance, healthy ecosystems and social equity. Therefore, companies' performance concerning the society in which it operates and to its influence on the environment has become an essential part driving sustainability and created a system of measuring its overall performance and its capacity to continue operating effectively. In the long run, all organisations' activities will depend on the health of the world's ecosystems and organisations are currently being subjected to higher scrutiny by their diverse stakeholders. ISO 26000, which present guidance on social responsibility, is also starting to get recognition among oil and gas companies. Despite consensus among all interviewees on the need to have standards and good governance to drive social sustainability, ISO 26000 adoption was not as advanced as the rest of the ISO suite of standard. Also, companies are selective in passing such requirements towards supply chain members — interviewees associated such limited application of ISO standard among contractors' communities to business need and critical contractors.

The risk management viewpoint is particularly essential for firms in a global economy where heightened demands of integration have widened the definition of the supply chain. This is because firms' brand image and competitiveness in the marketplace may be reliant upon their suppliers' practices that challenge the principles of sustainability (Matos and Hall, 2007; Mendes *et al.*, 2014). Scholars are developing consensuses that a systematic way to risk management can assist companies to produce sustainable benefits to all supply chain partners while awarding them competitive advantages over others (Teuscher et al.2006).

Companies integrating and implementing supplier evaluation methods on sustainability risks present opportunities in developing core capabilities, which lead to competitive advantage for firms (Foerstl *et al.*, 2010). Many different factors may motivate focal companies to adopt SSCM practices. The same factors also have an impact on the level of integration (quantity and diversity of initiatives taken) and intensity (suppliers involved) of the related practices in the supply chain (Font *et al.*, 2008). Hence, agreeing on the successful execution of SSCM practices is not an easy task. The literature lists many challenges to integration and implementation of SSCM, such as (Storey *et al.*, 2006; Linton, Klassen and Jayaraman, 2007; Carter and Rogers, 2008; Müller and Seuring, 2008; Morali and Searcy, 2013).

Among companies interviewed for this research the most frequently cited social KPI was comparable to the one adopted by the Global Reporting Initiative (GRI, 2017). However, the bulk of companies that mentioned this indicator implemented no company-specific data. Instead, they provided a company audit on minimum pay welfare.

Moreover, many of the related indicators focused on economic performance as they relate to local purchasing activities. The results also confirm with the work of Morali and Searcy, (2013). Morali and Searcy (2013) examined the degree to which companies have integrated sustainability principles in the management of their supply chain and the evaluation of supplier performance among Canadian companies. Their finding reveals that there are several challenges in integrating sustainability into SCM. Company reporting on supplier standards was investigated to shed light on the minimum acceptable standards for SSCM and only 50 % of companies cited at least one relative standard. Most standards cited were in the form of business codes of conduct. Also, in this research, all companies stated they are following, some code of conduct associated with supply chain management practices but was scattered and hardly considered a report on any standards.

Companies associated with MNCs like Shell highlighted the use of Shell HSSE & SP Control Framework. The standard highlights on the contractor management side the necessity of contractors providing services or goods to adhere to HSSE&SP. It makes the standard a pre-requisite for selection of contractors and contractors and suppliers are appraised and monitored on meeting the HSSE&SP requirement of contracts. An interviewee from company C5 confirmed their adoption of the HSSE&SP framework when stated:

" *...the company considers asset integrity and process safety management (AIPSM) a prime focus area but has yet to attain the performance we expect and demand fully. however, relentless management focus via letters of Assurance (LOAs) and quarterly Gamba and safety walks by management and helped to in significantly raising the attention and the profile of the AIPSM."* (C5M4)

Another participant from the upstream also shared the same initiatives by the company to address asset integrity and process safety through the introduction of

"Asset integrity process safety web portal and frontline supervisor safety walks." C1M4

This standard was further analysed to evaluate the degree of management's responsibility for SSCM issues. Reviewing companies' annual reports and websites, only two of the companies included a testimonial for holding a management mechanism in place that ties sustainability to their acquisition practices. In general, addressing the governance structure for SSCM is a marginal practice for corporations is rear in the sector. In the most significant companies'

cases, the governance structure was attributed to many other company functions, with indirect references to the supply chain. For example, C1, a company in the upstream sector reports:

"The company has a clearly defined management and governance structure for all major projects and in that regard strategic relationships have been developed with suppliers and contractors" C1M1 further supports this "I think what's good is that the sector is driving the standard for the other sectors. A presentation that the ICV committee made to the cabinet, which was oil and gas industry led, resulted in the Cabinet agreeing to a national training fund and more recently a national training centre for employment where the most significant impact will not be in oil and gas because as you know we're pretty well Omanised (localised) across the supply chain. But it will be in tourism and logistics and manufacturing and other sectors. So, although there is not a country law, there is a country best practice that has now been replicated to drive change in other sectors."

There are no doubts companies have experienced pressure and utilised some practices to ease that pressure but cannot claim they are truly sustainable. Pagell and Wu, (2009) also support the notion that no supply chain that satisfies all the criteria to be deemed truly sustainable exists at the moment but the industrial sector is experiencing more alignment toward sustainability (Pagell and Shevchenko, 2013). However, the principal difference between conventional SCM and SSCM focal companies lies in the pursuance of all three dimensions of sustainability, i.e. the way sustainability is perceived and integrated into the organisation (Harms et al. 2013). While SSCM organisations manage all three dimensions as equally important, SCM organisations, while using the TBL approach, tend to actively focus on the economic dimension (Schaltegger and Burritt, 2010; Taticchi et al. 2013). This further confirms that standards and governance are driving factors in the industry and companies both compliance to customers requirement, especially in downstream and retain corporate legitimacy.

5.3.1.6 social media

Social media is proliferating and presenting both opportunities and risks for organisations (Effing and Spil, 2016), and has been extensively considered as a public channel for firms to broadcast information (Tseng, 2017). The customers and the public are acquiring enormous volumes of diversified information through focal firms' official websites on firms' sustainable performance and development (Nwagbara, 2013; Kumar *et al.*, 2016).

All firms in the study have realised media in general and social media mostly have put massive pressure and contributed to the implementation and the performance of sustainability. It is very prevalence in the statement made by a participant:

" Social media is taking everyone off guard not only in its intensity but also the speed for reporting. We used to dictate the message to the public through proper channel, nowadays we monitor social media for the adversity of our process behaviour." C4M4

It seems that social media is driving international companies more profoundly than local ones and might be considered a new terrain which might be against corporate's international value. Nwagbara, (2013) argued that social media contributed to MNCs in Nigeria being more open and responsible for CSR which tally to an MNC operating globally but have dominance presence in Oman reflects in stating:

" W*e had, adverse social media recently, and it is a really difficult issue because those are our global values, and our global values are very clear in that line, but they are offensive locally. It is not our global values, but more of our global openness towards diversity causes offence locally. So, we must recognize that. It is also a question of law, so that is quite a difficult line to tread without somebody else picking it up. If we went too far in the other direction, then somebody in the Netherlands or something would pick up and say, (company name deleted) attitude towards diversity shifted ".* (C4M1)

This might be a local context-specific, and the understanding of cultural diversity varies from country to country, especially in the meaning of diversity a society of Islamic doctrine. However, social media is also evolved to drive government response too. Another interviewee clearly states this.

"Yes. So, the feedback you get from social media, it really enforces the feedback you get from the government, which is responding to the social media. .... the sort of government via social media is not necessarily how Oman wants to do things. However, the reality is more, and more of that is what is happening, and not just in Oman, but everywhere else. So, the idea that you can control the story the way Alastair Campbell used to in Tony Blair`s government in the first part of Tony Blair`s ministry, is. I don`t think it is possible anymore. How you deal with adverse social media - I don`t know". C4M3

Saeed et al. (2017) support the notion that there are external drivers supporting sustainable actions to achieve sustainable supply chain management (SSCM) goals. However, not all stakeholders have the capacity to drive firms to take sustainability actions. Some of them, like social media, may help organisations at least to be aware of sustainability issues (Saeed and Kersten, 2019). This is not the case in Oman as social media perceived very instrumental in driving organisation to act. This could be seen from a participant considering social media shaping the agenda not only locally but more so globally.

"*Social media is key. I mean communication engagement today is all about social media. The American elections was social media-driven, and everything else is. If I have an incident in the field, my stakeholders know before I know. Someone takes a photo, and it is out there, and it is then speculation starts, and social media is one of those things. Yeah, it is no good deed goes unpunished because as soon as you get involved, you have got to tackle all sorts of unprecedented and unexpected challenges then.". C1M1*

However, others say the process of managing social media differently and take a different stand from social and prefer to let it die naturally. This was shared by a participant:

"*.... there, is always a question on this if you have a social media storm, do you tackle it, or do you just let it die a death? And usually, these things die out by themselves, whether or not we respond to them". C5M3*

Interviewees, in response to the question of size and earning and social media response for companies miss hap argued:

" The media, in general, see the oil and gas having deep pockets and less sympathetic to anything we do. They are less forgiving towards companies' mishaps."C2M3

This might be associated with the perception of the company earning and profit maximisation of leading companies by society and local stakeholders. Blome et al. (2014) studied how the past financial and market success of a firm may affect the type of legitimacy pressures it encounters. They observed that firms with stronger market performance are more visible to society, and thus undergo a higher level of legitimacy pressure that drives a raise in their adoption of green procurement strategies. Interestingly, firm financial performance, purposed to lead to similar visibility effects as market performance, was not linked to increased use of green procurement practices and implementation of sustainability practices (Taylor and Vachon, 2018).

Also, the rhetoric of arrogance has pervaded oil operations for decades (Spangler and Pompper, 2011) and the Standard Oil Trust found that size is inadequate to exempt corporations of serving to public attention and interest (Boyd, 2002). The Deepwater Horizon drilling rig explosion and the ensuing oil spill induced substantial economic and environmental pollution to states on the U.S. Gulf Coast. British Petroleum (BP) suffered sharp public criticism for its part in the disaster and promptly attempted image repair strategies. These strategies centred on describing what they were arranging to fix the problem and compensate the victims but did not embrace strategies such as turning the blame to the other companies linked nor accepting blame (Harlow et al., 2011). Therefore, it is no surprise that oil companies consistently are marked among the least trusted corporations (Spangler and Pompper, 2011). The complexity of the oil business, huge profit margins, and environmental risk all work into the public's critical view (Lei *et al.*, 2015). With a growing demand for stakeholder dialogue and corporate transparency, oil companies must discover approaches to lessen the gap separating them from their stakeholders.
Therefore, it is clear from the participants discussed, and the supporting literature social media is evolving to be a critical factor in sustainability drive.

5.2.1.7 Transparency

The participants in this study indicated that pressure exerted on them by all stakeholders resulted in focal companies engaging in reporting practices as part of corporate's transparency. Their reporting practices include not only reporting to stakeholders but actively involving stakeholders and using their constructive feedback and input to both secure stakeholders buy-in and enhance supply chain processes. Focal companies engaged with contractors and suppliers in vertical engagement through HSSE and ICV related activities matrices reporting. Also, focal companies engaged with supply chain members in horizontal reporting and coordination through several industrial working committees and the industry only NGO called OPAL. OPAL and the ICV Project management office (PMO) engaged in establishing a common platform for auditing procedures and reporting, which was adopted by an industry coalition to enhance HSSE and other aspects of sustainability. It allows practical supplier sustainability audits to be performed consistently by all focal companies and supply chain network. It further enhanced transparency and supplier sustainability while reducing transaction costs for both the focal firms and their suppliers. The establishment of supplier's registration platform further enhanced uniformity of purchasing and contracting requirement's which enhanced further communication among all supply chain network. Participants especially in downstream feels the rising reporting of social media and the increase adoption of the means of communications pushed companies to be me active and transparent. This transparency drive has contributed to creating more internal commitment towards sustainability practices. This was clearly summarised by a participant:

Therefore, it is clear from the participants discussed, and the supporting literature social media is evolving to be a critical factor in sustainability drive.

"*Our plant sits in the middle of the city, and our operations are obvious by all. Plant set back, and tripping is normal. Also, we conduct annual maintenance which results in a big flare. However, we are very transparent with our community. The authority in town is kept informed, and we conduct frequent meetings with external stakeholders to keep them informed. I believe this way; we managed to sustain operation and reputation. Our transparency made us more accountable and committed towards sustainability" C5M4*

This is further confirms the study of Fernandez-Feijoo, Romero and Ruiz, (2014) who argue that stakeholders pressure enhances the quality of transparency of the corporates' reports. Therefore, the study confirms that transparency is a factor in the journey of sustainability performance

5.2.1.8 Sharing Economy

The evolvement of social media is driving business connectivity to a new domain and connecting with further ease consumers and businesses with instant information about the location and availability of products and services. It has provided platforms to overcome temporal limitations and fixed location barriers of traditional distribution systems (Ferrell et al. 2017). There is consensus among participants that sharing economy is driving energy business and sustainability for further consideration and might bring opportunities and challenges. Applications like LinkedIn has provided speed and saved corporates from cost and costly logistics. A participant states in discussion with a lot of excitement:

"New apps like Linked have opened a door of opportunity for talent acquisition. Nowadays, I can screen a candidate and shortlist for a job in no time. A process which took us months and often missed opportunities" C6M4

Other cited the ease of sharing systems and opportunity to access a vast range of services, covering a vast range of services from medical, accounting, riding and sharing cars and bicycle and the bulk of people appear to see the sharing economy favourably. This is also in line with Smith (2016), finding that ridesharing services are growing usage, with 15% in America, and nearly 72% of Americans have utilised some sort of shared or on-demand service with almost 71% of positive experience (Smith, 2016). The growth of the percentage of the sale through such platform is showing prevalence. This further tally with Steinmetz (2016) finding one-third of sellers in the sharing economy perform more than 40% of their revenue from such platforms. A similar finding by Ferrell et al. (2017) also grows optimism in sharing economy.

The participants highlighted a growth for such activities in this vane could be from homegrown and made activities/products and the creating of a niche market. However, they highlighted a barrier currently exists, especially in the corporate world in Oman in providing access to such financial transactions. This is summarised by a Millennial who was frustrated with the rigidity of the system.

"Sharing economy is growing globally. It provides ease and efficiency, but our corporate finance regime is rigid and outdated. It is so easy to quote code of conduct as a reason for not allowing the integration of such collaborative platforms."C6M4

However, this also confirms Steinmetz (2016) finding that not the same optimism is shared by all. The association of reliance upon independent contractors causes variation in the service with almost 72% to believe the sharing economy is not uniform (Steinmetz, 2016).

Other shares similar experience but see further opportunities and growth for corporate CSRs to support and grow, especially among the female community in Oman. They associate that to the cultural sensitivities of working women in rural places; hence sharing economies will provide social inclusiveness and economic growth. This might tally even more with Ferrell et al. (2017) finding that sharing economy is transforming the universe of the concept of employment, access and ownership and the regulatory, legal and ethical environment of the sharing economy is evolving with links that produce the need to reduce risks for all involved stakeholders. It is even more so with Millennials as they appear less enthusiastic in ownership than earlier generations and more enthusiastic about sharing (Badger, 2014; Dykstra, 2012; Shirouzu, 2016). Therefore, focal companies support the notion that new dimensions of sustainability are growing prevalence and generating momentum, especially among younger generations. The current legal frameworks should be more accommodating to support better performance.

5.2.1.9 Maintaining the Licence to Operate

Community resistance to resource extraction projects seems to be increasing, even where compliance-based social impact assessments (SIAs) and generous philanthropic benefits are in place (Harvey and Bice, 2014). The societal relationship between communities and focal companies was an area of length discussion with all participants. This resulted in participants highlighting a new driver towards adopting sustainability. The concept of maintaining the social license to operate came repetitively in discussion with participants with different variation both within and across companies. Maintaining the licence to operate (SLO) was perceived by all as a significant driver to adopt sustainability within companies and across the supply chain. The concept is not new in its content and considered as a social contract and a pre-requisite for operation in society (Shocker and Sethi, 1973). Although the term is used but often is poorly defined and understood (Harvey and Bice, 2014; Raufflet, Cruz and Bres, 2014), and there is an ongoing deliberation about whether the concept itself in its varied forms is useful (Owen and Kemp, 2013). What is explicit in this study, however, is that it is widely used. It is also a discussion with scholars too as it cannot be defined by regulation but more based on a site's overall social performance on a continuously managed basis (Prno and Slocombe, 2014).

Among the participants in this study, C1M1, C2M1 and C5M1 seemed well vested with the term and used many phrases to express what they assumed by licence to operate. They showed a clear preference for terms such as acceptance, approval and support. Retailers and filling station used terms such as permission and consent for SLO. This is understandable as most of their activities imbedded within societies and among dwellers. In downstream, mostly in more prominent focal companies, the core of most definitions of the licence to operate was based on majority acceptance held by community and other stakeholders. This is again could present the proximity of industries to society, as most of them are coast based. The coast is densely populated in Oman, as discussed in chapter two.

The downstream also representatives outlined a more conventional view of a licence to operate. They held the view that the process of obtaining a licence to operate can be highly dynamic and influenced by the different stages of the company life cycle, diverse stakeholder groups, and how the company addresses new issues or matters. Representatives of the sector stressed that trust developed across time and, with it, a licence to operate. Once trust is secured, all interviewees agreed that managing an SLO was dynamic. C5M2 emphasised the dynamic of SLO management when he said:

"*SLO is a trust we developed over the years and need continuous monitoring. We are renewing that licence every day, and I believe when you know that, it matures to be a lot more obvious to practice it".* (C5M2)

C6M3 further argued that:

" SLO needs continuous monitoring and adjustment to maintain it. it is difficult to manage as demand keeps shifting."C6M3

Some interviewees, in downstream mostly in technical and operational areas, related SLO to good CSR, and sustainable development practices.

"The concept of SLO is sustainability to me. It is how you want to phrase it. The community will accept you only if you act sustainably." (C6M2).

Although up-stream members considered SLO to be new words for existing and well-known concepts. However, both C2 and C3 representatives recognised that the relational aspects of a social licence to operate was its principal differentiating feature to CSR.

"It is unquestionably more than the statutory licence which is formulated by the government. It is a licence secured by companies from stakeholders and community"(C2M5).

Recent research on SLO support and provides evidence for the essence of the importance of relational factors and understanding of cooperation in decision-making (Moffat and Zhang, 2014). The participants also perceived the possible intersections between the social and legal licences to operate, similar to that documented by Parsons, Lacey and Moffat, (2014) Parsons et al. (2014). Some interviewees replies are in line with Bice, (2014) who explained this interconnection as social licence to operate, being more relevant to a company performing exceeding compliance and legislative requirements. C3M1who could further outline how they continually seek to secure a local level SLO, emphasising their focus on relations with communities and stakeholders directly affected by their operations as being their most important priority:

"...the most relevant people, as far as social licence to operate, are the people who reside near our operation, and are potentially affected from an environmental or social perspective" (C3M1).

This view is also supported by Hall *et al.*, (2015). Boutilier and Zdziarski, (2017) further asserted that socio-political risk of stakeholders within the vicinity of project or industry is one of the most unpredictable types of risk faced by project managers. They further indicated that companies need to sustain the license to operate through more engagement with influencing stakeholders.

"I think you need an alignment. Fortunately, we in (company) have an alignment. I mean in the end it's not just (company name) companies as well. But there is a local regional and global expectation particularly in our industry at the moment which is you know under fire for climate change, and everything else has become increasingly unpopular as the tobacco companies are where we need to secure our social licence and social trust." C1M1

It might also be argued that leading companies need to give priority to local communities as a holder of their licence to operate. For example, the mining industry like Anglo American Plc which share similarity with O&G has claimed to make more local benefits to local economies (Samuel, 2003). Similar comparison was made by C6M1 when he stated:

"The company spend more than 75% of its earning in the country through royalty, taxes and support in-country value".C6M1

A local leading firm C1 highlighted in their annual report that the

"Company worked hard with both domestic and international partners to open a string of Omani factories and workshops and manufacture, assemble and repair vital equipment and parts for oil and gas activities, to shorten our supply chain and pave the way for more employment and training opportunities for local.". C1

C1M3 further highlighted that the company strive to create jobs is growing every year. He stated

"Another proud achievement is, the way we have ramped up our ICV efforts to support the drive for a more sustainable economy. .... we are creating thousands of jobs, training and redeployment and transfer opportunities for Omanis. In 2016 the company generated 14,146 jobs, and this year we are pushing the boundaries to double the number."C1M3

Therefore, the discussion above indicates that the new term SLO is widely seeing acceptance in the oil and gas industry after being prevalence in the mining industry. The oil and gas industry, mainly downstream, are within communities and dwelling areas which is to the contrary of upstream, which mostly in the remote and inhabited part of the country.

5.2.1.10 Climate Change and Natural Hazards

The impact of climate change is an area of concerns and was highlighted by the participants in this study as another driver for sustainable supply chain management for the industry and Oman and. Could be related for the energy transition drive. C5M4 was very vocal on sharing concerns over the rise of recent weather calamities and the need for local supply chain capacity and sustainability:

" The recent weather calamities have brought to the business a new risk and concerns to sustain the industry operation. Only in last few years Oman was struck with two major cyclones which halted the industry adversely. C5M4

Others saw climate change and its adversity a good driver to build a robust supply chain within the country to overcome business disturbance and enhance business continuity. This highlighted by C6M1:

"Building a local reliable and sustainable supply chain is not only good economically but also socially and environmentally beneficial. It is a win-win as we reduce operational disturbance, reduce our carbon footprint from reduced transit shipment and ease the social demands for jobs" C6M1

Also, empirical evidence from (Geels, 2011), Waisman *et al.*, (2014) demonstrates the significance of the subject matter in driving sustainability. In June 2008, floods in the USA Midwest closed a grain and ethanol plant, giving in delayed shipments of corn syrup, soy meal, ethanol and grain. The rising frequency of hurricanes and the severity of floods can often be linked to climate change, although also (human-made) deforestation can create floods and droughts (Halldórsson and Kovács, 2010). Halldórsson and Kovács, (2010) further asserted that logistics and SCM surely have a role to perform in the climate change hence the transition to the low carbon economy. However, it seemingly requires experiencing transition itself to be able to cope with the evolving agenda. Humanitarian supply chains normally react to such disasters but are also troubled with preparing for them. Preparedness involves helping societies adapt to climate change (IFRC, 2009). Although some might argue the impact of climate change necessitating further study, there is an acknowledgement that there is a social cost for carbon and that social cost must be internalised to the prices that consumers and firm pay (Pindyck, 2013).

5.2.1.11 Foreign Direct Investment and Economy Diversification

Thanks to the positive global outlook, stabilising oil price, supporting policies and reforms, and restoration and reconstruction as conflict lessened the World Bank (2018b) is forecasting an economic rebound in the MENA region in 2019 with a positive outlook for 2020. Although the GCC is among the favourable beneficiaries from the oil price surge (World Bank, 2018b), the world bank worries that the situation could also be clouded by the geopolitical tension, people displacement and rising level of debt. The world bank in its 2018 report argues that the gap between MENA economies and fast-growing ones is the performance of the service sector. It inspires nations to encourage accelerated technological developments which offer new opportunities for promoting private-sector-led growth through intensification of high-tech jobs in the service sector as each job generated in the high-tech sector potentially produce 4.3 jobs across all occupations and income group (World Bank, 2018b). The government, in Oman, in its "vision 2040" is growing it strive to attract FDI and recently promulgated the law to be more favourable. The oil and gas sector have claimed a contribution to this strive, as stated by one of the participants:

"And then the innovation area, I want to touch upon. We have three hundred and four start-ups that we are incubating in various areas. So also, we have recently signed a Memorandum of Understanding with a company called phase ventures with three Omanis. Three young boys, one of which used to be in the company. So, they formed a company called phased ventures that is having an understanding with Spark labs and what they do is they look at innovators in the market who are primarily young Omani but also might be Americans, and they bring angel investors to make sure that they accelerate the innovation process. At the moment we are trialling; I think seven or eight innovations within the company and driving them fast not 6 to 7 months pilots. We are taking them for four weeks, and then we decide to bring them on board. C1M2

Scholars further assert that FDI can be catalysed to achieve more accelerated economic growth rates in emerging economies, but further states that FDI led growth has caused environmental degradation in most cases if proper alignment with all stakeholders is not reached (Naurala, 2012). Among the shortcomings associated with FDI is climate change, rising water and food insecurity, and the growing economic disparity (Chakraborty and Mukherjee, 2013). However, scholars present many benefits in emerging economies, attracting more FDI. Therefore, countries considering growth in FDI should further focus holistically by integrating Environmental, Social, and Governance (ESG) objectives at the early stage of negotiation of FDI through the employment of the principles of sustainable investment. Emerging economies need to leverage the economic growth storeys and start to make FDI work for SD.

Although Oman, like many countries in the MENA region, has progressed strategies to remodel their economies and take advantage of disruptive technology, more is needed to seize the opportunity and enhance a technology-based sustainable growth.
Staff exchange programs are seeing to be influential in knowledge transfer and advocacy for sustainability. The industry, in general, is very active in sharing some of its leading practices like HSSE and lean to the supply chain members and the government authority. The focal companies use the cross-posting and staff exchange programme also to lobby policy change. However, most of the exchange programme are from the national oil companies or their affiliated joint venture and mostly limited to government agencies and NGOs. C1 is among the highest companies supporting the scheme. C1M1 states:

"So, I have got 29 company secondees in the government units not to make policy but hopefully to steer and support policy. We are humble, but we try and help and address enablers, and that is what they are doing. Whether it is in job creation, whether it is in H.R. policymaking some financial enablers, it is also the government has established on TANFEED which is, essentially, it is an overarching body that's trying to put enablers in place in support of Oman vision 2040 and other aspects of sustainability."

Therefore, one of the principal roles of focal companies in a supply chain is knowledge transfer as a driver for sustainability performance. Lee et al. (2020) in their investigation of how different types of subsidiary roles influence dual knowledge flows among a focal subsidiary and the multinational enterprise's offices suggest that subsidiaries with a world mandate have a more influential positive impact on dual knowledge flows than subsidiaries with a functional contributor role. In contrast, they argue that subsidiaries with a local implementer role harm dual knowledge flow. The newly industrialised countries and emerging market like China and India have grown in both market size and technology levels based not only on learning by hiring from, or joint ventures with, foreign-invested companies (Kumaraswamy et al. 2012; Shi et al. 2014), but also making vast R&D investments in technologies (Choudhury and Khanna, 2014; Li and Xie, 2016) and burgeoning software power (Lama, Quadros and Schmitz, 2012). Hence, the MNCs headquarters in newly industrialised countries (NICs) can benefit from absorbing knowledge originating from their worldwide network of subsidiaries. This reversely transferred knowledge can be integrated with existing knowledge in the headquarters, which then retransfers integrated knowledge to the focal subsidiary where the basic knowledge originated. This is gradually becoming the typical pattern of dual knowledge flows in MNCs from emerging markets or NICs (Kang and Lee, 2017). Therefore, focal companies and MNCs could also facilitate that in their host countries for dual knowledge transfer. Supporting supply chain member in building R&D capacity geared towards sustainability could also support focal companies in addressing

technical solutions for better environmental management which the industry needs. The focal companies in Oman have experienced that through joint ventures with national oil companies, but evidence in dual knowledge transfer was limited although some might claim enhanced oil recovery is further established in MNCs subsidiaries in Oman.

FDI and joint ventures are also seen growing professionalism and the claim by participants that it makes an excellent contribution to growing the necessary skills in the industry and Oman; hence, sustainability. The oil and gas companies' part of their schemes of competency-based progression has contributed to enhancing professionalism in vast disciplines. C3M2 argued that staff professionalism contributed to the company bottom-line.

"...other bodies like Charted Institute of Management Accountants (CIMA) and Institute of Charted Accountants (ICA) are coming in now, and we are working jointly with them, so we are bringing in these professional bodies and more and more. The workforce also understands the criticality of being certified and the importance of things.".C3M2

The sector is also further seeking to attract FDI through joint ventures with international players. A joint venture agreement has been struck between Oman Oil Company, the government's investment unit in the oil and gas sector and energy-related projects, and Kuwait Petroleum International (KPI) to establish the Duqm Refinery and Petrochemical Industries Company (DRPIC) (OmanObserver, 2019a). According to the National Centre of Statistics and Information, foreign direct investment (FDI) in Oman at the end of 2017 surpassed USD 24 billion. Sector-wise, the oil and gas exploration attracted foreign investment of more than $12.5 billion, while financial intermediation secured FDI of $3.5 billion. The United Kingdom tops the list of investors in Oman, with a foreign direct investment of over $11 billion, followed by the UAE at $ 2.5 billion, and Kuwait at $ 1041.25 million in foreign investment. According to Business Live Middle East (2019), the interest in Oman by the end of 2018 surpassed its 2017 value by more than 14.9% in which the oil and gas took more than $15 billion in 2018, which reflects growth and trust in the sector.

However, SMEs dominate most business in developing economies. With a smaller size, a small span of operations and limited resources. It is further argued that these businesses tend to be advanced in their supply chain management (SCM) abilities as opposed to large organisations (Jayaram et al., 2014). Therefore, focal companies need to extend their support for such professionalism and leading practices towards their value chain.

The sustainable economy would warrant the promotion and the development of small and medium enterprises (SMEs), and nurturing innovation and human resource development as part of a broader strategy to remodel and transform the country from a hydrocarbon-based economy into a sustainable, knowledge-based one (Oxford Business Group, 2016). The success in the sector will enable other sectors to create economic integration and diversification in the country, with an emphasis in boosting in-country value through training and employment of a national workforce, establishing local industries, enabling SMEs to participate in offering different services, and qualifying some of them for specialized technical work. The Oil and Gas industry has been active in addressing sustainability goals as MOG confirmed in its March briefing 2019 that the sector had developed local capacities in exploration and production. It stated that in fact, local companies been awarded concession areas for oil and gas exploration. Some of these have become oil and gas production

companies; service companies were awarded business in different fields such as drilling, maintenance, engineering, construction; and others have been contracted for manufacturing equipment and devices locally (Oman Daily Observer, 2019).

Developing a new set of skills like professional welders is something the industry striving to achieve as part of social impact and diversity. The 6G welding success among young Oman youth in major projects costing billions is a moment of pride for the industry. C1M4 highlights this:

"So, to have something like Yabal-Khof been welded by locals is really something that is a source of pride for the company. Whom we trained to be 6 G welders to ensure that they are well certified, and they are able to execute on those projects safely. Moreover, that adds to the employment and capability building of Omanis locals. In the past, you would never think of welders being Omanis. Also, most of the workforce here did not understand what welders is. If you look at Europe, welders are one of the highest-paid individuals. So, it was a matter of really educating the local workforce regarding the hiba (gift) of that particular professional."C1M4

However, the majority of the leadership of focal companies also indicated a lack of skills and professionalism is a barrier for localisation. Participant C1M1 indicated

"Localisation is a source of big tension at the moment because if you look at the ministry Man-power they are grappling with a huge level of national unemployment that they have to deal with it. If you look at the oil and gas industry or for that matter other sectors, we need experience and expertise when it comes to running facilities, and you cannot just, you know, replace experience with a graduate that perhaps has great capacity and intentions but does not have the experience." C1M1

The global oil and gas industry association for environmental and social issues (IPIECA) support those skills are a prerequisite of the oil and gas industry strive to enhance local content in a host country. Its further states that this may be measured (by project, affiliate, and/or country aggregate) and undertaken through workforce development and employment of the local workforce (IPIECA, 2011). Developing local employment is good for the company and the industry, but the oil and gas price haunts the industry. C4M1 expresses this.

"So, one example that I can share with you is, in 2012, 13, 14, we were spending up to 80 million dollars a year to create employment, sustainable employment. Then the oil price collapsed in 2014. And we just could not carry on sustainably. So, what we did is we went out and any new contract that was negotiated from that day essentially in 2015 onwards introduced a one point two per cent training levy. Now, you might say well you are still paying for that. It is true. Some companies absorb some, and some people added to the bill, but it is equitably and transparently tender. So, in the end, it falls in the noise. However, that one point two per cent is then ring-fenced to training and development and job creation. So, we are able to sustain that program through mechanisms such as that." C1M1

There is no doubt FDI, Knowledge transfer and professionalism of the workforce in the industry is driving sustainability performance forward. This is even more critical in developing economies as lack of industrialisation created gap in skills, and new government strive to build industrial hubs have met with challenges in meeting skills and created a talent war. The oil and gas industry, with its deep pocket, can contribute to training people for new

skill sets, as indicated above. This is even more critical for the country to diversify away from hydrocarbon dependency.

5.2.1.12 Hidden Entrepreneurship

Scholars well acknowledge that the informal economy or some called it hidden enterprises is a global phenomenon and exists in both developed and developing economies but more prominence in developing countries (Meghir et al. 2015). The informality could be considered a barrier to sustainable development and especially the social and environmental aspect. Often firms working in the informal sector lack compliance to labour and environmental laws, including minimum wages laws and dismissal regulations and lack commitment to social security contributions (Webb et al. 2013). Informality also means that workers are denied many benefits, including unemployment compensation and health coverage (Chen, 2012). Interviewees in this study further stressed that informality is causing negative impact on the economy hence sustainability performance. For example, the profit generated from informal activities are often transferred abroad instead of being circulated within the local economy which defeats the objective of local content initiatives. This is supported by a study of Al-Hinai (2014) who claimed that almost 8 billion USD attributed to informality are transferred out of the Oman economy every year. This was clearly stated by many participants and could be summarised by a downstream manager:

"Informal enterprises are well founded in Oman and impacting the economic and social growth due to the major transfer of cash abroad, but more seriously depriving Omani from jobs and social security and unfair competition to SMEs operated by Omanis"C7M1

This outcome concurs with the finding of Almataani (2017) who finds that informal sector is not creating jobs for Omanis but perceived by participants escalating unemployment rate amongst Omanis. This might encounter of the claim of Webb et al. (2013) that the money generated in the informal economy are invested back in the formal economy. Webb et al. (2014) further see them as an engine of growth leading to effective labour market deregulation, reducing labour costs and increasing flexibility.

Informality is often sought prevalence in smaller firms as they easily can evade regulation. In this study, informality was mentioned often mostly downstream as a barrier for sustainability. Participants argued that community pressure them to accommodate more local purchasing from local contractors, but they fail to qualify the check and balance focal firms put in place for good governance or health and safety. This is highlighted by C6M3 when stated:

"Community pressure us to accommodate local but also informal contractors who share no desire to put good governance or comply with the business code of conduct or HSSE policies. This often results in local community resentment and spread of negativity among neighbouring communities which often result in bad naming for the company"C6M3

Other participants stated that most of the time informal business hide behind a local sponsor hence difficult to identify so they settle for enforcing compliance process rather validating ownership to avoid negative campaigns.

Al-Mataani (2017) associated the emergence of informality in the entrepreneurial context of Oman to the weakness in the institutional environment. He highlighted that the regulatory weakness, the inadequate entrepreneurial mind set, the normative significance of favourism

(locally known Wasta) and the disproportionate influence of the family in shaping individual endeavour are all contributing factors influencing informality in the ecosystem. Therefore, focal firms can contribute to enhancing the institutions and the legality and the capacity of the informal market to provide a better platform for the labourer to shift to higher productivity. Through focal firms CSR programmes companies can enhance awareness and develop better entrepreneurial skills to overcome the highlighted barriers above. Also increasing the costs of informality enhances the allocation of workers to more reputable firms, progress wages, and improves overall welfare. A focal firm can observe very high rents, and the rising cost of regulation will reduce informality but will not increase unemployment.

5.2.2. Internal Drivers for SSCM

5.2.2.1 Leadership Commitment

Top management commitment is considered by the participants in this study as crucial for leading the sustainability performance. This also confirms with previous study on green purchasing and green suppliers development (Blome, Hollos and Paulraj, 2014).

Companies are also experiencing internal pressure from management and staff to be more sustainability conscious. This was expressed in one the HSSE contractor's meeting I observed during a site visit. The chairman of the meeting stated:

"The company management is a significant driver for the company vision towards sustainability, and we expect our contractors to embrace that and conduct their business accordingly" C3M3

The diversity of operators in the O&G in the upstream sector is also offering different internal approaches and focuses. The C4M4 of a multinational-local joint venture argued:

"The leadership commitment to HSE is strong and part of our duty of care. At (company name) we focus on leading indicators and proactive initiatives. Actions have been implemented in areas such as HSE culture, contractors' safety, road safety, occupational health, and risk management. HSE culture workshops for (Company name) and contractors, safety clubs' meetings, and leadership programmes have contributed to HSE performance improvements."C4M4

It reflects that management leadership and commitment supported by a sound performance system are a prerequisite in driving sustainability agenda among company staff and contractors. Although, the performance measurement was almost highlighted by all participants as one driver to sustainability strategies and practices but was mostly limited to bow ties and safety indicators like employees and contractors recordable lost-time injuries (LTI), injury and illnesses rate (IIR) (Li et al. 2016).

However, 35% of interviewees highlighted also proactive indicators as drivers to prevent environmental incidents and related them to process safety leading indicators. C5M4 stated:

"*(company name) is using leading indicators such as the overlap of preventive maintenance and false alarm incidents to judge the effectiveness of our staff and our contractors in preventing incidents taking place. Root cause analysis of previous industrial incidents like*

the Texas refinery and the Deep Horizon in the Gulf of Mexico fare linked to human error and overlap of critical equipment maintenance." C5M4

The literature of SSCM suggests that managerial behaviours and decisions need to be focused on the realisation of economic prosperity without causing harm to the environment or causing social injustice through systemic integration of key business processes and cooperation among supply chain members. The participants' highlight drivers related to the organisation are committed to sustainability by top management leadership. Bauer et al., (2009), for example, find that firms that manage stronger employee relations encounter less firm-specific risk and a cheaper cost of debt, which offer undoubtedly enhance financial performance. Others, scholars also confirm that organisations are adopting internal leadership drive socio-economic performance (Zhu et al. 2008a; Faisal 2010; Hussain 2011; Wittstruck and Teuteberg, 2012; Walker and Jones 2012). A conducive organisational culture is imperative in driving sustainability (Carter and Rogers 2008; Pagell and Wu 2009; Cuthbertson and Piotrowicz 2011) through enhanced transparency (Carter and Rogers 2008); Pagell and Wu 2009; Wolf 2011).

Also, management preparedness to accommodate and mitigate risk is necessary for sustainability (Seuring and Müller 2008b; Carter and Rogers 2008; Hussain 2011; Wolf 2011; Walker and Jones 2012). The management role in driving sustainability is necessary for cross-functional integration and enforcing performance management. This is in line with the work of Carter and Rogers, 2008; Faisal, 2010; Hussain, 2011; Walker and Jones, 2012). Various contribution of the participants has shown some element although, in variation to company size and leadership style and context-related because they can explain the organisational environment in which SSCM strategy and decisions are made in a company. Pagell and Wu, (2009), Walker and Jones (2012), Zhu et al. (2008a) and Wolf (2011) all highlighted the role of internal integration in driving and achieving sustainability.

5.2.2.2 Organisational Culture

Jones and Wicks (1999) claim that companies that practice care of key stakeholders' concerns and function morally typically experience higher success in the economy as opposed to other firms that do not and this is also well stated among the interviewed managers. The duty of care for contractors and the management drive was further expressed by another participant, the C1M3 stated:

"The company cares for the contractors' community. We completed a project called "Prism", an industry-first three years initiative to improve contractor welfare standards for those working in the interior by embedding a duty of care mindset across the broader (company name) contractor community. The project is in full swing, and so far, a total of 90,000 interviewees involving personnel from 20 interior-based contractors and subcontractors were conducted, with more than 600 coaching sessions delivered to drive worker-welfare improvements."C1M3

The C3M4, working for a multinational company, stated that

" At (the company name), we aim to foster a genuine culture of care for our workforce in Oman. Whether it is our employees or those indirectly working for us through contractors, this is something that demands constant attention. To that end, our commitment to safety

follows a rigorous strategy; one that adheres to not only internationally recognised industry standards but also one that tested, refined and proven over many decades of (company name) Middle Eastern and wider global operations.". C3M4

The participants in this study constantly emphasised that their firms now days are focused heavily on creating a culture conducive to socially responsive decision making. A strong culture of social concern and observance pervaded and went well beyond what might be expected in more 'conventional' organisations. This finding is in concurrence with Norris and O'Dwyer, (2004).

*"We share resources with the community, and our staff are well integrated into the community. We show empathy and understand the community concerns and challenges; hence, during 2011 Arab uprising, we were first to contribute to recruiting more than what we need. We need to support the society social challenges. Our contracting strategy give advantages to local contractors and mandates our major contractors to source locally as much as practically possible." (*C5M2)
Another member of the participants highlighted the similar sentiment and the role of the industry in wealth creation for local economies.

Other company leadership sees sustainability beyond profit, as stated by C3M1:

"*Profit is not the sole motive, for us, so we have, for example, one project that we have started at the moment and the probability of it coming out as being profitable is not high. But from the needs of the country from the needs of a particular region we are engaging in that project on its own and we do so very consciously, and as a government company it reflects our need also to give back as well as to take as a company, and I think too many companies if they look at each project in a little box unless it makes money, does it not make money. So, we try to take a more holistic view of the needs of the company to create wealth at the same time needs to respect the society in which we live.C3M1*

However, this was mostly within government or mostly public-owned focal companies as stayed by C9M2:

"If *a company where there is 100 per cent publicly owned company like ours, the government-owned company, whether it is a private company, it has this kind of reason d'être is to deliver wealth. To provide something that society needs too. So, of course, we engage in predominantly profitable projects. However, at the same time, it is not primarily for a government company. Let me give you an example; we reclaimed land from the sea rather than displacing villages from their native habitat. Moreover, because of our operations, many of these situations where villages can be displaced, but that was not the case with us, but at the same time, we had to flatten the growth we had to accommodate this" C9M2*

Another public company (government/ international joint venture) sees doing sustainable business is a more long-term objective. This was stated by C1M1:

".....But, to me the really successful businesses and those have engaged in your business that not only did make money today. Well, today, you also create wealth for society tomorrow as well. And it is companies who think like that are not trying to optimise their early returns. They are trying to behave in a manner to let us treat people the way we would like to be

treated in that situation. People may have far higher expectations and what we can meet, but that will always happen, and we have to engage with them." C1M1

Through the analysis of participants statements, a pattern emerges in which the internal factors that could facilitate or hinder the implementation of SSCM strategy could be assorted into two categories: (1) organisation-related factors, and (2) supply chain function-related factors. Internal drivers of SSCM include organisational-related (Alzawawi, 2014) factors that are supported by efficiency objectives (Carter and Dresner 2011) and corporate values, as well as by corporate responsibility objectives.

Performance measurement/(and) reward system linked to sustainability are highlighted factors that can impact the adoption of sustainability (Pagell and Wu 2009; Wolf 2011; Walker and Jones 2012). A study by Almarhoobi and Atan (2018) investigating the impact of human resources management (HRM) practices on a government institution in Oman, mostly addressing HRM variables that impact organisational performance, concluded that employee incentives, employee training, and job security are positively associated with organisational performance in Oman.
Another study by Moideenkutty, Al-Lamki and Murthy, (2011) among 87 companies listed in the Muscat Securities Market (Oman) using financial performance measures controlled for size and type of firms (publicly traded or closely held) indicated highly involved human resource was positively related to organisational performance and market value. Mamman and Al Kulaiby, (2014) in them strive to explore whether Ulrich's HRM model is useful in understanding HR roles in non-western developing countries such as Oman surveyed a random sample of 780 HR practitioners, line managers and employees from public and private sector organisations in Oman and reasoned that HR practitioners in Oman perform all the roles. However, 'strategic partner' which critical towards performance is the least performed role, but HR practitioners in the private sector are more likely to perform all the five roles to a greater extent than their counterparts in the public sector. The study also, Ulrich's model is robust enough to support in the understanding of HR roles in a non-western, developing country context. Besides, the roles performed by the HR practitioner can be affected by the sector they work in and the sociocultural context. This could be because HR professionals in the private sector are more western university-educated as it was argued by Al-Ismaily and Kurian, (2007) and the private sector is more performance-oriented. Therefore, the staff of the oil and gas sector if well incentivised and well trained towards sustainability practices they will contribute to sustainability organisational performance.

In another empirical study of 712 employees working in six large Omani organisations, Aycan *et al.*, (2007) find that people in those studied organisations tend to show a strong orientation towards mastery, harmony, thinking and doing, and a weak orientation towards hierarchy, collectivism, subjugation and human nature-as-evil. Therefore, it would be more advisable for leadership in organisations O&G sector in Oman to capitalise on these traits towards better sustainability performance. It is in line with a study of Fellows and Liu, (2013) who argued understanding culture, as an operative construct in the project value system, enables the concepts and practices relating to the sustainability performance. It is Agenda 21, which created a comprehensive and all-encompassing concept of sustainability that creates the basis of value conflicts. Chapter seven of the UN agenda 21 specifies the overall objectives of human settlement to be "to improve the social, economic and environmental quality of human settlements." (UN.org) and the O&G sector with its purchasing power in a position to contribute to that and offset its adverse impact on ecological and social matters.

5.3 CORPORATE STRATEGY AND SUSTAINABLE PERFORMANCE

The discussion above highlights that the stakeholders of the oil and gas industry have experienced many factors driving for better sustainability performance. Leaders have been encouraged to embrace sustainability and to adjust their business culture towards more sustainable growth. Focal companies operating in the oil and gas no doubt will shift more towards sustainability in managing their supply chains as environmental and social issues become increasingly prominent and have bestowed a positive influence and impact on firm performance (Golicic and Smith, 2013), such strategies will arise almost automatically (Mintzberg, 1978).

Scholars over the years have debated the need of strategic orientation towards economic, social and ecological performance. Previous studies further highlighted a growth of awareness toward social issues and environmental management exists in largest companies today, but mostly in a form that may be called a reactive strategic approach (Srivastava, 2007). Only companies with sustainability as a core value seem to exert the extra effort of transforming their supply chain, or at least parts of it, into a sustainable supply chain and use such an "opportunity oriented" strategy (Harms et al., 2013:214) for achieving a competitive advantage.

Considering the growing pressure from all stakeholders nonetheless, the companies in Oil and gas industry will have to perform more significant efforts to attain true sustainability throughout the whole supply chain if they aspire to attain high sustainability performance and sustain their respective competitive advantage beyond today. In contrast to companies with conventional SCM, it was noticed a higher sustainability practices proliferation could be used to reach a stronger sustainability performance. Such practices also provide for more extensive sustainability performance measurement systems and therefore a more effective and more convincing positioning approaching the stakeholders (Schaltegger and Burritt, 2010).

Therefore, the three proceeding sections will elaborate on the strategies adopted by focal companies in managing the pressure exerted by different stakeholders in Oman's O&G sector. Participant's perception complimented corporates documents form the biases of the interpretation of adopted strategies

5.3.1 Reactive and Compliance Strategy

It seems from the participants discussion and the corporate documents and publications reviewed for this study, that the industry is adopting many approaches of reactive and compliance strategies making HSSE a key focus area. It seems the concept of sustainability was encompassed and installed in the industry's operational frameworks, and part and parcel of an HSSE framework. Sustainability was further embraced to mitigate the increasing pressure from primary stakeholders. This is in concurrence to what scholars in the literature states that an industry adopting such compliance strategy typically focuses more on tightening the procedures and processes to minimise risk to their employees, contractors and the community and the environment. Scholars know it as a reactive strategic approach (Srivastava, 2007; Muller and Seuring, 2008).

Participants make several references to recent times industrial disasters around the globe including Texas's Refinery in the USA, Piper Alfa platform fire in the North Sea and the

Deep Horizon in the Gulf of Mexico. Also, the industry experience pressure from standards organisations and media, which resulted in more technical and cognitive solution implemented to create better exposure to sustainability issues. The industry recognised a burgeoning need to address sustainability to keep up with other industries and companies and industry-leading practices. This was very much clear among the participant's views of their reactive approach towards maintaining their firms' reputation. This could be summarised in a statement made by a participant from the downstream industry:

"We are a relatively young company to Oman and smaller in size proportionately if we consider the upstream ones. Our strategy to retain our licence to operate and cause no harm to the people or the planet" C6M3

However, this reactive approach might be challenged and more so in the recent climate change rebellion all over the world. Porter and Van der Linde (1995), Shrivastava, (1995), Peloza (2009) and Peloza and Shang (2011) and others have challenged the notion that embracing sustainable social and environmental policies is competitively disadvantageous to corporation's sustainable performance. It is even argued that corporations place advantages over their rivals by adopting ecological strategies more competitively to guide entries into new markets (Shrivastava 1995).

Adams et al. (2015) further states that organisations striving to position themselves strategically should focus mostly on innovation activity and operational optimisation within the firm's internal boundaries first. It is the pursuance of efficiency gains through new practice adoption and compliance, reacting to local and international regulatory requirements, usually the principal drivers (Adams et al., 2015). Therefore sustainability-oriented innovation matures to become more proactive if reactive innovation matures to be uneconomic, for example, when add-on solutions incur a higher cost than the cost of process redesign (Al-Ston and Roberts 1999). Therefore, the sustainability outcome from such a strategy is a decrease in harm per unit of production by only using current innovation processes and without compromise to the current enduring business models. It seems focal firms in the oil and gas adopt primarily cost, and efficiency-oriented measures intended for low-hanging fruits and thus only demand moderate (if any) business model changes. This is prevalent in many participant's statements, for example C4M3 states:

"Our operational excellence focusses currently to minimise the adversity of methane emission. It is our belief of causing no harm"

Accordingly, firms see sustainability issues as risks heading to protective behaviour, while reputational business elements are rather cosmetic (George et al. 2016). Focal companies operating in developing economies normally act to address such environment which shape their strategy to react to internal or external drivers. This approach of risk mitigation might be useful in addressing some concerns of sustainability performance, such as health and safety and may meet some regulatory requirements. However, it is more of a reactive approach and might not be adequate to sustain operational excellence or maintain a licence to operate as the external and internal pressures are intensifying for more proactive engagement with all stakeholders.

Frynas (2009) highlights that evidence in the oil and gas industry suggests for example, that corporate social responsibility (CSR) has the most significant potential for addressing environmental challenges through a steady improvement of corporate reporting and the

development of new environmentally friendly technologies. He relates those environmental improvements to the specific expertise in technical and managerial skills that companies in the industry possess. Hence companies' environmental initiatives appear to lead to win-win outcomes as the environmental impact of companies are reduced; therefore, focal firms benefit from equipment and innovation and lower operating costs.

Reviewing company websites and corporate documents also indicate that companies most priorities are following national laws and regulations. It says in one website of a focal company:

"For (the company), sustainability means providing essential energy and economic growth for a growing population, while respecting people, their safety and the environment."

This is further supported by another member of the industry in stating that:

" The foundation of the company approach to sustainability is based on having standards, process and tools in place to manage operation safety through incidents prevention and minimising adverse environmental and social impacts across our projects and facilities" (C7M1)

Furthermore, most of the downstream focal companies, especially in the oil and gas retail business, which is in a very competitive market and often manage business environment uncertainty. In this study, it seems companies have adopted a reactive approach in line with Talluri et al. (2013) explanation of the effectiveness of the risk mitigation strategies which are conditional on the internal and external environment, which is solidly grounded in the contingency theory. Therefore, the contingency theory has enormous potential to explain the strategic behaviour of the firm towards buyer-supplier risk, and Mishra et al. (2016) suggest that the strategies of Bode et al. (2011) buffering and bridging are most suitable while coping with business environmental uncertainty.

The participants further discussed exposure to more normative institutional pressures through their staff participation in local and global conferences. Also, some companies both in upstream and downstream have a filiation with multinational companies and were subjected to follow code of practices like the HSSE-SP framework by overseas shareholders. Consequently, top leadership and senior management backing were actively solicited to assure that the integration of sustainability in the organisation was effective (Colwell and Joshi, 2013).

Although the industry is showing more accommodation to sustainability through a more reactive approach, it is still experiencing some structural barriers such as lack of organisational structure for sustainability-related initiatives. Sustainability, mostly social, was confined to external affairs or corporate affairs department in companies' headquarters and HSE related activities to plant operation functions. This often resulted in lack of cascaded of sustainability value to every unit and every employee in the company. Therefore, there was a deficit of social inclusion, as well as insufficient sustainability socialisation processes among company staff. It would have been more beneficial for companies to hire employees with sustainability values, and further socialisation processes could help to instil environmental as well as socially responsible decision-making in the focal firms to manage various social groups (or stakeholders) for more excellent social responsiveness (Norris and O'Dwyer, 2004).

However, there is a growth in further integrating more functions through new initiatives like local content and in-country value. The changing in structures facilitated organisational advancement in sustainability to emerge separately from the primary plant performance management system to the inclusion of social and environmental performance systems. Participants further highlighted lack of integrated structure resulted in companies adopting more charitable role. This was clearly indicated in a participant's statement of limited role in driving sustainability mostly through charitable funding to mitigate risk. This is indicated by the company corporate affairs manager:

"...the (company) role in society is sponsoring many charitable events, environmental events, educational events, tourism events and other events" C8M3

A similar statement by another participant highlighted the limited role of the company takes:

"Throughout the company history, we have worked in a sustainable manner that respects the natural environment. We also work closely with the authorities to guarantee that our corporate activities do not harm cause harm to the environment" C8M1

Therefore, even CSR activities have more limited potential and not designed for addressing difficulties associated with the governance and community development. It could be argued that it is more dependent on the context the firm finds itself operating in and it strive to mitigate operational risk (Bode et al. 2011). In the case of Oman, emerging country, and the clear absence of strong sustainability regulatory drive, it is not surprising that some companies chose a more reactive approach to address minimum compliance. The strategies and approaches mentioned above might address firms risks from business continuity but not necessarily sustainability (Schaltegger et al., 2012). Therefore, it is in the companies benefits to developing better community relations and improved governance to maintain fewer operational losses as a result of improved corporate reputations, less corruption in the society and community dissatisfaction. Therefore, the next section will be more tuned to examine a further accommodating and proactive approach the industry incline to adopt.

5.3.2 Collaborative and Proactive Strategy

The collaborative, proactive and accommodating strategy configuration describes a situation where focal companies have parallel systems for sustainability performance, those systems reflect the company strive to adjust and accommodate the dynamic of the industry and the pressure exerted by stakeholders. The industry realised obtaining legitimacy was especially essential to sustain its license to operate as many reputational issues hit the industry and disasters not nationally but globally emerged to question the credibility of the industry. Also, issues like global warming started to emerge as a concern to institutional investors and legislators.

As discussed in chapter two and three, the companies in Oman faced with an allegation of corruption and senior members of board and leadership were locked up for fraudulence behaviour. To improve corporate governance, most companies reshaped its board members content and revised and enforced further their cod of conducts. Further initiatives like lean, ICV and more collaborative CSR were introduced. The companies further addressed process safety and incorporated more social performance in their corporate offering. Most companies implemented more proactive and balanced approaches and measures such as balanced

scorecards. Therefore, more integration across companies started to take place, and staff were more engaged in CSR. Staff annual survey started incorporating elements of measurement on staff awareness and satisfaction of corporate social performance. It was clearly stated by many participants and summarised by C2M4:

"*The company has evolved since 2011 and the experience of Arab spring. We realised our licence to operate is at risk unless we incorporate a more inclusive approach to sustainability."*

The participants further highlighted that the integration of sustainability in an accommodative and proactive way required further restructuring and the establishment of sustainability departments and local content functions. This is in line with Ackerman (1975) and Ackerman and Bauer (1976) suggestion of three stages of corporate social responsiveness. Focal firms in this study formulated the social policies and encompassed widespread organisational learning through established organisational structures to plan and manage social issues. It further created information systems to monitor social performance within the company and across the industry value chain. It was transparent post Arab spring most focal companies started to the institutionalisation of commitment to meeting social demands and response models to social demands mature to a permanent feature of firms.

Reviewing organisational charts of many organisations in the oil and gas sector in Oman, it seems there are more alignments between technical and corporates functions and sustainability is well positioned on the management agenda more frequently. Scorecards, especially on ICV initiatives, is well monitored by leadership and joint committee at the ministry of oil and gas. The HSSE management system became strategic pillars and was strengthened by the adoption of HSSE-SP framework to establish an all-encompassing HSE culture company-wide. Cramer (2002), noted for a corporate sustainability strategy to achieve its objective and succeed, requires a well-balanced and multidimensional performance management and measurement system.

Sustainability performance measurement strategies and the empowerment of employees are essential aspects of any integration and the mobilisation of sustainability. Currently, companies installed staff based and corporate based measurement system to embed sustainability but mostly related to HSSE for company-wide and socially oriented one for external affairs functions. Companies adopt reactive as well as proactive indicators in tracking staff commitment towards sustainability, such as safety walk and leak preventive, respectively. Also, corporate affair functions are responsible for creating and maintaining stakeholders' engagement plans designed to proactive track the frequency of corporate engagement leadership takes. C6M3 summarised the importance of the measurement system:

"Sustainability and HSE are tracked by the board, the CEO and reported in our monthly management report. It is part of the company corporate scorecard and commitment of causing no harm to people, assets and environment."

Participants have acknowledged that various initiatives to improve the cognitive integration of sustainability in the corporate performance system have been driven by the continuous coercive, normative and mimetic institutional pressures. The board of directors were very instrumental in guiding companies, especially upstream ones. Furthermore, most people interviewed for this study recognised the disastrous effects of environmental and social issues on company operations if not managed effectively. However, further discussion with the

participant the severity of impacts differed according to position within the organisation. For example, technical and operations managers focused mostly on plant-related consequences like process safety, Finance on financial consequences and corporate and external affairs mostly on matters of the community. This obstacle to an inclusive and integrated approach was prevalence in organisations with the multilocation operation.

Furthermore, there were incidents participants indicated a lack of appreciation of other parties' role hence silo prevails. Corporate and external affairs managers often highlighted those technical functions underrate community issues and vice-versa. However, focal firms are well engaged and proactively involved with society through many CSR and ICV initiatives which include contractors HSSE gathering, government official's engagement sessions. This was captured by the external affair manager of a downstream company:

"Community engagement is critical, and we do it out of care and respect. Our CSR is designed to care for the local community, our neighbours, and Oman. There is no corner in the country where our CSR has not reached. we even care for the future generation, and we have a special kitty for that" C6M3

Another upstream corporate affair manager stated:

"We have many forums, we call them Majlis, where we engage at company level or community. We also have a very diverse agenda from ICV, energy management, collaborative social responsibility to green economy and energy efficiency. These are thoughts leadership events to discuss prevailing issues in Oman and to propose sustainable solutions." C1M3

Although the relationship of focal companies towards their stakeholders and sustainability to daily operations was addressed to a certain degree but lacked that integrated approach hence a further need to address a more integrative approach to the relationship between stakeholders' pressure and sustainability strategies, the following section will address that.

5.3.1 Towards a Shared Value Strategy

"Oman Vision 2040", showcasing the Sultanate's recent accomplishments and the outlines of the main directions of the Vision 2040 was a major milestone in the transformation journey of Oman's economy. The role of the private sector in driving the next phase of transformation is well presented in this collaborative platform and even had a theme called "The Private Sector's Role in Realising the Vision." According to the Oman observer dated 03/02/2019, the 2040 vision aligns well with this global migration towards diversified and cleaner sources of energy (Oman Observer, 03/02/2019). All leading companies in the oil and gas sector in Oman participated in this engagement process to establish an integrated approach and partner with the Government of Oman in achieving a vision of a more diversified economy, environmentally sustainable and less reliant on fossil fuels to encourage sound development well into the future (Oman Observer, 03/02/2019).

The government drive is transcended to the oil and gas industry in Oman continues to press the agenda forward in a more collaborative and transformative way. The undertaking of the issue of global energy transformations to renewable energy is the subject of the annual Oman Energy Forum in its 7th edition (Oman observer, 2019). The forum theme in 2019 was "Turning Climate Change Challenges into Opportunities" presented an acknowledgement

from Dr Al Rumhy, the minister of oil and gas and chairman of many upstream and downstream oil and gas companies, to the complicated nature of the prevailing international debate on climate change at a time when vast swathes of the global population are disturbed with equally weighty difficulties. Mr Al-Rumhi elaborates further on the challenges by stating:

"...It's a very complicated discussion; for example, there was an agreement a few years ago to eradicate poverty worldwide. Yet, with discussions surrounding the Paris Agreement, there was no talk on poverty. If you go to certain parts of the world today talking about carbon, capture and storage (CCS) in support of the Paris Agreement, they will think you are totally mad. For them, the priority is eradicating poverty and improving food supplies. And therein lies the complication." (Omanobserver, 18/01/2020).

Therefore, it is clear from the highest authority in Oman's oil and gas industry that climate change could not be approached in isolation from other urgent global challenges, such as energy insecurity, food shortage and hunger, youth unemployment, and so on. The commitment of the leadership of the industry is well presented in the recent roundtable discussion, attended by top-tier executives of Oman's energy industry, centred on the theme, "Tackling Carbon Emissions in Oman: Building a Roadmap for Oman to meet its Paris Agreement?". As discussed earlier in chapter two, Oman is amongst almost 200 countries that have signed up to the Paris Accord that obliges signatories to a set of guidelines on how they will accomplish climate change targets sanctified in the Paris landmark agreement.

The Oman commitment of achieving a comprehensive renewable energy programme by 2030 that will see at least 30 per cent of power generation originating from sustainable sources is plausible. Also moving ahead with strategies in support of energy efficiency, energy conservation, energy storage and green hydrogen production, among other low-carbon fuels is positive in achieving more green sustainability but the inclusiveness of people is further needing focus and more systematic coordination among all stakeholders. Further integration of the supply chain members, including a more leading role of the focal companies in driving sustainability performance in a proactive and shared value strategic way will go well and in line with Carter and Rogers (2008) emphasis on the need for the systematic coordination of the three elements of sustainability. Therefore, especially for MNCs operating in emerging economies, like Oman, a sustainable development strategy, which recognises all aspects including economic, environmental and social sustainability in highly sought, concentrates on sustaining environmentally friendly production processes for an unlimited future will be a falling short from integrating people (Hart, 1995; Hart and Dowell, 2011; Torugsa et al. 2013; Wijethilake, 2017).

Focal companies operating globally or through joint ventures need to consider more long-term perspective for better sustainability performance. This is in line with Hart (1995) claims "firms (either multinational or local) that are focused on generating short-term profits at the expense of the environment are therefore unlikely to establish long-term positions in the developing world" (Hart,1995: 997). The developing economies, according to Bansal (2005), needs a sustainable economic strategy that involves the "creation and distribution of goods and services … to raise the standard of living around the world" (Bansal, 2005:198). Torugsa et al. (2013), and Wijethilake (2017) in their strive to develop a comprehensive sustainable model also advocate for the incorporation of all three strategies considered in the NRBV of the firm and advise a good adoption of a proactive and inclusive sustainability strategy will enhance corporate sustainability performance.

Therefore, firms striving to reduce their ecological impact employ environmental management strategy to decrease the size of their environmental footprint by blending environmental attentiveness into daily operations (Steurer et al., 2005; Torugsa et al., 2013; Wijethilake, 2017; Wijethilake et al., 2018). Furthermore, adopting a social strategy ensures the similar rights of members of society and supply chain partners to access resources and opportunities (Bansal, 2005; Torugsa et al., 2013). In line with Steurer et al., (2005) finding the leadership of oil and gas industry in Oman have demonstrated a perspective of social sustainability strategy which include equality inside the focal firm, internal social improvements, local and international equity among suppliers and external social improvements for society at large.

The industry commitment to transformation and contribution to a more diversified economy with a more environmental and social focus was highly sought and elaborated by participants in this study. C3M1 stated:
"The (company) is committed to the development and training of future Omani leaders in a more diversified energy sector and environmentally sustainable and less reliant on fossil fuels."

The industry is similarly committed to driving initiatives which might expedite such transition. This was clearly presented by all participants and highlighted by C4M2:

*".... furthermore, our In-Country Value strategy, which holds our commitment to continues to target the improvement of Omani businesses and partnerships, advancing our social responsibility initiatives, and investing in businesses that drive value innovation and more sustainable development in our supply chain and local communities." (*C4M2).

Another participant highlighted the amount of investment allocated by the company towards sustainability since the company inception in the year 2000. C6M1 stated.

"We are committed to sustainable development and the people of Oman. We have cultivated a local talent pool for Oman, and we have developed people; some stay with us and other moves to other industries in Oman, armed with excellent training and tremendous work experience. On the CSR front, we have provided large amounts of money to the local communities, to grow industries and generate jobs, directly within our premises and contractors or indirectly fuelling the talent pipeline for the nation."

It is clear from this study; leadership in Oman oil and gas sector are growing a better understanding of the need to amalgamates all aspects of sustainability strategies to enhance a proactive strategy adoption. This is also in line with Rome (1992) claim that the requirements for sustainability could not be reached solely by compliance without the leadership-oriented action. This result further highlights the commitment of the sector leadership and tally with the growing presence of corporates representation throughout three Earth Summits on sustainability and climate change (Adams et al. 2015). This result indicates further that the oil and gas sector have a keen interest in developing a more integrated approach with a shared value element to offset the rise of critics and tally further with the finding of Wan Ahmed et al. (2016). However, this is heavily prevalence in the quasi-government focal companies and might be argued it is a state supported as most of the spending comes from government share of operation budget in the upstream and profit in downstream.

Therefore, the room for improvement is there hence the industry must cultivate an organisational culture that supports sustainability performance through proactive behaviour and team more collaboration with other institutions in discovering innovative sustainability answers in order to translate a dedication to sustainable practices into activities that can produce an actual distinction to their SSCM practices.

The industry highlights the commitment and accommodation of the dynamic shift in society and the market. They further demonstrated a shift in focus towards people through a better and more engaged strategy based on shared value with its stakeholders. The minister of oil and gas, highlighting the complexity and the challenge to shift focus to a more inclusive approach centred around people and the planet is also supported by the industry leaders. Oman population is young and globally centric, and soon concerns from climate change and the rise of earth temperature will be driving many, especially the young generation, to repel the statuesque (Sengupta, 2019).

The literature review indicated further that there are new terms start to exhibit a global shift and use concepts like prime movers (Jacobsson and Johnson, 2000), system builders (Hughes, 1987) or change agents (Rogers, 2003) to name few transformative performances of leading single actors, (organisations and individuals) in driving sustainability performance through strategic orientation. Therefore, the corporate world, especially in the oil and gas industry, needs to create a shift towards more shared value.

The developing world is already taking a transformative measure to accommodate the shift toward a more inclusive approach. The European Commission amendment of the definition and strategy for corporate social responsibility (CSR) in 2011 and the publications of Porter and Kramer in the same year in the Harvard Business Review to include shared value as a central element of the new concept and business model is a shift soon will be globalised. The overall aim and intention of the EU and Porter and Kramer in driving shared value is to enhance enterprise legitimacy and demands a broader focus and much higher requirements for enterprises (Moczadlo, 2015).

The shift towards people focusses through CSR, ICV and sustainability activities is an indicative drive for the corporate world to contribute to more inclusive growth which results in more employment and the societal wellbeing. Porter and Kramer shared value creation also go beyond the classic business case of CSR which was discussed already because shared value extends the definition to include a long-term measure which must be blended systematically into the strategic core business of firms.

Currently, the participants indicated a willingness to embrace sustainability but still lacked to demonstrate how. The borrowing of the term marinating the licence to operate from other extractive industries is commanded but lacked integration across the intra-functional of organisation and prevalence among the value chain. Therefore, the simultaneous creation of profit and societal value as highlighted Porter and Kramer are decisive; hence shared value is an essential element in the business strategy and the responsiveness of business for societal needs.

The discussion for shared value in Oman is in its infancy stage and might vary across organisations and requires further understanding from the Oil and gas industry to address its complexity. The shift needed toward a business model for sustainability (BMfS) will allow focal firms to venture corporate sustainability and shared value by the intentional creation of

business cases for sustainability. The current strategies of reactive and accommodating, proactive or collaboration are necessary, but a BMfS adoption will help focal firms to enhance the efficiency and effectiveness of its business activities and actions in the fields of the economy, natural environment, society, and to generate profit from these activities (Schaltegger et al., 2012; Schaltegger et al., 2016).

A focal company striving to shift towards a business model for sustainability will need to generate an increased positive effect for the people and environment and significantly reduced adverse effects for the society and natural environment through shifts in the way the focal firm and its network create, deliver, and capture value (Lüdeke-Freund, 2009, 2013; Wells, 2013; Bocken and Short, 2016). Therefore, the adoption of a shared value strategy is embracing a more comprehensive sustainable performance by focal firms and their network through addressing the ecological challenge and urgent societal need and will further develop a new sociotechnical approach toward maintaining the social licence to operate and sustainability.

5.4 SUSTAINABILITY INITIATIVES FOR SSCM

The industry in them strive to address the growing needs of more socially inclusive and environmentally protective adopted strategies to suit prevailing circumstances. Those strategies were practised individually or collectively to sustain operational excellence and cause no harm to people, assets and the environment. However, those practices and activities needed to be bundled to create a better focus in addressing the growing concerns of all stakeholders. There were initiatives internally focused on addressing operational excellence like lean manufacturing, just in time, quality improvement schemes and ERP. There are others who introduced by the host counties to maximise value to the society and retain capital mostly target MNCs operating in oil-rich countries. Local content or locally known In-Country Value and Corporate Social responsibility are among few. This study focused on leading initiatives which formulate a predominance and means to test the adopted strategies discussed previously. These are not comprehensive but illustrative of the industry way of adjusting to the pressure exerted on them by internal and external stakeholders of the industry. The next sections will elaborate on those initiatives and cross-reference some of them with participants views.

5.4.1 Lean Manufacturing

As discussed in the literature review with a growing social interest in environmental sustainability, focal firms are striving to encompass the strategic significance of sustainability and mostly environmental management practices in creating a more competitive advantage (Porter and van der Linde, 1995; Sroufe, 2003; Kleindorfer et al., 2005; Pagell and Gobeli, 2009; Yang et al., 2010; Yang et al., 2011). A lean strategy is quickly growing the dominant paradigm in manufacturing product and process waste management (Fullerton et al., 2013). A lean manufacturing strategy considers value from the customer's prospect and then redesigns the production processes to improve that value (Womack and Jones, 2003). The oil and gas industry in their strive to be more competitive adopted many process initiatives designed to minimise process waste mostly administrative amandine activities. This was summarised by a participant stating:

"Over the years, our policies and procedures have grown to a degree of being a barrier to efficacy and effectiveness. Our staff were frustrated for our inability to serve them in a

sustainable manner. We kicked a lean project to streamline our processes and managed to take allot of admin waste. It enhanced our processes and also raised staff satisfaction" C2M3

According to Montabon et al., (2007) although firms acknowledge that environmental sustainability is paramount and has implications for their competitive positions, often are unclear about the implementation aspects of the environmental management practices and systems. However, production efficiency has been a prime objective of manufacturing firms since the inception of the assembly line and the subsequent advancement of the Toyota Production System (TPS) and lean manufacturing (Holweg, 2007). Lean manufacturing mostly centres on the systematic removal of wastes from firm's operations by a set of synergistic business practices to provide services and products at the pace of demand (Simpson and Power,2005; Shah and Ward, 2007).

Lean manufacturing also denotes a multi-faceted concept that may be grouped as distinct packages of business practices such as JIT, total quality management (TQM), total preventative maintenance (TPM), and human resource management (HRM) (MacDuffie,1995; McLachlin, 1997; McKone et al.,1999; Swink et al., 2005; Linderman et al., 2006; Shah and Ward,2007). The mostly adopted definition of lean manufacturing is an assortment of practices centred on reduction of wastes and non-value-added activities from a firm's manufacturing operations (McLachlin, 1997; Shah and Ward, 2003, 2007; Li et al.,2005; Browning and Heath, 2009).

Firms that have favourably overcome their internal waste by lean production methods also perform practices for more reliable environment management system (Melnyk et al., 2003; Montabon et al., 2007). Systems are designed to reduce waste and deliver quality products first-time through (Shah and Ward, 2003; Kennedy and Maskell, 2006). Such practices extend the scope of waste minimisation applications beyond efficiency within the organisation and towards all stakeholders (Zhu and Sarkis, 2004; Kleindorfer et al., 2005). The industry has seen a rising interest from a diverse set of stakeholders which included government regulators, local communities, shareholders and customers who might influence firms' corporate strategic practices and decision-making processes (Buysee and Verbeke, 2003), towards enhanced organisational performance. In this study, organisational or firms' performance is the business performance towards its environmental and social responsibilities (Kleindorfer et al., 2005). It necessitates the organisation's responsibilities towards their shareholders and its profit maximisation purpose (Rappaport, 1987), through the adoption of lean manufacturing and waste elimination within the firm's production systems through continuous improvement and process changes for reducing non-value-added activities and elimination of wastes (Womack et al., 1990; Florida, 1996).

Scholars argue that a previous knowledge associated to the differentiation of value-added and non-value-added tasks, value stream mapping and ISO quality certification experiences might be necessary to the firm's efforts of environmental and process waste (Cohen and Levinthal, 1990; King and Lenox, 2001). It is further emphasised that employee involvement in embracing environmental practices is critical in achieving performance (Florida, 1996). Lean and process waste elimination forms inside the firm, the bearings to improve employee responsibility and include employees' involvement in waste reduction attempts (Shah and Ward,2003; Tu et al., 2006). Fullerton et al. (2013) supports those efficiencies result when the characteristics of the people are harmonious with the work of the firm and management accountable for quality delivery of the product are trained across functions and empowered to make operating decisions and adjustments to their work environment (Fullerton and

McWatters, 2002). As employees acquire the characteristics necessary to make timely, effective decisions, they are more motivated to be empowered. They accomplish organisational goals; hence managements are spared and enabled to concentrate on advancing strategic initiatives while employees focus on day-to-day activities necessary to execute the strategic corporate vision. This was clearly highlighted among the participants as one of the upstream managers stated:

"...before applying lean management, we were bugged by daily routine activities and our leadership running a more transaction approach to management. Lean created a culture of authority and empowerment but with accountability. Now I could do more value-added jobs" C1M4

Although lean designed to bring value by eliminating waste but sometimes could be over whelming task especially for manual workers. Hasle et al (2012) poise that low complexity job might experience a negative impact of lean on employees health and wellbeing especially.

Environmental management are clear candidate in the oil and gas industry for lean practices in support for the strive of reducing wastes and pollutants minimisation (Yang et al., 2010). The literature further support that environmental management practices encourage firms achieves process and procedures which imped environmental consideration across all functions within an organisation (Sroufe, 2003). Such process and procedures are expected to decrease an organisation's negative impact on its environmental performance, especially in combination with the adoption of ISO 14001 Certification (Melnyk et al., 2003). Likewise, design for environment provides an association to design eco-friendly products and services, reducing their impact on the environment and improving environmental performance (Sroufe, 2003). Lifecycle analysis, for example, might provide a focal firm with a process to examine and understand better the impact of its products and processes on the environment by their life cycle and supports the improvement of its environmental performance in the oil and gas industry (Matos and Hall, 2007). The environmental management practices such as design for environment, environmental management systems (EMS), ISO 14001 Certification and life-cycle analysis all will allow focal firms to improve environmental performance.

The environmental management system like ISO 140001 has been practised most among the focal companies to design the environmental management system, and participants stated many success stories of implementing environmental system created better outcomes. This is in line with Yang et al., (2011) finding. Yang et al., (2011) in their strive to understand the relationship between lean manufacturing processes and environmental management practice examined the business performance of 309 international manufacturing firms and concluded that the lean manufacturing process is positively correlated to environmental practices and performance. Also, enhanced environmental performance considerably decreases the negative impact of environmental management practices on the market and financial performance. Kennedy and Widener (2008) used a case study to produce a theoretical framework of management accounting and control practices for firms pursuing a lean manufacturing strategy. Further, Fullerton et al., (2013) using the Kennedy and Widener (2008) framework and a structural equation model provided further evidence that lean manufacturing implementation is linked to sustainable performance practices. Using survey data from 244 US companies with an interest in lean manufacturing, they found a direct positive relationship between the degree of a lean manufacturing implementation and visual

performance measurement, information strategic reporting system, value stream costing, and employee empowerment and highly dependent on management support.

Therefore, this study confirms the experiences with lean manufacturing processes have enabled focal firms in the oil and gas industry in Oman to utilise environmental management practices and enhance their supply chain performance in more sustainable way.

5.4.2 Corporate Social Responsibility

While business practice illustrates that companies voluntarily embrace social and environmental concerns into their activities and their relations with stakeholders. The corporate social responsibility (CSR) is still provoking discussion over how it should be implemented and what are the dominant model in business practices, how results are attained and what intentions motivate them (Witkowska, 2016). This was evident in the usage of the term among many participants in this study which varied from being ethical to building a local hospital. However, due to its contribution as a form of sustainability performance, CSR has lately been the topic of increased scholarly consideration (Balabanis, Phillips and Lyall, 1998; Tate, Ellram and Kirchoff, 2010; Tang, Hull and Rothenberg, 2012; Lech, 2013; Witkowska, 2016; Mani and Gunasekaran, 2018). The concept of CSR, as discussed in chapter two, means that firms undertake optional responsibilities for workers, suppliers, consumers, and local communities regarding social and environmental dimensions of their economic activities (Witkowska, 2016). The description stated above implies that CSR comprises such activities as (Balabanis et al. 1998:27) state:

- environmental protection such as reduction of emissions and promotion of materials recycling.
- philanthropy if a form of charities donation, etc.
- involvement in the promotion of social issues such as human rights and disease eradication.
- urban investment such as working with the local community in generating business opportunities for employment and inclusive growth
- employee schemes which might include good staff welfare, attraction and retention and treatment, higher standards of living and occupational health and safety.

The Oil and gas industry in Oman have exhibited many forms of CSR activities through their publications and statements made by the participants in this study. It is in concurrence with Ranängen and Zobel, (2014) observation that the most extensive and practised CSR practice is in the extractive industry and especially in the oil and gas industry (Ranängen and Zobel, 2014). It seems there is a consensus among all participants in the role of their CSR activities in driving better attraction and retention at the company level and better occupational and HSE at the value network. C1M3 capture this on behalf of the participants.

"Since its inception, the oil and gas industry in Oman has adopted different CSR principles which set out the industry beliefs, values and behaviours that oversee the way we manage our business and outline how we perform on our responsibilities to stakeholders and communities we serve."

Another participant explained how the CSR activities are performed in the industry in Oman.

"The company CSR programmes focus on generating and delivering business opportunities that maximise benefits to society and by enhancing skills and knowledge transfer beyond our operation boundaries. We work to guarantee that neighbouring communities benefit economically and socially from our presence in their neighbourhood and the country as a whole." C3M1

Scholars also debated the CSR relationship with firm financial and non-financial performance, and some argued there is a positive relationship between CSR and financial performance and other limited the benefits to non-financial within developed and developing economies (Balabanis et al., 1998; Tsoutsoura 2004; Byus et al. 2010; Tang et al. 2012; Lech, 2013; Kirat 2015; Saeidi et al., 2015). A study by Balabanis et al. (1998) of the economic performance of 56 large UK companies highlighted a weak correlation of both CSR performance and disclosure. It further argues that the involvement in environmental protection activities was negatively correlated with subsequent financial performance. However, social performance related to women's position was more favourable towards subsequent financial performance (Balabanis et al., 1998). Tang et al. (2012) using longitudinal data from a sample of the Environmental, Social and Governance factors (ESG) database produced by Morgan Stanley Capital International (MSCI) argue that firms benefit further when they choose a CSR engagement strategy that is compatible, involves relevant dimensions of CSR, and starts with features of CSR that are more internal to the firm. The sample might be dated as it was conducted during the period from 1995-2007 but was reasonable in size of 130 firms and highlighted the role of strategy in driving CSR and further confirms that regardless of contextual factors, a firm can determine the precise strategy to improve the financial benefits of the CSR commitment. More recently, Saeidi et al., (2015) studying the Iranian manufacturing firms, developing economy, concludes that only competitive advantage and reputation mediate CSR and firm performance. However, others argued there is a mixed relationship and associated that to the methodological treatments and the need for longevity studies (Lech, 2013).

The oil and gas companies are well known for their CSR activities to offset their environmentally tarnished image (Frynas, 2009; Kirat 2015). Kirat (2015) studying CSR in the state of Qatar, part of GCC and a context related to Oman, highlights that the country paid excellent attention to corporate social responsibility (CSR) to face many challenges including globalisation challenges, the role of corporate governance and sustainable development performance. The oil and gas industry in Qatar's CSR programmes and activities are identified being focusing on sport, health, education and environment protection while ignoring other vital areas of social sustainability such as labour rights, human rights and work condition at supply chain level. He recommends that CSR should be enforced by law and performed according to leading international standards in order to enhance its performance and to attend local and wider global challenges.

The oil and gas industry in Oman are considered to share the same approach in focusing on the similar activities highlighted by the work of Kirat (2015). Among all participants in the sample of this study, participants shared similar activities but fell short from associating such activities to any direct financial performance and financial benefits to their respective firms. However, other participants, but a small number associated their CSR activities to the inclusive growth of society and not necessarily to the company. This was very much a case for a downstream company as depicted by C6M3:

"CSR grew to be a significant element in the company's thinking and commitment that, in 2015, the board created a foundation to manage investments in education, health and welfare all over Oman. A global organisation like the Arab League and multinational companies like Total and Shell have queried the foundation's advice as a model for CSR in the region." C6M3

Another participant also highlighted the focus on governance and the amount of spending on CSR project since the company inception in the year 2000.

"The company is leading the industry in corporate governance and CSR spending. So far, we have committed more than $500mn into corporate social responsibility (CSR), and we created a kitty worth $220mn for the future generation. I think we can claim that there is no company spends so much on CSR initiatives."C6M4

Although empirical studies on the prediction between CSR and financial performance often reveal mixed results, an expanding number of scholars hold the view that by building a close relationship and collaboration with main stakeholders a firm and its supply chain can develop specific intangible resources such as human resources development, enhance firm reputation and image. This result in a focal firm being able to achieve a competitive advantage over its competitors (de Man 2005; Andersen and 2009; Hsueh, 2015). A recent study by Lalwani et al. (2016) argued that focal companies in the cocoa industry appear to deal with social issues in their value chain as part of their strategic agenda. Also, most the companies' CSR initiatives would either be regarded as part of value chain social impacts or within strategic CSR and the organisation's competitive context.

Most scholars also associate the adversaries not performance but more to a methodological problem as it is challenging to measure CSR activity and recognise all control variables defining the relationship between CSR and profitability. Also, investigation of the link between CSR and economic performance demands a long-term view. Therefore, considering the debate so far and the different empirical results highlighted in the literature for firms in developed and developing or emerging economies recommendation for further research confirming the link between economic development and primary stakeholders' responses to CSR activity is very viable and highly recommended (Lech, 2013).

5.4.2.1 CSR Towards Primary Stakeholders

The literature has established that companies practising sound CSR system towards their internal stakeholder's, employees, workers' unions, through a favourable remuneration policy, participation in decision making, and conducive working conditions portray a good CSR toward their employees (Turnab, Greening 1997; Berman 1999; Lech, 2013; Jamali, 2014). By adhering to leading standards, firms can serve employees' needs, improving their job performance as satisfied employees have higher motivation and higher productivity which results in enhancing the company's financial performance (Berman and Bui, 1998).

This was well acknowledged by the participants in this study as the perception of good CSR have contributed positively to talent attraction and retention. A quasi government and a leading focal firm argued that their commitment to local talent development is rooted in the company strategy for creating talent for the company, the supply chain and Oman. A participant stated that:

"Despite the prevailing oil price environment, we are committed to staying the course and securing notable investments which will directly boost Omani jobs and development opportunities and establish a sound and sustainable local supply chain. Since 2011, we have managed to contribute to the growing demand for jobs in Oman by creating more than 35000 National Objectives job and training opportunities. (C1M1)

According to a study by Oxford strategic consulting, (2015) the intervention of government in increasing minimum wage for Omani private-sector workers has helped to adjust the incentives mismatch between public and private sector but also causing it to more expensive for the private sector to hire Omanis. However, the 'attraction mismatch' still exists as the public sector jobs are regarded, particularly by Omani youth, as less demanding, more secure and more desirable while companies in the private sector see that expatriate human resources are more affordable, easier to manage and more committed. Therefore, this structure issue will create a barrier for the private sector to attract and develop Omani talent unless focal firms are committed to supporting their supply chain member.

Companies perceived by external stakeholders having a strong CSR commitment often show an increased ability to attract better job applicants and staff retention, which leads to reduced staff turnover, recruitment and training costs (Turban and Greening, 1996). CSR may also influence work attitudes, increasing employee morale and their participation in initiatives that are beneficial to the company (Turban and Greening, 1996). The growth of human capital derived from socially responsible practices can become a source of competitive advantage and result in improved financial performance (Lech, 2013).

The literature also highlights that firms' CSR towards the community through its philanthropic donations, community relationships public-private partnerships, and cooperation in social and economic development matters are useful instruments for enhancing brand image and reputation building (Lech, 2013). Wang and Qian, (2011) argue that corporate philanthropy and charitable contributions can be strategically performed to promote a company's image and reputation and increase the value of its 'moral capital' (Wang and Qian, 2011). It is a practical and effective way by which firms can develop healthier relations with their primary stakeholders and consequently obtain positive responses, such as widespread participation and support on the part of the community. Employees and customers often associate themselves with pride for companies with moral worthiness and develop a better sense of loyalty to such firms (Lech, 2013).

Waddock and Graves (1997) further highlighted those investments in community development activities also encourage firms to achieve competitive advantages through tax savings and a reduced regulatory burden (Waddock and Graves 1997). Besides, companies that implement more stringent environmental controls appear a lower risk of paying hefty fines for excessive pollution or accidental mishaps (Tsoutsoura, 2004) and positions them ahead of the competition (Lynch and Barrett, 2015).

Suppliers are very instrumental in firm's success, and hence, a good CSR practice is helpful in its performance. The firm CSR practices could include: enforcement of sound health and safety of suppliers (Montero et al., 2009), the payment of fair wages to employees at both local and outsourced plant locations of suppliers (Öberseder et al. 2013), environmental impact of suppliers sourcing Haleem et al. (2017), ethical procurement of natural materials by suppliers Anderson and Larson, (2009), and exclusion of child labour and human rights' violations at suppliers' facilities and logistics (Mishra and Suar 2010). Therefore, a firm

assurance of suppliers' adherence to highest CSR standards enhances its image on the local and global market level and improves its financial performance.

A firm might enhance its image in the global market by ensuring that suppliers adhere to high CSR standards, and improve financial performance. However, a violation of CSR standards by suppliers damages the firm's reputational image and negatively affect its performance (Anderson and Skjoett-larson,2009; Tan, 2009). Minor and Morgan (2011) suggest CSR be a great method of reputation insurance when a firm experiences a disadvantageous event, especially for firms whose reputation is a principal reservoir of competitive advantage.

Recent crises and negative pictures of firms in the local and global market have also affected company's worthiness and the investor's perception. Therefore, investors have become more critical towards companies CSR policies and practices concerning issues such as respect for shareholders' rights, shareholder participation in decision making, policies toward insider trading, auditors' independence, transparency in financial and non-financial disclosures, and transparent compensation policies concerning top executives. Mushra and Sura, (2010) in a study of the Indian market, developing economy, find that the Indian stock-listed firms display responsible business practices towards their primary stakeholders and better profitable and financial performance than the non-listed firms. Adoption of more reliable corporate governance standards enhances firm performance (Mishra and Suar 2010) as companies embracing CSR principles to investors are more transparent and have a fewer risk of bribery and corruption (Lech, 2013). A recent study in the telecom industry in united Arab emerita (UAE), shows CSR as corporate activities that contribute positively to non-financial organisational performance such as improved products competitive advantage, enhanced corporate image/reputation and stakeholders' wellbeing (Agwu, 2019). The participants in this study also associated the non-financial benefits of their CSR practices which included enhanced reputation and public image. Except for the retail industry, downstream, none of the companies is listed in the Muscat security market (MSM) hence difficult to validate. However, the one is listed in MSM claimed the impact on the corporate image is minimal as most of their investors are government institutions like the retirement fund. This is highlighted by one of the participants.

"Although we are listed companies in the MSM and have to report our corporate social responsibility, most ethical, it is not the driver as the impact is minimal. However, we have many CSR activities geared toward supporting the community. For example, we know road safety is local and global concerns, and it is part of the company to contribute to goal zero and enhancing road safety behaviour" (C7M2)

Another participant further highlights the social media and reputation is the main driver for CSR and sustainability and not financial performance.

" It is part of the company to contribute to society to retain our licence to operate and be accepted as a good corporate citizen. Our CSR programmes are not designed to gain finance but no doubt to retain a positive social image" C6M3

The oil and gas industry are among the few industries that have been pressed to advance corporate social responsibility (CSR) policies and standards. The industry, in it strive to manage the pressure, started the creation of non-governmental organisations and departments of the oil and gas firms focused mostly on CSR (Berkowitz, Bucheli and Dumez, 2017).

However, given the intrinsic and complex characters of this industry, the wide variety of stakeholders and its global reach, CSR matters cannot be determined and performed solely at the industry or firm levels, but demand the cooperation of other actors influenced directly or indirectly by the industry and its activities. For CSR to achieve its a shared value and not only mitigating risk a process of multi-organisation needed to take the process forward by a meta-organisation or organisations composed by other organisations (Ahrne and Brunsson, 2005; Mihai, Schiopoiu and Mihai, 2017; Furey, Cho and Mohr, 2019). There is a new development in the oil and gas industry in Oman targeting more consolidation of effort towards CSR and sustainability like the establishment of Oman LNG development foundation in 2011, but efforts are concentrated at a company level. Nevertheless, at the downstream level where the profit margin is low and allocated budget toward CSR is moderate and fluctuating the emergence of a consolidated effort started to take place hence there is recently newly established meta-organisations of collective organisations like Jusoor in Sohar industrial areas in 2012 and Tawasul foundation in the new establishment Doqum industrial zone in 2015 all aiming to enhance and consolidate effort and the contribution to sustainability in their areas of operation (Jusoor.om). Although the establishment of Jussor and Tawasul have shifted the focus from the oil and gas industry towards a more inclusive approach and the inclusion on the non-oil industry, it further needs the establishment of a shared agenda with a clear framework processes where the group members' preferences are amalgamated into shared priorities for action topics (Vilkkumaa, Salo and Liesiö, 2014). This will be extremely useful in the current socio-economic challenges Oman faces in accommodating the growing youth population.

5.4.3 The In-Country Value

The social and economic underperformance of many oil and gas producing counties often resulted in conflict and prompted more authoritarian consultations (Ahmed, 2015). It is also, argued that the majority of Oil and Gas wealthy countries have missed relinquishing their full potential hence leading to less economically enduring environments (Thurber, Hults and Heller, 2011). Consequently, in the search to accomplish the objective of economic development through the exercise of authoritative sovereignty, many developing countries pass legislation or appropriate measures that conflict with the substantive rights of foreign investors in the host state (Okpe, 2005). However, many countries, in collaboration with their FDIs and oil developers' partners, also have thrived and made a prosperous and a vibrant social inclusive development.

Oman is relatively less rich as compared to its oil-rich gulf next-door-neighbours but made a substantive sustainable development (Ghouse, McElwee and Durrah, 2019). Oman has undoubtedly utilised legal frameworks and institutional systems to serve Omani society. Oman's success can be credited to numerous inter-related constituents, and an institutional design strengthened under a cooperative political will. Also, sustained regulatory frameworks devised to facilitate the development of local competitive goods and services commonly recognised as Local Content requirements or in-country value. The legal stipulation indicated explicitly affirmed objectives and rationales for nurturing local participation in the oil and gas industry and have evolved as an enabler for improving cross-sector growth, job creation, and national capacity building (Oman Incountry Value, 2019).

The oil and gas producing countries are launching requirements for 'local content' into their regulative frameworks. These provisions aim to promote enterprise development, create jobs and accelerate the transfer of skills and technologies needed in their respective states. Local

content or ICV strives and strategies; therefore, have become a strategic issue for the oil and gas industry offering both opportunities and challenges (IPIECA, 2011).

The Omani government describes ICV as "the total spends retained in the country that benefits business development, contributes to human capability development and stimulates productivity in Oman's economy" (Oxford Business Group, 2016). The ICV project consolidates a comprehensive set of policies intended to maximise the intended sum and increase the accumulated sum from 18% to 32% by 2020. The potential sum of additional opportunities in the oil and gas value chain between 2013 and 2020 might reach $64bn (Oxford Business Group, 2016).

The ministry of oil and gas argues that the strategy of ICV is to further leverage the oil and gas industry collective efforts and initiatives to progressively and effectively improve the Omani supply market and heighten the ICV development environment. The ministry who is the champion for this national project is establishing a mission designed to building a competitive and sustainable local supply market collaboratively with its stakeholders in order to achieve goods, services and skills.

The industry appreciated this collaborative approach and praised the collaborative nature of the project management office (PMO) in the ministry of oil and gas (MOG) with the industry. The strong leadership of the oil and gas ministry, by chairing the main working committee was a significant enabler the In-country value (ICV) journey to achieve success and build capacity through institutional collaboration with partners companies. This was the consensus of participants in this study. Participant from the upstream states:

"The leadership of MOG, the establishment of the PMO, the collaborative nature of the leadership of the industry are all factors in the success of the ICV in Oman" C2M1

Other attributed the success of the programme to collaboration with other government authorities like the Ministry of Manpower and a non-governmental institution like Opal. A participant from the downstream sector captured that in stating:

"A critical success factor for ICV from my perspective is the facilitation the PMO managed to achieve in coordination with other government and non-government authorities." C6M5

The ICV in other developing economies, for example, in Nigeria and Angola also seen similar establishment. The Nigerian Content Development and Monitoring Board (NCDMB) was established and tasked to collecting and evaluating Nigerian content plans and dealing with numerous applications for approval (Ovadia, 2013).

Working committees across diverse stakeholders was also seen as a success driver for the ICV project in Oman. Another participant in the upstream captured this by arguing that:

"I think the successful implementation for ICV in Oman is linked to the establishment of working committees across multi-disciplines related to ICV. The PMO established multi-committees including contracting and procurement, Human Resources and Health, safety and environment." C3M4.

Project implementation success is further associated with clear strategic objectives. According to the portal In-country value Oman, (2019), the ICV project in Oman is centred around two objectives.

1. Increasing Omanisation and developing the skills of the national workforce.
2. Increasing in-country spend on local goods and services.

Companies establishing activities in the oil and gas sector in Oman must conduct an evaluation which appoints the percentage of local spending in all these areas highlight by the ICV strategy. In the case of localisation (Omanisation), the numbers also must comprise a percentage of total headcount as well as the number of man-hours worked, while training is recognised as a percentage of local training in total national working hours.
The strategic objectives further stilled in order to establish a process of identification and common industry ICV initiatives that will underpin sustainable supply chain development and nation-wide growth. The established process evolved to create a collaborative process to develop industry wide ICV terms and conditions for tendering and contract management. The participants in the study valued this process as transparent and fair in establishing a common ground. However, smaller size companies perceived the process as challenging and stretching to create a one size fit all.

Another ICV success was associated with the establishment of joint supplier's registration system (JSRS). Although initially was perceived a cumbersome and slow but grew momentum at later stages of the evolvement. A participant highlighted this by stating:

"Although we have always engaged in projects relates to sustaining value in Oman through many different initiatives, the establishment of ICV has accelerated and defined a process of delivery. Also, the JSRS provided a common platform for all supply chain members to serve the industry at one point of delivery. before JSRS contractors and supply chain members had to register with all operators following different guidelines and procedures" C1M5

Establishment of specialised bodies to manage the process of local content is not new to the industry as the Government of Norway initiated the Oil for Development (OfD) Programme in 2005. The main objective of the OfD programme is to reduce poverty by encouraging responsible administration of oil and gas resources and responsible governance for sustainable economic growth and welfare for the citizens (Norad, 2016).

The participants in this study of ICV related activities and the process put in place by the PMO, and the ministry of oil and gas have indicated good governance and a high level of accountability. This is to the contrary to the study of a similar project in other developing economies like Nigeria. Ado, (2016) argued that although the performance of NCDMB's was advantageous to a considerable extent, the study uncovered that fronting, corruption and non-disclosure of the beneficial ownership of some oil firms continued to be the notable challenges of local content in Nigeria. However, this study concurs with his finding with the lack of accounting standards for the development and presentation of local content or ICV information in the annual financial statements of focal companies. Therefore, it supports the inclusion of ICV material reporting or incorporate them in the or expand the existing IFRS 8 and IAS 21.

IPIECA (2011) points out that every local content strategic plan should incorporate suitable and relevant indicators that enable the companies to measure progress toward stated corporate objectives to enhance compliance and reporting requirements. Wholey and Hatry,

(1992) argue that performance monitoring in public programs is feasible and worthwhile but associate the barriers of reporting to accountability avoidance. Other reasons are the casual relationship between the cause and impact of projects are vague and often none but a presence of management agency — the fear of consequences in the event of reporting.

Oman's oil and gas sector will have to deliver a more notable role in addressing some of Oman's most constraining sustainability challenges, including creating higher value local content locally known "In-Country Value" (ICV). Currently the industry forecast total spend retained in country that can serve business development, contribute to human capability development and stimulate more productivity in the Omani economy. The industry has distinguished an additional $64bn In-Country Value (ICV) generation opportunities in the recently unveiled blueprint strategy for the ICV development in Oman's oil and gas industry (Bhatnagar, 2014). The implementation of the In-Country Value (ICV), in the oil and gas industry together with the country's Local Workforce Development Programme has further defined a curriculum that establishes the demanded skills and standards within the industry and beyond (Al Hadhrami, 2015).

Therefore, the oil and gas industry in Oman adopted and implemented ICV very successfully in a collaborative manner with the government authorities, NGOs and supply chain members. Efforts of good governance, accountability is complemented by the adoption of leading global practices and good platform of contractors' registration and monitoring. There is evidence of technological innovation towards better inclusive and sustainable growth, but economies in transition are growing fast with high demand for more energy to fuel its growing demand. The growth in a hydrocarbon is further challenged as unsustainable, and a collaborative strategy might be inadequate to address the growing challenges. Therefore, the next section will discuss the further evolvement of that transition and what the oil and gas industry is doing to address it.

5.4.4 The Energy Transition

Economies in transition are growing fast and linked with rising population and require more energy to fuel its growth demand (Riti *et al.*, 2018). The oil and gas industry is witnessing in recent time a change in identity and purpose and becoming more energy focused (Akuru *et al.*, 2017; Brimmo *et al.*, 2017; Oyewo *et al.*, 2018). The energy sector also faces pressing problems from reliability, and climate change and significant jumps in environmental efficiency may be possible with sustainability transitions and new energy systems (Verbong and Geels, 2010). Realising what drives the implementation of renewable energy is also a necessity for energy transitions toward a post-fossil-based energy economy (Lutz *et al.*, 2017; Oyewo *et al.*, 2018). This was highlighted by participant:

"So, we have all looked at the statistics from the International Energy Agency which shows the contrasting trends in terms of the evolution of increase in demand on gas and renewable energy and nuclear and going forwards decline post to 2030 off oil. Therefore, in line with our strategy we have just awarded 100 Mega Watt solar IP in the south to Marbella consortium the solar power." C1M2

There are three essential types of actor influence change toward sustainability and energy transition. They are government actors, business actors, such as large and leading energy

firms and civil society actors, such as community and environmental associations and NGOs. Trutnevyte *et al.*, (2015) claimed that multi-level transitions theory argues that governance and the choices of key actors, such as energy companies, government and civil society, drive the transition. The governance is the processes and structures that influence decisions made by various actors within the system, including national and local policy-makers, financial investors, focal firms, new entrants and end-users and how these opportunities give increase to changes to the system (Smith, Stirling and Berkhout, 2005). This was clearly indicated in one of participants:

"Our board is pushing us to look at innovation into utilizing alternative renewable energy in our operations." C1M3

Although different actors have centrally different 'logics' or framings of the critical energy challenges their choice of processes and technologies will have an essential influence on energy choices tendered and the application of any future low-carbon energy systems. This was also clear from one of participants:

"We have a wind project that should go live by 2020 in the south of Oman because that is where we have the most wind recorded"C2M1

Transition pathways proceed through the dynamic interaction of technological and social factors at and between distinct levels, mediated by the actions of actors within an 'action space' (Foxon, 2013). There are a government-led pathway, market-led pathway, and a civil society-led pathway.

Government leading transition to reduce greenhouse gas adopt energy transition through passing binding regulations, reducing perceived political uncertainty and encouraging collaborative process among stakeholders (Verbong and Geels, 2010). At the same time, Penna and Geels (2012) caution that, in the past, sustainability issues were limited on the agenda and policymakers had to be driven by social movements to make more demanding legislation. It might prove that policymakers tend to be compelled by relationships with broader publics and industry actors, catching and reacting to the outcomes of the societal debate. For example, the decarbonisation policy in the EU region has led to the promotion of renewable energy (Dutton and Lockwood, 2017), the Climate Change Act in UK to reduce green-house gas emission by 2050 by 80% below 1990 levels (Trutnevyte et al. 2015) and Germany raising the share of renewable energy (RE) to 45% of the cumulative electricity production by 2025 (Lutz et al., 2017).

In Oman, the government is targeting 30 % of renewable energy by 2030 and encouraging more collaborative approaches in achieving such objectives (Oman, 2040). However, the most influential factors that could hinder the diffusion of renewable energy technologies in order to contribute to low-emission energy infrastructure are political, technological and resource uncertainty.

"The company always strives to use technology in flare reduction and emissions. The deployment of electric submersible pumps to substitute gas lift technology, the use of energy-efficient power production turbines, and power plant waste heat (co-generation) just to mention few" C2M2

The electricity production sector is one of the largest CO2 emitters, where about 70% of the world's electricity is generated from fossil fuels. Thanks to its hydrocarbon, abundance Oman has managed to generate and cover 100% citizen with electricity which mostly generated from gas-fired engines (Energypedia, 2019). Renewable energy sources use natural resources, which have the potential to provide energy services with zero emissions (BP, 2016). Recent BP statistics indicate that renewable energy sources have contributed to around 15% of the world's total energy demand, while this contribution happens to be very limited in Oman. According to a study in 2008 by the authority for Electricity Regulation Oman, Oman has one of the most leading global solar densities and has the potential to produce sufficient electricity to meet all of Oman's national electricity demand (COWI and Partners, 2008). International Energy Agency asserts that Oman has not established any noteworthy capacities based on renewable energy.

Therefore, in order to achieve a better transition towards a low-emission infrastructure, governments need to formulate an environment where entrepreneurs can explore with their new technology (Verbong and Geels, 2010). Focal companies in the oil and gas industry need to drive the process of transition among supply chain members, entrepreneurs and society as well. The transition towards renewable energy generation will not transpire without the engagement of entrepreneurs who endeavour to take action amidst uncertainty (Meijer *et al.*, 2010). The Oil and gas focal firms in Oman have adopted renewable technologies in their facilities and financed energy generation at their concessions areas but still limited to solar at their operation facilities (MOG, 2019). Therefore, the focal companies need to intensify their drive to enhance sustainability practices through more facilitation process among its domain of influence. They could use their purchasing power to incentivise more socio-technology innovation among their contractors' community. They could also, facilitate virtuous cycles of change among entrepreneurial activities, mobilisation of financial and human resources, advocacy coalitions, and early adoption of technologies which might drive to the rapid deployment of small-scale distributed generation technologies (Geels, Hekkert and Jacobsson, 2008).

Also, focal firms in Oman may require innovative modes of engagement with government and civil society actors, as well as the usual modes of behind-the-scenes lobbying and more extended engagement with their contractors to lead the regime change towards less pollution. The government of Oman is targeting 30 % of renewable energy by 2030, and unless the focal firms in the O&G take the lead or collaboratively support that goal, it will be challenging to meet such national goal. The study of Lutz *et al.*, (2017) of the German renewable energy suggest that highly successful and less successful regions differ concerning the presence or absence of specific driving factors like focal companies.

However, the transition towards renewable energy generation will not happen without the engagement of entrepreneurs who endeavour to take action amidst difficulty (Meijer et al., 2010). In an article in the Academy of Management Review, McMullen and Shepherd (2006) contended whether an entrepreneur will involve in a particular action is a choice that depends on whether the entrepreneur is stimulated enough to act, given the uncertainty expected to encounter in pursuit of an opportunity (Mcmullen and Shepherd, 2006). So, motivation needs to surpass perceived uncertainty in order for entrepreneurs to act. The focal companies can support such drive-by facilitating financial incentive and technical support. The focal company's leadership interviewed in this study claims support to SMEs in the supply chain.

"We are striving to identify and scale companies proposing innovative solutions to forthcoming energy needs with the aim of building a global centre of excellence in future energy technologies and efficiencies." C1M1

A strategy consolidating funding from different sources, including industry and community energy initiatives and public funding, will create a positive influence on the national and regional economy from the use of renewable energy. Trust in government and energy focal firms is an influential factor that positively affects public support for energy projects and contributes to the recognition of the relevant publicity Understanding attitudes and pro-environmental behaviours in a Chilean community (Bronfman *et al.*, 2015). Pan, Liu and Li, (2017) showed that public trust is the essential factor in improving public support for any transition, especially in the energy sector adopting cleaner energy in China. Focal companies with their purchasing power and massive public relations apparatus could contribute to enhancing such trust and adoption. The role of local government is increasingly perceived as shifting from controlling and restraining to facilitating and supporting; the role of residents is experiencing transformations from receiving services and bearing rights to growing more active in their direct living environment and being submissive to duties (Wittmayer *et al.*, 2017). Thus, changing roles and relations are important on the public agenda and focal firms through their CSR programmes can enhance the role of community centres in taking a societal challenge as a starting point for contributing to changes in local structures, cultures and practices to enhance transition towards sustainable practices and energy transition.

5.5. SUSTAIANBLITY PERFORMANCE IN OMAN'S OIL AND GAS INDUSTRY

The growing strategic relevance of environmental, ethical and social issues, as well as relevant performance measures, has encouraged interest in corporate performance measurement systems and sustainability performance. Performance measurement and management mechanisms such as the balanced scorecard (BSC) are used to satisfy societal expectations and gain legitimacy (Hansen and Schaltegger, 2016). However, some argue that the existence of a business case for sustainability is still ad hoc or an add-on to the core business and requires a business model innovation (Visser, 2010; Jones and Corral de Zubielqui, 2017).

According to the data of the International Energy Agency, Oman has not established any remarkable capacities based on renewable energy (Energypedia, 2019). The oil production industry in Oman uses solar energy to power small equipment which are remotely located and at the domestic level used for water heating systems for tanks located on the roofs of private houses. On the other hand, solar energy is essential for steam production to extract oil from oil fields in the desert. Such reduced utilisation of renewables can be attributed to the abundance of fossil fuels, their high cost, and lack of stringent environmental legislations. Moreover, renewable energy (mainly solar, wind) will be cost-effective, and being built or realisation of these technologies is fast and can easily vary with time and market demand. The oil industry is starting to utilise solar energy at office and operation sites and generation of steam. Although the steam generation from solar has contributed to reducing gas in energy required to generate steam and one of the largest in the world, it is quite limited to the scope of potential. Energy generation from wind is in its infancy stage but seeing presence in the south of Oman as wind intensity is potentially higher.

Oil and gas industry will remain dominating our long-term sustainable energy demand in the future, and their adverse impact cannot be overlooked in any climate change debate. The industry needs to contribute to shared value and a collaborative approach to addressing the minimisation of green gas emissions into the atmosphere and social adversity that might cause. The society also needs to be engaged further to be part of a solution to decrease the impact of unsustainable consumption of energy. The downstream like refinery also need to contribute to the development of clean fossil fuel which leads to better statically operated fuel engines and clean fuel for transportation. Thus, the improvement of emitting gas effort must be advanced to invest in clean energy sectors and to satisfy future needs for a clean and healthy ecosystem.

The focal firms in this study are leading O&G companies, both upstream and downstream. These firms in recent years have been continuously striving to be more sustainable by developing socially inclusive and eco-innovative projects, that recognise the importance of social, environmental and economic factors in their supply chain. Focal companies in their effort in driving SSCM provides measures of how supply chain's sustainability is managed. These measures include measures of efforts to enhance equality and inclusiveness, measures of staff development and progression, measuring success among network members in enhancing health, safety and environment, measure of impact of community and CSR and ICV projects, measures of efforts to reduce its environmental impact, air emissions and hazardous and non-hazardous solid wastes. There is evidence the industry conduct a formal and informal environmental, energy efficiency and safety training reporting. The approach adopted in this study is to highlights few which felt of importance to the agenda of sustainability and factors of pressure exerted by stakeholders and institutions as most of performance measures have been covered in various sections including CSR of this chapter.

5.5.1 Sustainability Reporting

Governments, regulators and stock exchange continue to play a vital role in driving up sustainability reporting rates around the world (KPMG, 2017). Also, KPMG reported that the emerging reporting trends are the UN Sustainable Development Goals (SDGs), climate-related financial risk, human rights and on carbon reduction targets. The study further states that sustainability reporting has evolved to be a regular practice for large and mid-cap companies around the world and most of the world's biggest companies now integrate financial and non-financial data in their annual financial reports (ipid).

Around two-thirds of reports examined by the KPMG survey (2017) apply the GRI G4 Guidelines or Standards, which confirms that GRI remains the most popular framework for CR reporting. KPMG, in their 2016 report titled " Carrots and Sticks: Global trends in sustainability reporting regulation and policy states that:

"*reporting is the critical link between the big-picture ambitions and the data that shows what action has been taken to achieve those ambitions and what progress is being made. Without reporting, we cannot know what is being done or how close, or how far, we are from where the world needs to be."*

Admittedly, the SDGs also includes a particular goal (Goal 12.6) to promote companies to integrate sustainability report into their reporting series. Therefore, as sustainability reporting matures and become further integral to global action on environmental and social problems, the regulations, policies, standards and other instruments that demand or encourage

companies to report. This research argues that continues publication by companies makes a useful contribution to the efforts of governments, investors and other stakeholders to create transparency and held related parties more accountable for their actions.

This study found despite the companies acknowledging coercive pressure from stakeholders like government but shown partial impact on sustainability reporting especially using internationally recognised methodology like GRI. Among the sample investigated in the research, only one up-stream company used GRI reporting but was discontinued the following year. They argued it was cumbersome and was not mandatory to publish by the regulatory regime. This was summed by a participant:

"We looked into GRI reporting and other international reporting framework and found it cumbersome and administratively challenging to compile all requirements in the same way. We took a conscious decision to do more localised one as part and parcel of our corporate information management system." C4M2

However, they shared the intent to go back to it as they shift to be a more global company.

"We are not a public listed company, so there is no mandatory requirement on reporting, but I see it prudent to validate our performance" C4M3

Another upstream company publishes sustainability report annually but states that it has not been externally assured but has been reviewed by the ministry of oil and gas. The company further states that it has withstood the GRI Materiality Disclosure Services. It could be argued the main reason for not reporting in structured international way that these company mostly closed and have limited shareholding and listed in the Muscat security Market (MSM) which have recently evolved to demand ethical reporting. However, with growing concerns of lenders any future projects financing will require an external validation and a public disclosure. The establishment of the Oman Centre for Governance and Sustainability (OCGS)

Multinational companies (MNCs) operating in Oman the like of Shell, BP and Oxy stated they report Oman as part of their global report. In further review of MNCs, it was difficult to attract that part from the anecdotal representation of examples of practices. However, it indicates an external validation.

The downstream companies, mostly retailers, are observed using a form of reporting mechanism directed by the Muscat security market as part and parcel of corporate governance. Chan et al., (2014) study of Chinees industry CSR disclosure further support the requirement for mandating reporting and suggest that, rather than mandating particular disclosures, regulators might be properly served concentrating on corporate governance quality as a way of enhancing CSR disclosures.

The outcome of this study might differ from a study of Amran and Haniffa (2011) on the claim that only large and government linked companies use sustainability reporting but agree that size is relevant in driving reporting. There was only one upstream quasi-government focal and large company who annually reported their sustainability using international standards like GRI and UNSDG materials reporting. Furthermore, the MNCs operating in Oman indicated that their local sustainability report is integrated in their international one.

However further look at their respective global reporting presented very little on local context with the odd mention of success stories. Participants associated lack of reporting to the lack of government directive. However, they indicated other means of mandatory reporting to the authority such as environmentally related discharges, localisation, ICV and made in Oman purchasing. Also, companies used their website and other communication channels to CSR achievements.

It is further notable, despite the representation of board members from the government, through their shareholders representatives, it seems there is no influence on company reporting. The representatives usually are top personnel in the government service and well versed in government policy but mostly limited from two ministries namely oil and gas and finance which might be argued lacked diversity and inclusiveness. Jizi (2017) suggests that board with higher female participants and independence board members increase the legitimacy of CSR reporting and social value maximisation. The government can also proceed to play a significant role in advancing sustainability reporting and it can even increase it by making specific disclosures mandatory.

A study of Chen et al. (2018) in China suggests that mandatory CSR disclosure modifies firm behaviour positively towards elements of sustainability. However, it might be at the expense and interest of shareholders. As expected, one of the drivers of sustainability reporting is government and non-government social rewards like CSR reward. This is acknowledged by most of the participants, especially in the external affairs and CSR departments. According to C6M4, obtaining the CSR award is similar to validating their CSR purpose and hence improves the company image in society. This is in-line with Steurer (2010) outcome that none mandatory award can help progress sustainability reporting. Therefore, it seems from this study that among the pressure exercised by the three institutional mechanisms, coercive, mimetic and normative, there is a mix-outcome, and either can drive the company to apply external assessment criteria to determine the number of structural elements needed for sustainability performance.

Similarly, other factors such as the nature of the industry, the firm size and internal goals and through the institutional tools, influence the companies and ultimately be displayed in the company sustainability reporting as a mean of sustainable performance. Baumann-Pauly et al. (2013) propose that small firms hold many organisational characteristics that are advantageous for strengthening the internal implementation of CSR-related activities in core business functions but restrain outside communication and publishing about CSR. In contrast, large firms possess various traits that are favourable for promoting external communication and reporting about CSR, but at the same time restrain the internal implementation. Currently, the government through the ministry of oil and gas are mandating some ICV reporting, especially in human resources and local purchase, but that mandate could be expanded to corporate CSR reporting for better sustainability performance.

Therefore, it could be concluded that Oman's oil and gas industry do experience coercive, normative and mimetic pressures which resulted in driving companies to be more transparent and performance sustainably but with moderate impact and especially not internationally validated. The sector is growing in activities and projects and will be seeking global finance instrument. New FDI and institutional lenders will demand further transparency and more creditworthy reporting, and the industry is soon will be mandated to follow a system of reporting.

5.5.2 Diversity and inclusiveness

The comprehensive view of diversity usually is “refers to policies and practices that seek to include people who are considered to be, in some way, different from the traditional member” of an organisation (Herring and Henderson, 2012:630). Diversity management programs among the corporate world incorporate targeted recruitment, hiring of women and ethnic minority, mentoring programs and promotions policies and inclusiveness and diversity training. Although the scholars debated the effectiveness of those schemes in achieving their intended objectives especially gender diversity (Williams et al. 2014).

Major corporations including oil and gas embrace diversity as a major corporate social performance (Williams, Kilanski and Muller, 2014). In the study of the oil and gas sector in Oman, the percentage of gender diversity varied from company to another and company C1 and C5 for example, had the highest numbers of female staff 11.5% and 10% respectively. However, the top leadership in C1 made 27 per cent of women, and the same company had one female board member out of 11 representing diverse nationalities. This representation of women in leadership was unique to the company and the sector as it was not the case for the rest of the companies in this study. Further discussion with interviewees highlights different female contents in different functions of the company. C1M2 argued that the number of females in the department are among the highest in the organisation.

" I head up a directorate with about 500 staff. And I believe the statistics are that we have almost 40 per cent females within my directorate which is one of the higher numbers. And if we look at the demographics, actually we have a job rating system in the company. So, if you look at top grade 5 and below even now and 4 and below its predominantly skewed towards females rather than males. However, the challenges as we go higher in the grading system, so job grade three to one is where we need to inject more females to be able to not only climb the career ladder but successfully sustain their positions."

Further, look at the demographics of focal companies in oil and gas in Oman, board members also skewed toward male dominance among all companies and limited to a government representative, especially in companies where the government have a golden share. However, this could be considered a comparable percentage to other countries. A survey of board composition in the U.S. insinuates that most companies have embraced gender representation, with 99 per cent of S&P 500 companies and 88 per cent of Russell 3000 companies having at least one-woman director (Garcia and Papadopoulos, 2018).

Other countries, mostly European, are driving a very aggressive agenda and seeking 30 per cent female content in a board by 2030. The question raised by such requirement; at what pace will women require to be added to boards to attain this goal? If companies were to get 30% gender diversity by 2030 a mandate beginning in 2018, then one-in- two new director appointees would require to be female going forward, in order to reach the milestone. Garcia and Papadopoulos, (2018) further state the diversity quotas are frequently criticized for potentially deviating from a merit-based system, and for fostering arbitrary or politically motivated rules that may lead to board nominations that do not fit the standard nomination criteria (Garcia and Papadopoulos, 2018).

However, the notion is gaining further momentum and many groups around the world are especially focus on higher levels of gender diversity to enhance sustainability. Groups such

as the Thirty Percent Coalition in the USA, the 30% Club with chapters in 11 countries including Canada, the United Kingdom, and the USA, and the Diversity Action Committee in Singapore all seeking to enhance board diversity (ibid). In addition to becoming signatories to such groups, investors have taken specific action to further gender diversity. Three of the world's largest asset managers, State Street, Blackrock and Vanguard, have all highlighted diversity among their essential engagement priorities with issuers for the forthcoming season. Moreover, several investors delay support from directors at boards that lack gender diversity, and several tend to promote shareholder resolutions endeavouring to grow board diversity. BP, for example, highlights in its 2017 sustainability report that it is the board responsibility to uphold the highest standards in all company conducts, including operating safely and sustainably (B P Sustainability report, 2017).

According to the national centre for statistical information (NCSI) (2018), Omani male constitutes 19 per cent of the total percentage of Omani employed in the private sector and the O&G sector mostly dominated by the male as two-third of its employees are Omani males, and one third is non-Omani males. The leaders interviewed in this study, highlighted the skewed number of males in the oil and gas industry is due to the nature of work in the oil field and lack of facilities to accommodate females workers although Opal, NGO, associated the decreased number of females applicants to the sector recruitment practices such as gender-specific ads (Opal, 2018b). However, companies were claiming addressing the accommodation issue in remote locations to address diversity need. Part of their social welfare enhancing their interior camps to accommodate more diversity, including women. This could be seen in the sustainability report of CI as stated:

"Temporary accommodation camps (TCA) were introduced to meet the demand for extra accommodation for contractors' staff. These building consists of sleeping, kitchen, ablution and recreational facilities and is inspected annually to ensure compliance."

C1M2 further added that

"We are one of the quasi-government organizations within the region that are leading in terms of inclusiveness. We have about 20 female operators that are now trained to work in the interior. We have drilling engineers who are female and based in the interior. We have very collaborative and very supportive policies to ensure that females are not only comfortable working in the interior, but they feel as part and parcel of the workforce so they can go to the clinics and have female nurses attending to them and other very amicable policies." (C1M2)

Also, focal companies striving to support more inclusive strategies for women indicates policy are adjusted for women working in coastal areas and company headquarters. This is highlighted by participant.

"*.... in the coastal based staff, we have the Maktabi which is encouraging ladies and men actually to work from home. We also have these hubs where people are encouraged to go in and work from there. So, these are some of the inclusive policies that we have that cater to having a very diverse working environment in the company."* (C1M3)

Other are taking location issues more seriously and innovating in their approach as mentioned by one participant from upstream sector of the industry.

"We are looking at the interior locations, and we are looking at channelling or transforming them into permanent hubs. So, we do have a project at the moment were similar to the U.S. concept where you have suburbs. So rather than us viewing them as e ban interior location and having women and men working two weeks on two weeks off with back to back, we would like to actually have hubs with schools and hospitals and cinemas and other infrastructure that is more supportive." (C1M4)

This approach will help to enhance sustainability and triple bottom line for both companies and employees. This was highlighted further by C1M1 when he stated

"So, from a sustainability perspective it's no longer seen as an effort to go and work in those locations it's just a matter of your posted there in any other area whether it's Doqum or Sohar. So, you have like these industrial estates which have a residential aspect to it and with it looking at sustainability in the form of you know these days they have digital villages you have, for example, renewable alternative energy villages that are powered up by solar. So, we are looking at an entire holistic strategy into transforming these interior locations into more of a permanent suburb which would great to support not only the sustainability of women working and into the interior but also sustainable villages."

There is no doubt a more inclusive worksite for women especially in remote location will enhance diversity and inclusiveness and address some of skill shortage in the oil and gas industry. Currently from the participants discussion only quasi governments are more accommodating to invest to accommodate more female in the workplace. Focal companies are encouraged to further enhance policies to accommodate more female workers across all specialities. This will contribute to the government of Oman strive to address more social inclusion as successful localisation (nationalisation) policies are critical to the resolution of growing and challenging social problems in the Gulf States relating to rising populations and youth unemployment（Swailes, Al Said and Al Fahdi, 2012). Swailes et al. (2012) argue that one of the significant barriers for localisation in Oman is the perceptions of the employability of Omani locals continue to be a problematic supply-side problem and employers' preferences for foreign labour remains a difficult demand-side problem.

Also, Oman with its current diversity plan and the "Vision 2040" is vibrant of ideas to enhance economic diversification further, and, if Oman is to shift to be a global business hub for companies from a variety of countries, the government must eliminate barriers for gender inequality by enhancing living standards in remote location to attract more females to the workforce.

The participants shared their approaches to measurement. For example, in one of the focal companies' effort to measures and enhance equality and inclusiveness;

"Our staff survey is a gage on our performance, in response to our annual staff survey we launched a company wide diversity and inclusion campaign targeting fairness, gender balance and harassment and bullying to ensure that our people are able to be the best they can be, regardless of background." (C1M4)

Another participant shared their prospective on the role of measurement of staff development and progression in driving sustainable performance.

"staff are best asset and the company is determined to assess and progress staff. Changes made to our progression, recruitment and ranking process is already improving our working environment and staff retention" (C1M4)

Participant further highlighted the progress their company made in measuring success among network members even beyond the sector:

"in 2018 we intensified the role out of sustainable and diversified ICV programmes and initiatives to ensure Omani employment and skills level are positioned for the rapidly changing environment, both in the O&G sector and beyond our natural boundaries in other industries" (C5M3)

The International Labour Organisation, (2018) advocates that economic and social upgrading are core concepts of supply chain management and fundamental to the discussion of achieving decent work in the global economy. Economic upgrading is necessary for the creation of more and better jobs, while social upgrading contributes to the advancement of standards and rights at work and admittance to social protection. It further argues that "social upgrading is the gradual process leading to decent work in the global supply chains (GSCs). The concept of social upgrading maintains a balance with the process of economic upgrading. It is aligned with the four "inseparable, interrelated and mutually supportive" strategic objectives of the ILO Decent Work Agenda: employment, social protection, social dialogue and rights at work, alongside gender equality and non-discrimination as cross-cutting objectives." According to PCW shareholder force continues to grow in driving sustainability, as institutional investors now hold 70% of US public companies and are increasingly vocal about what they require to see from boards and keeping corporates directors on their toes (PwC, 2018).

The global oil and gas industry association for environmental and social issues assert that the primary focus for local content within the industry are the direct and indirect employment of nationals in the workforce (Hannah, 2011). Omani labour law is also articulate when it comes to juvenile and women workers. Article 75 prohibits the employment of both male and female juveniles before attaining the age of 15. It also authorises the minister of manpower to raise this age as per industry conditions. Article 80, further elaborate on women employment by stating " all the rules regulating the employment of employees mare applicable to female employees without discrimination in work between them." (Gulftalent.com). Oman labour law also elaborated further on the protection of the right of women through articles 81-86, which included working hours limiting to daytime (6 am-6 pm), dismissal for sickness due to pregnancy, and safety exposure (Manpower.gov.om).

Sustainability in the oil and gas industry could be further looked from the labour force content across companies. The oil and gas companies constituted of very diverse nationalities especially in upstream part of the industry and reached in one of them to sixty nationalities. The industry associated diversity of nationalities to reciprocal knowledge transfer and a working environment of diverse culture. An upstream participant argued that the diversity of shareholders also brought diversity in the organisation

" .... is a propeller for diversity and inclusion by having a diverse shareholder base and the reason why I'd like to latch on to that comment is that we also have some secondees that come in from our shareholders that also facilitates a different kind of working environment bringing in diverse cultures." (C3M2)

Although for some, localisation is a challenge in high skilled and knowledgebase industry and sometimes a deterrent from attracting best-experienced talent. This is stated by one of the interviewees

*"the company currently around 75 per cent Omanised and working towards the government goal of getting to 90 per cent but it is challenging to attract local talent in many skills. It is a challenge, but we are going to try our best." (C*4M1)

Although the localisation in the gulf state is not new topic, and many studies discussed the measures adopted by the governments in the GCC including Oman to promote their nationalisation policies include setting nationalisation targets and sponsorship systems in various industries to design quota-driven employment policies that serve to ensure adequate job opportunities for citizens (Godwin, 2006; Al-Nahdi, 2016). However, such devices have not yielded the required results as unemployment rates persist high in all GCC. Al-Nahdi, (2016) argued that the private sector in Oman like similar in other GCC countries has evolved in stereotypical perceptions of local workers concerning the loss of trust in Omanis and views that they are less productive. His study refuted the notion and found no indication that the educational system or English language skills were employment barriers to locals as normally stated by the focal companies in Oman, He further associated this to the effectiveness of recent government measures to enhance the quality of education. Also, al Nahdi (2016) challenged the common perception of nepotism or locally called Wasta and associated that again to the satisfaction of nationals with the recent actions taken by the government in response to the 2011 uprising. However, Al-Nahdi, (2016) studying barriers to Omanisation reported that barriers to Omanisation were found to be higher in the automotive sector, intimating that policy implementation is sector-dependent and advised policymakers to consider this when devising Omanisation programmes to catalyse Omanisation in specific sectors of growth.

Occasionally local culture and religious doctrine were also highlighted by interviewees as a barrier to localisation and gender inclusiveness. Alselaimi (2014) identified the encompassing cultural context in Arab societies which features conservative traditions about gender roles are perceived as having become entangled with Islamic fundamentals and traditions. However, some praised that the Islamic rules guide female participation in the private sector workforce. They ensure that women stay within Islamic conventions which are intended to guard their reputation by allowing working environments that suit their feminine nature as defined through Islam and should promote society to accept and welcome women's participation in the private sector work environment (Al Nahdi, 2016). However, this study did not highlight any Islamic doctrines or values are a barrier to inclusiveness but challenged the percentage of localisation in general.

This is in line with other studies in the GCC countries as some indicated that the nationalisation programmes in the GCC are all about intervention which focuses on a quick fix of replacing expatriates (Al-Aali, 2014; Mashood et al., 2009). Therefore, a more meaningful and successful job localisation policies in the GCC countries including Oman, should be more about designing a rigorous approach focusing on multiple dimensions that

cover; encouraging education and entrepreneurship to create jobs that local nationals will want to do (Harry, 2007). It also, generating a persuasive talent value proposition (Weir, 2003) and improving the quantity and quality of on-the-job training granted to national employees in the private sector (Forstenlechner, 2008).

Among the interviewees in this study, some advocated for policy change to accommodate more female in the sector.

"*Organisations need to change by introducing quotas for women, addressing productive and fair methods of segregation, enhancing family-friendly services, offering childcare facilities and flexibility"*. (C6M2).

Al-Humaid (2003) recognised the key drivers to job localisation in Saudi Arabia comprise; state recognition and incentives for private sector organisations and promoting training. He further advocated for raising awareness of the importance of work in the private sector and greater co-ordination between educational programmes and job opportunities, expanding vocational centre training and technical colleges. The social contribution was also seen as an important driver, and Al-Humaid further requested for rising private sector contributions to human resource development and strengthening Islamic values for manual work. Although, those factors paint a complex picture of the challenges ahead but are important to understanding job localisation processes in the GCC and Oman. The government of Oman recently has addressed most areas highlighted above in its "Vision 2040" and the private sector has been mandated to contribute through a training fund. This was highlighted by C2M1 when he stated.

" *I think what is good is that the sector is driving the standard for the other sectors. A presentation that the ICV committee made to the cabinet, which was oil and gas industry led, resulted in the Cabinet agreeing to a national training fund and more recently a national training centre for employment where the biggest impact will not be in oil and gas because as you know we're pretty well Omanised (localised) across the supply chain. Nevertheless, it will be in tourism and logistics and manufacturing and other sectors. So, although there is not a country law, there is a country best practice that has now been replicated to drive change in other sectors."*

Further analysis of the labour force rates by gender in Oman, it was noticed that the majority of the Omani labour force are male (World Bank, 2018). The world bank further provides data for Oman from 1991 to 2018 indicates an unemployment rate for females reaching highest 13.21% in 2016 and lowest of 7.82 in 2007 (The Global Economy, 2019) over total unemployment of 3.11 in 2018 and the international labour organisation (ILO) estimates youth unemployment in 2018 is 8.3% (Statista, 2019). Although this might be argued, it is higher than the global unemployment rate of 5.6 per cent in 2017 but better than the Arab world (ILO, 2017). The main social concerns for Oman are the lack of jobs and the adverse effects of subsidy reform on vulnerable households. The most recent ILO estimate of unemployment was 8.3% in 2018, while youth unemployment is approximately 49%, which is a pressing challenge in Oman where 40% of the population is under the age of 25 (World Bank, 2018a). Although the accuracy of the figure of 17% of unemployment could be challenged as the number of expatriates, mostly labourers constitute almost 50% of the national population. In response, the government initiated several schemes such as the creation of 25,000 jobs for Omani to be initiated in the private sector in 2018 and the cancellation of work visa issuance to expats for certain professions to be reserved for locals.

Swailes et al. (2012) argue that successful localization (nationalisation) policies are essential to the resolution of challenging social problems in Oman and the Gulf States associating to the rising populations and youth unemployment. However, successful localization is proving difficult, as the perceptions of the employability of locals remains a difficult supply-side problem and employers' inclinations for foreign labour remains a difficult demand-side problem.

Also, worldwide the vulnerable forms of employment (own-account workers and contributing family workers) are expected to remain particularly high in developing and emerging countries, at above 76% and 46%, respectively (ILO, 2017). The global labour market has witnessed only limited progress in the area of working poverty. In 2017, extreme working poverty persisted widespread, with more than 300 million workers in developing and emerging countries having a per capita household income or consumption of less than US$1.90 (PPP) per day.

Overall, global advancement in decreasing working poverty is too slow to maintain pace with the burgeoning labour force in developing countries, where the number of people in severe working poverty is expected to exceed 114 million in 2018, or 40% of total employed people (ILO, 2017). Oman is an oil and gas producing country and currently considered a high-income country and developing. However, the government's budget resources are derived mostly from oil exports which currently attracting global challenge for reasons like climate change. Hence such projected vulnerability might be an issue of concerns with Oman's current economic austerity and might add to pressure from society for more employment and gender equality. Government pressure for jobs creation and further training has been met with a very accommodating strategy by the industry as through direct employment or focal companies using purchasing power to mandate more localisation towards the industry value chain as highlighted above. A focal leading upstream is claiming driving an unprecedented progressive number of job creation and anticipating creating more than 35000 jobs in 2019.

CSR
Measure of impact of community and CSR projects was pointed as critical for focal firms striving to engage their effectiveness.

"We conduct Social Impact Assessment of our CSR projects. One of our key projects making more than 3:1 return" (C6M4)

One of the major pillars of sustainability is causing no harm to the environment and ecosystem hence measures of efforts of focal firms and SC members to reduce its environmental impact, air emissions and solid wastes and environmental reporting, energy efficiency and safety training is recognised as critical for any. Sustainability agenda. Participants voiced that vividly through the statements shared.

"Contractors report regularly their travelled mileages, and we take stoke of all our waste including suppliers (solid and Hazardous)" (M5C3)

Third part assessment also was highlighted as critical in providing assurance to all stakeholders.

"...the ISO14000 certification sets the criteria for an environment management system. We use it to improve the company resource efficiency, reduce generated waste and drive down cost" (C6M4)

Berliner and Prakash (2013) also confirm that ISO 140001 is the most popular selected voluntary environmental program in the world, which inspires participating firms to foster environmental stewardship policies exceeding the requirement of extant local states laws. They further asserted through a survey of 129 countries from 1997 to 2009 that the adoption of such a voluntary assessment provides investors and foreign customers assurance especially in countries with weak regulatory governance. A recent survey by Testa et al. (2016) carried out with the participation of 244 European EMAS-registered organisations highlighted that most of the studied firms had adopted and benefited from the Environmental Management Systems (EMSs) based on certifiable standards, prominently the ISO 14001 standards and the European Eco-Management and Audit Scheme (EMAS).

Participants further highlighted the use of government agencies within Oman to give the public the necessary assurance.

"We are very transparent with our emissions and MECA (Ministry of Environment and climate affairs) has being monitoring at all time." (C6M3)

This was perceived necessary by most participants to avoid the industry falling in institutional void developing economies suffer (Silvestre, 2015). For example, scholars like Puffer et al., (2010) insinuate that vacant or weak institutions or embeddedness of informal institutions in developing countries like China and Russia drove businesses to heavily rely on informal and personalised networks of influence centred on trust only. However other perceived the government enforcement of stringent environmental regulation as a challenge for global competitiveness and hence profitability (Solleiro and Castañón, 2005).

5.5.3 Health, Safety, Environment

Health, safety, ethical, and welfare are very critical parameters to be measured for sustainability performance enhancement. The oil and gas industry are among the most controversial and has been subjected to mounting scrutiny from many stakeholders (e.g., activist groups and media) regarding its health, safety, and environmental standards (Ghettas, 2015). This is associated customers and society have displayed better understanding and more informed and become more demanding in respects to these issues (Vermeir and Verbeke, 2006; Vecchio and Annunziata, 2015). Customer attention after traumatic incidents and industry disasters such as significant accidents and terrorist assaults can, for example, increase attitudes towards more stringent regulation of business and higher product and process quality (Dube and Black, 2010).

The oil and gas sector in Oman seem to have more informed practices and well-established performance indicators addressing HSSE. Participant from a leading downstream company highlights this:

"The company has 40 KPIs to be monitored at corporate CEO level, some at the department, rest at section level" (C5M4)
Another company states a similar approach towards supply chain member. It is depicted in this participant statement:

"HSE is very important, and our contractors are mandated to have a safe work environment. We measure compliance and use rewards schemes" (C5M3)

Other focal companies conduct a more comprehensive process of assurance through competency assessment of contractors and mandate gap closure as a process of assurance:

"We request the vendor to carry out competency assessment of there and closeout of gaps" (C5M2)

This study also confirms with previous studies on Oman. Dijk et al. (2008) and Al-Rubaee and Al-Maniri (2011) have both highlighted those work-related diseases are most reported in Oman's oil field injuries and advised the industry to foster a comprehensive surveillance system to help the monitoring of trends injuries and continuous assessment of prevention strategies. Parker and Malone (2004) further supported the notion in a study of drivers' attitude and behaviour in Oman oil and gas industry. They concluded that most of the drivers studied intend to drive safely and follow all the rules as a belief of looking out for themselves. It is also worth highlighting that road traffic accidents are among the highest casualties in Oman and the industry adopted the life-saving rules recently to enforce stringent measures to minimise the cause of harm to individual, assets and the environment.

However, Ghettas (2015), in a study of the Algerian oil and gas industry, argued that lack of top management commitment, leadership, and communication resulted in a culture lacking process safety management (PMS) and commitment. He further urged Sonatrach (the Algerian leading oil and gas company) to implement and improve PSM beyond the adoption of standards to enhance better sustainability performance in the industry of oil and gas.

The examples shared from Oman and confirmed and refuted by others illustrate that measurement is the best way to get a commitment from leadership and staff. Contractors, suppliers and the supply network need to work further to enhance the better, open system for reporting.

5.5.4 Energy Efficiency

Energy is a major shift most oil and gas strive to achieve sustainability performance within company or across the supply chain. SSCM focuses on cleaner fossil fuel production and clean energy products and technologies developed in collaboration with others to manage sustainable performance. This was clearly demonstrated by the participants in the study as was stated by this participant:

"The company always strives to enhance our production through energy efficiency. The enhancement via cogeneration and waste heat recovery in areas like steam generation activities. For example, in 2010, 320m3 of gas needed to generate 1MWh electricity. We managed to bring that down to 301 m3/MWh and further striving to bring further down to 270m3/MWh by 2020." (C1M5)

No doubt growing changes to energy and environmental policy, societal constituents, and a strong awareness of fast-developing technology is placing mounting pressure on businesses to manage the energy transition and enhance more innovative solution (Mlecnik, 2013). This

growth is also extended beyond operation to green building. Participant from downstream company further highlighted. This by stating:

"Recently our board agreed for the construction of new head office. It will be energy efficient and green. Power will be generated through a solar system; lighting comes mostly naturally, and the ambient will be very vibrant with green plants from wastewater. This makes us all proud and contributing to the green initiatives" (C6M2).

Innovation strive for better performance is also highlighted as area for growth by the industry. This is highlight by all participants and was summarised by one participant in stating:

"*The company remain committed to seeking better ways in green energy technology for energy generation to reduce dependence on fuel gas and generate electricity for business purpose. Currently our HQ fully powered by solar system. We are saving more than 3.1 million m3 of gas a year enough to power 1000 homes. To put it into prospective, this is almost equivalent to putting 1400 cars of roads or planting 173000 trees" (C1M3)*

Another participant also presented the industry to strive in introducing renewable energy to offset the industry consumption of hydrocarbon and profitability. He stated:

"We are so excited with potential of solar energy not only for environmental but also commercial and setting up a 100-megawatt solar photo voltaic plant in our concession area. You could imagine also the social benefits of such ventures" (C1M2)

A study by Maksood and Achuthan, (2017) of the Omani energy sector concluded that growth in energy efficiency within Oman would loosen the pressure on oil and gas reserves and help reduce the budget for the nation and advice for more adoption. However, investments in the energy performance of houses and offices might prove challenging despite its good prospect in reducing energy consumption and CO2 emissions (van Middelkoop et al., 2017). van Middelkoop et al. (2017) suggest that the government need to stimulate energy performance improvements and use of Energy Performance Certificates (EPCs) into the tax system. It might be a challenge and a barrier for adoption in Oman in the short term as energy provision is heavily subsidised, but focal companies need to support the process of creating a measurement system will enhance a better awareness. among suppliers.

5.5.5 The Circular Economy

Circular Economy (CE) is seeing more prominent in the literature. It has gained a broad appeal and championed by governments, non-governmental organisations, regulators, and many industries thought leaders, and is connected to consumer concerns about waste mitigation and preserving the environment, inspiring unconventional societal expectations and behaviours. Circular economy and circular design are growing interest by all stakeholders (Moreno et al., 2016). A circular economy enables a consecutive positive development cycle that protects and enhances natural capital, optimises resource yields and lessens system risks by managing and maintaining limited stocks and renewable flows (Mcdonough and Braungart, 2002). For a circular economy to flourish, products necessitate being designed for closed loops, as well as be adapted to generate revenues (Moreno et al.,

2016). Focal companies have evolved in using many methods in addressing waste management and often mandated by the Basel conventions on the control of the transboundary movement of hazardous waste and their disposal, and others to manage waste from the cradle to the grave (Mcdonough and Braungart, 2002). Companies in the oil and gas sector in Oman are participating in this strive, as highlighted by all participants but varies with company share size.

Also, companies using methods like lean to manage process waste which has been very useful in reducing the time taken to manage certain administrative processes which could result in economic, social and environmental benefits as discussed early on. However, companies must take waste in a different front in a more circular approach and managing waste from cradle to cradle. Some leaders in the interviewed sample have indicated an interest in circular economies but lacked implementation strategies. Interviewees associated lack of regulatory system affirming the need for recycling in Oman as a barrier to waste management adoption. Other defended the use of plastic and claimed most plastic use fewer resources and have a lower carbon footprint than metal, paper and glass they have replaced in cars and planes. The claim goes to say that efficiencies from lightweight plastic in cars and planes save energy which reduced CO2 emissions (Shell, 2018). (Shell sustainability report, 2018). While plastic in its myriad applications is inherent in every aspect of our life, 'pantaphobia' has joined the natural as a condition, and regulators are pushing hard on an industry that already faces several complex challenges (SB, 2019). The EU has raised the bar with the Single-Use Plastic Directive, demanding higher collection rates even with 2018 recovery rates for PET bottles in Europe at 63 %, and 55% in the UK. The industry is feeling the heat of the anti-plastic movement as was expressed from the International E-Chem Chairman Paul Hodges:

"It is very clear there is a paradigm shift going on in the industry. Companies are waking up to the fact that waste plastics are a big issue — one that's not going to go away. Single-use plastic is going to be in the firing line for the next few years — and business models simply must change" (SB, 2019:1).

However, it could be argued that the problem is not in plastic per se, but what happens after people use them and end up in the litter. Sometimes waste management infrastructure and traditional recycling do not exist within the vicinity of the company operation. This is highlighted by C3M1 when he stated that:

" it is unfortunate the country lacks infrastructure and we alone cannot process it as it is not economically viable. Some of our waste mostly hazardous waste end up shipped overseas to be incinerated or recycled. This is a costly process for the company".

Another, participants highlighted the company role in helping the authority in building a collection station and dumpsite:

" The municipality waste site caused allot of inconvenience for our staff residing at the company housing estate. It became a threat to attract and retain staff at the company. We had to intervene to relocate the waste site and stop metal scavengers letting fires in the waste site". C5M3

In recent time waste management with the help of social media gained a different twist. It affected one of the focal companies' reputations adversely. This was highlighted by C7M2 when she stated that:

" We thought we had an excellent relationship with society and our reputation is highly appraised till a social media campaign against our waste management methods took us by storm. The company took a big dent and much reputational rework."

C3 have stressed in a circular economy paper published in 2019 that a large proportion of the COMPANY's conventional business satisfies the description of the linear economy where natural resources in the form of oil and gas for a circular economy to thrive, products need to be designed for closed loops, as well as be adapted to generate revenues are extracted, refined and used, with much of the application in combustion. However, the same paper further elaborates CE opportunities may exist for the oil and gas extraction, refining and supply processes, and especially for non-energy product value chains. Oil and gas industry use plastic, much for machinery packaging and decommissioning.

Therefore, specific opportunities could relate to packaging, improving the circularity of plastics, lubricating oils, decommissioning, supply chain and operations processes. Shell, a leading oil and gas company, claims investments in opportunities to turn waste into feedstock, fuels, and other commodities are already taking place and entirely consistent with a Circular Economy approach (Shell Sustainability Report, 2018). Its further states that the company is part of a new global alliance to End Plastic Waste. The alliance which include many contributors to waste like chemical companies, plastic manufacturers, consumers good and others are working with the World Business Council for sustainable development. The alliance claimed to commit more than a $1.5 billion over five years to help end plastic waste in the environment. The alliance intended to focus on four areas of waste infrastructure, innovation, education, and clean up (Shell, 2017, 2018). The literature acknowledges that strategies for circular economies overlap each other, and as such, this study may present a summary of the most relevant strategies, tools and methods derived from the industry to highlight the potential of growth. It is also worth highlighting that the majority of the literature reviewed originating in the EU and some from the USA hence might be an area of limitation for developing economies (Triguero, Moreno-Mondéjar and Davia, 2013). There is no doubt this is an excellent opportunity for the focal companies to create new supply chain industries in Oman. However, it needs a collaborative approach for a shared agenda to create wealth and protect the environment.

5.5.6 Sustainable Procurement and Contracting

Growing anxieties about eroding ecosystem state have driven corporation to a rejuvenated interest in environmentalism and eco-friendly purchasing and reassess their current purchasing and outsourcing strategy (Min and Galle, 2001; Moretto *et al.*, 2018). Focal firms in the oil and gas industry are also working with suppliers to procure environmentally friendly materials and goods (Sueyoshi and Wang, 2014). Enhancing the measuring process is further being acknowledged as contributing to sustainability. A participant state this:

"Our resourcing processes are creating better value for money and better to the environment. In one of the projects recently we applied a novel design-build-own-operate-maintain (DBOOM) contracting model. This saved the company 78% improvement on company standard delivery time and created new supply chain."C6M4

Supply chain and acquisition strategies in the oil and gas industry represent an essential role in project success, due to their influence on project value and on the way project risks are achieved, and performance is measured (Handfield, Primo and Oliveira, 2015). It is further argued by Esteves and Barclay, (2011), that the combination of economic and social impact assessment (SEIA) into sourcing strategy could be a useful tool to improve the benefits associated with oil and gas projects to the neighbourhood and local communities. Hussain, Rigoni and Orij, (2018) Jo et al. (2018) also, argued that the use of good performance management system enhances the Triple Bottom Line Performance, which is a need in sustainability.

Therefore, in conclusion, focal companies in the oil and gas companies need to address a process of measurement in all dimensions of sustainability (economically, socially and ecologically). The success of a sustainable performance within the focal firm's boundaries or across the supply chain network will depend not only adopted strategy but also in the existence of a performance management system.

5.6 REVISED CONCEPTUAL FRAMEWORK

The literature review presented in this study demonstrates that sustainable supply chain management is growing further attraction from academia and practitioners as the globalisation of economies prevails prominence but with dangerous effects on people and the planet. It also indicates that supply chain members are experiencing evolving pressure from a vast primary and secondary stakeholder. The dynamic of the supply chain presented a presence of companies with great purchasing power and influence over the rest of the supply chain members and rendered to it the name of "focal firms.". The capacity of influence of a focal firm is further moderated by the market dynamics of the ecosystem which operates and influence. The literature further highlighted the context, and the industry type is also critical and a major influencer of the role of focal companies play in the ecosystem.

The dearth of studies in SSCM in developing economies despite being the central production hub for most major international companies further indicates the necessity for further research to contribute theoretically and empirically to the discourse of sustainability and supply chain management. Among the focal companies (internationally and locally) further lacking research are oil and gas industry despite their contribution to the economic growth of society but also an adverse effect on ecology and often have been associated to climate chain adversity.

The quest for the exploitation of national resources is on the increase to fulfil the global population growth and growing energy demand, but few studies focused on the industry challenges in managing and implementing sustainability in the supply chain (Matos and Hall, 2007; Wan Ahmed *et al.*, 2016; B. S. Silvestre *et al.*, 2017; Rezaei *et al.*, 2017). Moreover, it is still considered ecologically focused and lacked inclusivity of the people (Magee et al., 2013; Silvestre, 2015b), and the industry also sees sustainability by the environment lens (Silvestre, 2016). Also, the shortage of theoretical and empirical research on the degree to which focal firms have blended sustainability systems into the management of their supply chain is crucial (Carbone, Moatti and Wood, 2012; Matos and Silvestre, 2013; Morali and Searcy, 2013).

Therefor this study investigates the role of focal companies in mitigating diverse drivers and barriers and it strive in stimulating supply chain sustainability through sustainable strategies and practices. This study selects the context of the oil and gas industry to demonstrate the role of focal companies' situation in an industrial supply chain. This resulted in the development of a conceptual framework which guided the empirical examination of the context of oil and gas in developing economy of Oman. This conceptual framework enhances the previous literature and presents the conceptual elements related to the Oman context as explained in chapter two. The revised conceptual framework as depicted in Fig (5.1) as further elaborated below to highlight the consensus and discrepancy with the literature based. The literature review in chapter three and the empirical finding indicates focal firms' multi-stakeholders create pressure on the focal companies which drive implementation strategies of sustainability in the supply chain.

This conclusive model has been derived from the literature review discussed in chapter three and tested in the oil and gas industry in Oman. Based on the literature review, nine critical external drivers of sustainable performance were identified which include: government regulations, society expectation, shareholders and lenders, energy transition, standards, social media, transparency, sharing economies, maintaining the licence to operate, climate change and national hazard, foreign direct investment and economy diversification. There are also two more internal drivers which include: leadership Commitment and organisational Culture. Significant barriers identified from the literature and supported by the empirical study include hidden enterprise, intuitional weakness, lack of transparency, weak SD culture, lack of incentives, lack of internal alignment, operational focus, lack of awareness and the relative size and power of focal firms.

The framework indicates a clear recognition of the linkages between drivers and barriers in driving the decision-makers to undertake the problems and take the right actions in attaining a good understanding of sustainable performance. Identification of drivers enables the policymakers to identify the appraising area, which is to be focused and managed with more care. Barriers are the areas in the system, which are challenges in the proper implementation of the sustainability in countries and industries. Relative importance and interdependence among these drivers and barriers are discussed earlier and presented in the framework.

The current research framework highlights the role of leadership commitment and organisational culture in driving focal firms and driving sustainability performance. On the external level, robust policy and legal framework are paramount in attaining sustainability adoption in the country. So, these two variables drive the practical operations in the country and the industry by ensuring effective implementations of proactive practices.

The pressure factors discussed above also, varied in nature, intensity and magnitude on the focal firm which resulted focal firms practicing a diverse range of strategies:

Reactive and Compliance Strategy

Focal companies experiencing sever local regulatory pressure from government tends to adopt a more reactive strategy focusing merely on compliance towards health, safety, security and environment (HSSE). The interviewed participants in this study, both upstream and downstream maintained consistency with the literature in confirming the interaction between sustainability and supply chains is necessary for competitiveness and maintaining the corporates "licence to operate". This interaction results in focal companies mandating and

extending the compliance processes towards the supply chain members. It was deemed necessary by the participants to avoid any operation disturbance which might result in economic loss, social unrest and environmental degradation.

The operational consequences are avoided in the reactive strategy by the focal companies enforcing practices such as code of conducts and business principals. Companies further adopted technical enhancement for operation excellence and emission control.

The focal companies, through their purchasing power, managed to enforce the compliance process and conducted audits and safety walks as a mean of performance measurement. The dynamic of the industry and the leadership of the focal companies was forceful and occasionally resulted in contract terminations for non-compliance.

The leadership of focal firms also adopted policies and consequence management on staff and contractors; therefore, a compliance culture was prevalent. This compliance strategy was visible during field visits and the review of corporate documentation. Reviews of HSSE audits reports confirmed the participant's statements. Therefore, the pressure factors, internal as in leadership commitment and external as in regulatory and standards, were very instrumental in driving the compliance strategy and hence practice and the sustainable performance of the supply chain. Most proviolence barriers for performance for sustainable performance were lack of HSSE culture not only at the company level but both supply chain and society.

Hidden entrepreneurship and business are of prevalence in Oman and resulted in the creation of institutional void hindering sustainability performance. It is a new addition to the revised framework. However, NGOs were not perceived as an influential factor in this revised model. This was associated with institutional weakness in the NGOs agenda. It also seems NGOs lacked the financial and technical capacity to form and pressure to drive companies to adopt any sustainable performance strategies — thus, many focal companies collaborated with them as part of CSR.

Considering this is a compliance approach strategy, the lack of incentives especially towards supply chain members or SMEs was presented further hindrance of sustainability practices adoption within the industry in Oman.

Collaborative and Proactive Strategy

Considering the challenges raised with previous compliance strategy, which resulted in a weak collaboration with suppliers and society as a result of enforcement and compliance hence a change in market dynamics. The change in market dynamics and the rising of social pressure post the Arab spring, have deteriorated the focal companies control internally and externally. Internally leadership experienced staff raising demands for better social reforms and enhance work conditions. It resulted in focal companies' leadership reviewing HR policies and adopting a more accommodating culture. Staff unions were encouraged, and numerous staff town halls were conducted.

The enhancement of internal related activities resulted in the further challenge on the supply chain members and market dynamic. The change in market dynamic further created competition among focal companies resulting in spiral cost escalation affecting corporate

economic bottom-line. The supply chain members mostly of products and service providers challenged the competitiveness of the procure to pay processes which resulted in focal companies observing the cost.

The rise in these accommodating processes further enhanced their collaborative relations with supply chain members by extending services and conducting training and further adoptions of process enhancement reviews. Lean process and manufacturing are more prevalent practices with this strategy.

The climate change, the Arab spring, global industrial disasters like the Deep Horizon in the Gulf of Mexico and Texas refinery accidents in the USA have resulted in further external pressure on focal companies of the oil and gas industry globally which reflected locally too.

Lenders, standard organisations, institutional investees and shareholders pressured focal companies' leadership to enhance their attitude towards diverse agenda and accommodate the new market dynamic hence the evolvement of the collaborative approach. The collaborative approach benefited both the supply chain and society as adopted practices such as In-country value and CSR extended to building skills and local contractors capacity generating new local business. The term "made in Oman" drives sustainability performance across the supply chain.

Multinational focal firms joined by the major local joint venture, and major national oil companies are more adoptive to guard their reputational image and the business continuity. This accommodating and often proactive approach resulted in companies leading the national drive for a more inclusive approach towards sustainability, resulting in a win-win to all actors.

The downstream faced challenges with this evolvement and presented with an incremental cost of operation, which impacted their economic bottom line. They associated the accommodation of cost by the upstream to the nature of the relationship the state (government) has with upstream companies. The cost recovery in the upstream made the government bears most of the associated cost. However, it is not the case for downstream, which operates on a more global dynamic and competitive market. Therefore, downstream companies settled for partial accommodation of ICV and a lot of CSR and media campaigns to overcome the external and internal pressure. As a result, corporate staff were engaged more and participated in focal companies' societal engagements which boosted the perception of their employers as caring and empathetic. The review of annual stuff surveys is indicating a positive outcome on internal staff morale and retention as the industry rate of attrition is very low. The external social media response is also supporting that growth which resulted in companies in the sector, becoming the employers of choice.

Social media was perceived by all participants in this study as a major driver and enablers towards this strategy and performance of sustainability practice. The ease of public access to communication platforms like Twitter, WhatsApp and Facebook drives focal companies adopting a more proactive approach towards sustainability to overcome any adversely impact on reputation. However, it is exerting further concerns on its authenticity and creation of false perception.

The prevalence of focal companies and sector's foundations are a consequence of the proactive and accommodating approach of this strategy. It is intended for wider societal

engagements but might result in an increasing gap of involvement of corporate operation functions. This approach eventually will weaken the internal alignment of the focal companies towards a shared agenda.

Shared Value Strategy

The collaboration and integration within the supply chain are essential and enhances the flow of information system across the chain. Therefore, the interrelation of the pressures' factors, the internal capabilities of the focal company and the collaborative nature of the supply chain will drive the focal company to adopt different strategies for sustainability. The risk-based and "reactive" strategies or the collaborative accommodating are challenged to be inadequate to drive sustainability hence a shared value strategy centred on people and the planet are adopted to lead better sustainable activities in technical/commercial, organisational, social and environmental categories.

Currently focal firms experiencing the pressure factors highlighted in the conceptual framework and elaborated further here are adopting a mix of strategies in line with their risk appetite and proactiveness of their leadership but lacked total integration to a shared agenda and value. The larger focal firms mostly upstream ones presented anecdotal effort of innovation strives but mostly centred on their technical business need. They need to drive technical and commercial sustainable activities and employ more sustainability focus through open platforms innovation, and good governance whereas the organisational activities will build better capacity and stimulate learning among supply chain members. Also, social and environmental activities will heighten sustainability purchase and further partnering as shared economy is seen, in moderation but potential driver for sustainability performance in Oman. Hence, drives integration and collaboration through agreed metricises and enhances inter and intra- organisations sustainability performance.

A shared value strategy also, creates a partnership with shared goals, a new business model, better socio-technical landscape and systemic, sustainable practices. The decision makers in SSCM in oil and gas in Oman might need to consider integrating internal processes and external upstream and downstream supply chain partners and to create more sustainable supply chains.

Therefore, the revised conceptual framework presented here could summarise those drivers exerted by external factors could be in three folds; regulatory pressure, societal pressure and market pressure. The regulatory pressure relates to government legislation- regional like the EU, especially on multinational focal firms which EU based. International regulators, financial beneficiaries, professional/trade associations, and certifications bodies were indicated as a major contributor and influence on focal firms' strategies. Focal firms both local and international operating in the developing economy context of Oman experienced societal pressure exerted by societal group, consumer organisations, social well-being/community focus, media/press and value-based networks but on varying degrees subject to the size of the focal firm. On the other hand, market pressure includes shareholders'/investors,' competitive advantage, competitors, customers, suppliers' pressure institutional pressure and reputation/image. The study is in concurrence with IMF suggestions in achieving miracles of sustainable growth; a new paradigm is needed.
A paradigm built on a technology and innovation policy achieving a technological leap by early on towards sophisticated industries through a synchronised approach with all stakeholders (Cherif and Hasanov, 2019). The synchronised approach also needs a lead by

domestic firms and government support as any economy needs what the former deputy managing director of the IMF, Min Zhu, called “both wings to fly” (ipd).

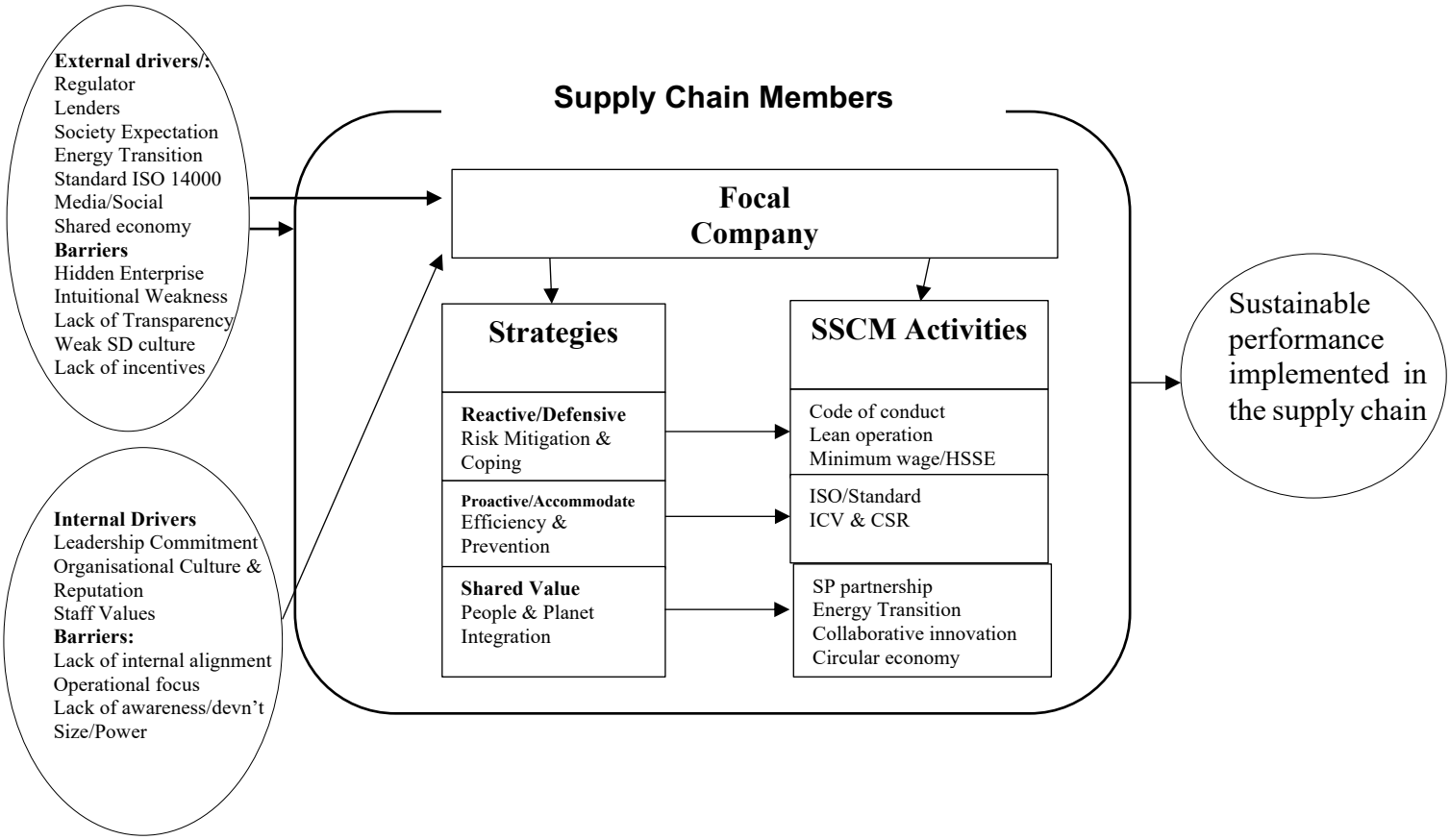

Figure 5.1 the revised conceptual framework

5.7 CHAPTER SUMMARY

The chapter analysed and discussed empirically the result of the case of oil and gas in Oman. The importance of factors internally and externally in driving sustainability performance developed by the conceptual framework were validated with participant in Oman. The conceptual framework was revised adjusted to reflect the new reality as perceived by the participants. Chapters 6 next present the conclusion of this project.

CHAPTER SIX: CONCLUSION

6.1 INTRODUCTION

Sustainability has played a pivotal role in corporate and supply chain performance and economic growth. Focal companies, through their purchasing power, have influences on both political and economic agendas of many countries, including Oman, as well as being a fundamental driver of economic development and supply chain sustainability performance. This concluding chapter summarises the research findings that have been depicted from the primary and secondary data. It explored to what extent Oman's oil and gas sector has been thriving in utilising sustainability in driving sustainable supply chain performance. It also explained the central importance of stakeholder's pressure in shaping sustainability strategies and practices toward supply chain sustainability and subsequently adding value to long-term development. It provides closing remarks on the ways multi-stakeholders influence focal companies in the Oil and Gas industry in Oman and how companies decide to react and influence the strategies and approaches to drive sustainability performance in the supply chain.

This concluding chapter is divided into five sections. The first section presents an introduction and the layout of the chapter structure. The second section offers the main findings and how they address the research questions. The third section concentrates on the limitations of the research and provides suggestions for further research. The fourth section gives an account of the research contribution made to theory and knowledge, as well as practice of the findings for policymakers, and domestic and foreign oil and gas practitioners and beyond. Finally, the fifth section provides a summary of the chapter.

6.2 KEY FINDINGS

Although research on supply chain management has made many worthy contributions, there is a scarcity of empirical evidence and theoretical thought on the features and practices of supply chains that operate mainly in developing and emerging economies. This study aims to develop an integrative framework that provides a holistic understanding of the key factors that impact sustainability success by focal companies in the oil and gas industry in Oman and help to fill this gap by investigating how supply chain sustainability can be performed and managed in these settings. The study offers several findings could summarise as followed:

- Drawing from supply chain management and sustainability literature, corporate published reports and websites, this study offers critical conclusions and extension to the supply chain literature. An in-depth case study of the oil and gas industry (upstream and downstream) supply chain in Oman was used to generate a conceptual framework about supply chains that operate in developing settings.

- The study confirms to varying degrees with previous studies that focal firms in the oil and gas sector in Oman were subjected by influence from primary and secondary stakeholders (Freeman, 1984). The primary stakeholders are those with a direct interest in the firms such as shareholders, regulators, employees and suppliers. The leadership of focal firms and the organisational culture were also instrumental in driving sustainable performance, mostly context specific like HSSE. Considering the industry associated risk, it is understandable and in concurrence with previous studies.

- The secondary stakeholders, those that are not engaged in activities or business transaction with focal firms but can affect or are affected by the focal firm's operations such as neighbours, social activists, social media and standards organisations were strongly felt by the industry. However, NGOs, academic institutions were perceived as less influential on the focal companies drive towards sustainability. It was attributed to a weak institution's presence in Oman.

- This study stretches the supply chain literature by arguing that supply chains face further barriers to sustainability in developing and emerging economies, which contribute to a higher degree of complexity and uncertainty due to the existence of highly turbulent business environments and institutional voids.

  Hidden entrepreneurship and lack of their absorption and legitimisation within the ecosystem is considered one of the barriers to sustainability practices in developing economies like Oman. Also, lack of code of conducts for sustainability and deficiency of infrastructure and pressing social issues like unemployment increase the degree of complexity supply chains are confronted with and diminish the overall level of trust within the business environment, which in turn increases business environmental turbulence and impairs institutions. These context factors hinder supply chain learning, innovation, and the momentum towards its sustainability performance target and the adoption of supply chains sustainability.

- The concept of " maintaining a social license to operate" or SLO is widely used by the participants to express legitimacy, but the underpinning understanding by the industry and its leadership was vague and limited. It could be because the concept is borrowed recently from other extraction industry like mining or developed economies like Europe or North America and require a maturity phase to shape better understanding. However, the evolution of the 'social licence to operate' concept indicates growing awareness by industries of the requirement to negotiate with communities and other stakeholders concerning the costs and benefits associated with industrial development in society for which they operate.

- The study suggests that creating a sustainable supply chain demands focal companies in the developing world to reflect on both the "what" and the "how" of rendering value and a rethinking to what value means to all stakeholders in both supply chain business models and practices.

- All focal companies in this study practised mix strategies of reactive, proactive and shared value to mitigate the degrees of exerted pressure of primary and secondary stakeholders. Compliance has driven focal firms to adopt risk-based mitigation strategies which resulted in using minimum standards and focused on environmental, operational efficiencies and minimum wage.

  Proactive focal firms were more accommodating and developed a strong relationship with secondary stakeholders. Their proactive stance towards sustainability performance emerged after the Arab spring in 2011, complaints from secondary stakeholders. The participants commonly cited the predominance of social media and negative reputational related pressure as a key reason for firms' gradual path towards sustainability.

Focal firms, mostly state-owned, joint ventures and multinational practised a further integrated approach towards sustainability. A shared value strategy was clearly in place to integrate economic, social and environmental issues, so that sustainability concepts become part of their activities both within and outside the firm. The concept of social licence to operate motivated focal firms to maintain internal and external alliance towards sustainability.

The study has explicitly recognised the claim of stakeholders for a more inclusive strategic approach to sustainability, especially in developing economies, is paramount to address some of the institution voids persist in these economies.

- Focal companies adopted various activities and often related to the strategy adopted. All companies adopted CSR initiatives to enhance branding and relationship building with secondary stakeholders. Some are mimetic others are philanthropic and hardly contributed to the company bottom line. Also increased regulatory and economic pressure resulted further in companies adopting green technologies, lean manufacturing and renewable but mostly on a limited scope and company size dependence.

  ICV and local content activities are growing adoption by all but heavily dominated by the upstream focal companies. It offered a very diverse component of the sustainability spectrum and could be argued a bi product of a shared value strategy.

- Focal companies adopted a lot of internal performance efficiencies matrices to show compliance and to drive operational excellence and change in behaviour mostly in HSSE and ICV. All companies used environmental ISO 14000 and social ISO 26000, but among the sample, only one company used an internationally recognised standard of reporting. Upstream participants associated lack of adoption to lack of regulatory regime and down-stream adopted a locally developed ethical and compliance code of conduct.

- The research highlights that, although globalisation is trending, resource-rich states (rentier states) and natural resource-based supply chains are usually more geographically bounded and susceptive to local social demands than other supply chains. This close association between natural resource-based supply chains and location exists because of efficiencies realised by staying and working close to the primary natural resource, and there are customarily industry regulations restricting industry actions. Although agglomeration economies may be accomplished by the reality of being relatively clustered (Silvestre and Dalcol, 2009), such supply chains may face growing pressures from local social demands. The upstream industry in Oman addressed some of those demands by establishing local community contractors (LCC) and delivering workshops in concession areas and further downstream more focused on limiting awards to domestic contractors and capacity building through CSR programmes.

- The study highlights that many countries have advanced economically, socially and politically as a result of employing oil wealth and embracing sustainability agenda. For example, Norway grew to be at the top of the United Nations Development

program list for using the benefits of North Sea petroleum in its economic and social development. Other similarly resource-rich states such as Oman have occasionally suffered the oil curse which resulted in austerity and economic, social and environmental impact and focal companies mostly in oil and gas sector left to pick some of the slack.

- The study also highlights the government of Oman has made a remarkable social development in education, health and citizen welfare and strives to diversify the economy further. The industry's recent engagement of stakeholders by the "vision 2040" authority was seen as a step forward and an acknowledgement of the role of societal and business stakeholders' broader contribution in shaping the future generation needs.

  The government recently adjusted its regulatory system to accommodate more foreign direct investment (FDI) and PPP to enhance it strives to be among the top ten global players in logistics. However, the supply chain community despite the recent establishment of an agency for SMEs called "Rayada", and the preferable treatment of local contractors still suffers many structural deficiencies and the inability to innovate and grow sustainably. The oil and gas industry are limited to observe all societal needs but its success in health, safety and environment (HSE), corporate social responsibility (CSR) and local content or locally called in-country value (ICV) should be replicated further in other industries to create capacity among supply chain members beyond oil.

- The limited degree of success in using sustainability as a tool to enhance sustainability among supply chain members in the oil and gas firms might be due to major overall structural problems that Oman as a country is facing. These can be classified into factors relating to the government and its regulatory system and those relating to the private sector and the industry itself. Also, these problems reveal that sustainability is context-specific and conventional sustainability theories developed in more developed economies have limited generalizability to Oman despite the growing awareness of sustainability drive among government and corporate institutions. Therefore, the government and business analysts should not rely on conventional theories originated in developed economies alone to understand and assess the sustainability performance to domestic firms in the local supply chain.

- Oman should also encourage big multinational companies (MNCs) already working in the country to enhance their businesses model and focus on helping domestic firms to innovate and win business, which contributes to sustainability and innovation and not limit their role to philanthropical CSR. Adopting a shared value strategy is high sought in an era of growth awareness of climate adversity and a complexity of an energy transition transformation.

- Finally, this research contributes to the literature by claiming that, due to the highly complex and uncertain business environments in the developing economies settings focal companies play an even more critical role in managing the escalating ambiguity, stimulating supply chain learning, and promoting innovation towards supply chains enhanced sustainability performance.

6.3. LIMITITATION AND RECOMMENDATION FOR FUTURE RESEARCH

Although the scope of this research is broad, certain boundaries have been set, and the conclusions of this research must be considered according to the research boundaries and a country and industry context. Such boundaries must also be considered when utilising its conclusions.

- This research and its methodology, as with any doctoral research work and methodology, have certain limitations worth highlighting. In the case of this research, these limitations comprised time, accessibility of different resources, availability of the relevant literature, besides businesses and national-cultural differences and contexts.

- The accessibility to the leadership and staff during peak operation time, especially at the beginning of operation year and closure of the previous financial year was a significant challenge. The leadership were busy mostly preparing for corporate committees and board meetings. Therefore, the identified contribution to knowledge as well as the produced conclusions of this research are affected by the quantity and quality of these limitations.

- Concerning the methodology used in this research, one of the main limitations was the use of a limited sample of executives and practitioners within the oil and gas industry in Oman. Sustainability is ideally contextualised within a framework that links the elements that are important to gaining a better understanding of sustainability practices within the selected group. Furthermore, additional research is recommended to develop the model further to include factors fitting in other contexts.

- The key recommendations highlight main areas where action is needed to enrich the quality of available research, and to address existing gaps in research. The recommendations are addressed to policymakers, researchers, managers and practitioners and are specifically linked to (i) engaging with ongoing research; (ii) developing more longitudinal research studies; (iii) exploring quantitative research study options; and (iv) initiating more focused research that examines the factors related to sustainability drivers, strategies and performance within the chosen context.

- Sustainability in developing economies within the existing literature is a very recent phenomenon despite its presence for decades, mostly in developed economies, and studies remain rare. The rise of the so-called “maintaining the license to operate” and informed citizens and expectation of focal companies are lending its way to developing economies and the oil and gas sector. The discussion of “maintaining the license to operate” and the role of the focal company within the oil and gas context represents a new avenue of research.

- Oil and gas leadership and managers need to recognise the risk that lack of adoption of sustainability policies and programs will impact not only the reputational image but also the businesses bottom line. Therefore, the oil and gas executives need to consider, approaches to address the causes and effects of sustainability performance beyond their boundaries and more towards their supply chain and capacity building within society.

- This research has strived to contribute to some of the answers or generalizable conclusions on the subject under study. Admittedly, it may have proposed far more challenges than it has answered. It has, however, initiated up avenues for debate about sustainability performance in developing economy context, in the hope of generating discussion in the academic community, while inspiring other researchers to conduct further studies on factors influencing sustainable development performance in the context of developing economies and oil and gas industry role in addressing sustainable performance. Nonetheless, it has shed light on several domains and directions, provided a wide-range and firm base for further research and named promising areas of research, which is anticipated to last for a long time and may lead to many further thoughtful contributions to both theory and practice.

- Future research is encouraged to examine further directions of the factors found by this research to influence the sustainable performance of organisations in developing economies. Such future research might suggest different questions, explore other areas, including published literature in other languages, examine different periods, include non-academic studies, use different methodologies, focus on specific parts or features of the organisation mandate/or focus on a specific business context and/or on a particular culture.

- Some other plausible future directions for research might include examining relationships between a specific factor in a specific culture and focal companies' performance. The influence of a particular factor or driver in a specific culture/business on focal firm or other supply chain members or any other directions researchers may wish to follow from different angles using different methodologies.

- Further research might also quantitively and empirically examine the factors, strategies, and performance indicators concluded in this research. Such an examination might be conducted using a well-designed questionnaire by which opinions of a sample of different senior leadership and practitioners would be explored on the influence of each identified factor on sustainable development within their organisations. In the current digital era, the advantage of using electronic instruments might be faster to reach the intended sample, and the cost of different samples could also be considered in different countries in one or more research fields to explore the differences in the influence of each factor in different contexts.

- Further work needs to consider how specific sustainability activities of a company like CSR in controversial industry sectors such as oil and gas affect the company's risk in micro-level. For instance, it might be interesting to examine how specific concern or strength item, such as workforce reductions or cash profit-sharing in controversial industries influence firm risk, employee culture, moral, and employee work productivity. Also, it might be interesting to examine whether a company's engagement in substantial emission or pollution prevention influences firm risk.

- Presumably, a more significant challenging issue for future research is to examine whether a company's CSR decision-making influences environmental sustainability and/or environmental justice issues. CSR engagement of controversial industries across nations should also be useful as well. Research on why and how firms' CSR engagement in controversial industry sectors across nations may provide further

understanding of the complex relations between CSR and firm risk even in firms that produce products that are harmful to the environment, human being, and society.

- Also, theoretical as well as empirical studies examining the complex relationships among corporate image, corporate reputation, firm risk, and firm value should be fruitful.

- Future research is required to broaden the conceptual scope of the "license to operate" as a "construct and apply it" in other domains of research, as well as further clarify antecedents and potential outcomes.

- The author accepts that the study is limited and specific to the oil and gas industry in Oman. Further research should, therefore, broaden the scope of context in which sustainability and license to operate occur, for example, expanding the geographical scope of the work to other countries and other extraction industries. The author also accepts that the study reflects a relatively homogeneous sample and is thus not representative of the general population of the supply chain.

6.4 RESAERCH CONTRIBUTIONS

The finding of this thesis provides several theoretical and managerial contributions towards policymakers and corporate leaders for theory and knowledge and the development of the conceptual framework business model for the realization of sustainability in driving supply chain performance.

6.4.1 Theoretical Contribution

This research may contribute in theory to the debate around sustainability and supply chain management at several levels:

- This research provides a conceptual framework and contributes to theorising, which addresses many calls by scholars in the field of supply chain management and sustainability. The framework expands the body of knowledge in the existing literature in sustainability and supply chain management in confirming the applicability of these usually developed economies concepts to developing economy like Oman. It also provided the assessment of drivers and barriers which might influence focal companies' performance in driving sustainability among supply chain members in Oman. It can also be concluded that focal companies experiencing various stakeholders' pressure will adopt various strategies and initiatives to elevate that pressure and therefore enhancing sustainability performance.

- The presented conceptual framework emphasises the factors that determine the sustainability adaption among supply chain members following the experience of many institutional pressures. This study extends previous literature by exploring the sustainability drivers and resulted in practices in developing economies like Oman or similar developing countries to provide a robust theory in such settings.

- The study blends and extends various institutional viewpoints in the introduced framework, then validates it in a different level of analysis and context. Institutional theoretical perspectives are used widely on the country and organisational levels; however, there is room to use these perspectives to understand and interpret empirical findings on the organisation and the sub-organisational levels. Therefore, the primary contribution of this study to institutional theory is an empirical investigation of strategic responses on the organisational level towards sustainability pressures. Adopting different strategies relating to the type of pressure (internal and external) is empirically verifies the proposed relationships. It supports their applicability in the context of sustainability in the O&G industry. Adopting sustainability practices at the organisation and sub-organisation level is subject to pressure at the micro-level from the related new institutional pressure and macro-level institutional pressures from the related corporate governance rules and regulations.
- Furthermore, the conceptual framework supported by this research may be a step toward developing a theory of addressing external and internal pressures on sustainability performance. Therefore, the study contributed to the literature by attempting to fill the gaps identified in the critical literature review.

- It was empirically proven that focal companies practising a transformational leadership on their supply chain members are likely to achieve sustainable supply chain performance. There was also, theoretical and qualitative evidence that leaders in the oil and gas companies perceived themselves as strategising and practising sustainability which has significant positive effects on sustainable performance.

- The body of theoretical research in the area of using sustainability to enhance private sector development far concentrates on industrial countries, including Asian, Latin American, and other developing countries. However, very little consideration is given to rentier states like Oman. Moreover, there is surprisingly little empirical research on sustainability performance with the supply chain members in developing economies.

- The research also contributes to the literature of international business studies, especially in the area of the role of MNCs as a contributor to sustainable development. Usually, the international business scholars like Rugman and Verbeke, (1998) consider the organisational unit, the parent company, best suited to develop sustainable development capabilities and the subsidiary as an implementer. This study confirms that MNCs are more inclined to react to sustainable development pressures that are technical – renewable energy, climate change – and disregard less-technical pressures – biodiversity, social investment – because the interests of the former are more visible for the leadership. However, the institutionalisation of sustainable development pressures, primarily social, in the oil and gas industry, is more likely to take place at the national than the international level. Furthermore, it was observed that when pollution-intensive industries like the oil and gas have moved to resource-rich developing countries, it is a function of industry expansion rather than displacement of its pollution. Therefore, it is very critical for MNCs considering business ventures in developing economies to consider the difference in the institutional pulls amongst host countries and create more capacities for their subsidiaries to adapt their practices considering host countries' stakeholder claims.

  In this vein, this study served to fill a gap in the global literature about sustainability performance in a particular category of developing countries: oil-producing countries

which are often affected by the Dutch disease and a unique economic rentier structure. This thesis thus contributes to theory by studying sustainability performance in Omani oil and gas firms. To the best of the researcher's knowledge, this is the first study on comprehensive sustainability in general and the oil and sector in specific context, and the findings may be generalizable to countries with similar economic structures, such as the Gulf region economies and other oil producers. Al-Jebour *et al.*,(2017) argue that sustainability studies, especially in developing countries like Oman, is regulated toward consolidating the variations in regional social, cultural, governmental and economic aspects. Moreover, the Sultanate of Oman holds its unique local context, traditions and culture and geographical conditions. The governmental and political requirements, including the Omanization program, have also been highly reflected in the Oman National Comprehensive Human Development 2040. The National Development Plan 2040 of Oman endeavours to take the country into a more sustainable lifestyle. Therefore, this study contributes to the scarcity of sustainability research in a country like Oman and addresses calls to further studies in sustainability in Oman (Alhabsi, Malaysia and Mustapha, 2011; Al Shueile, 2015; Saleh and Alalouch, 2015; Al-Jebour *et al.*, 2017; Maksood and Achuthan, 2017).

- This research contributes to a better understanding of the sustainability paradigm and the role of local context in shaping the agenda. It examines vital players in the national oil and industry sector called focal companies, which purchasing power will help in driving the sustainability agenda to reach a win-win situation for both the industry and national economy. Surprisingly, there has been limited research on sustainability interplays with the focal companies and the private sector of the host country in developing countries. Therefore, to the best of the researcher's knowledge, this is the first study on sustainability strategies and practices in Oman. Hence, this research attempts to produce original contributions to knowledge in the field and act as an opportunity toward another research. It might also help countries striving for better achievement in meeting the global agenda 2030 and SDGs.

- Notwithstanding the presence of over 300 million people incorporating 23 nations with geography ranging from the Atlantic Ocean to the Indian ocean, the attempts to study the Arab approach to business and management and fieldwork visit are limited or frequently condescendingly portrayed in terms of exposure to the exotic, the mythical and irrationality (Weir, 2012; Berger *et al.*, 2015; Gebrayel, 2017). The Arab world stands large-scale threats to its sustainable development and, most prominent of all, the viability and survival of the environmental systems for its human establishments. The dynamics of ecological degradation, population changes, and resources insufficiency, and developments of policies and practices, all occurring in the complex and highly unstable geopolitical and economic environment, are fostering the miserable prospect (Fritzsche and Ruettinger, 2013; Bryde, Mouzughi and Al Rasheed, 2015). Furthermore, the study in the context of the Middle East and North Africa (MENA) and its oil and gas industry despite its geopolitical position and contribution to the world economy is relatively scarce and calls for more research (Bibi and Nabil, 2010; Omair, 2011; Bryde, Mouzughi and Al Rasheed, 2015; Griffiths, 2017). Therefore, this study contributes to the knowledge of sustainability drivers, strategies and performance in Arab countries and opens the path for further research.

6.4.2 Practical Contribution

This research, in its endeavour to make a practical contribution to the debate around sustainability and supply chain management, suggests the following:

- Having sustainability driving economic growth, social justice, and ecological protection in economies striving to diversify economic activities and protect environmental heritage and creating social justice is growing attention globally and locally. Therefore, policymakers should globally and locally endeavour to apply sustainability and subsequent goals to diversify the economy and enhance local competitiveness.

- Benefits from the unique technology advancement and features offered by focal firms, mostly international and the major national oil and gas companies, in enhancing sustainability performance at the company level and supply chain members should be further encouraged. The oil and gas industry leads in driving HSSE, CSR, lean practices in operation and processes and local content (ICV) agenda in Oman. They have introduced a cultural and behavioural changes toward HSSE and created many jobs at a company level, contractor communities and localities. However, such growth is limited to the current industry business model, current stakeholders, and emerging sustainability shift towards the energy transition agenda. So, having a diverse range of national incentives tailored towards investing in sustainability products and services will enhance the current effort by the industry and extend the reach beyond the oil and gas industry.

- Oman is currently also striving to build its SMEs and logistic industry, and the success story of the oil and gas industry in establishing local contractors' companies (LCC) and super LCC could offer impetus to grow the sector in providing products and services geared towards environmental sustainability, social inclusion and economic growth.

- The government of Oman recently enhanced its legislative system to attract more FDI, and Oman's 2040 vision is vibrant with ideas to enhance economic diversification further. It articulates that if Oman is to shift to be a global business hub for companies from various countries, the government must eliminate barriers for overseas investors to create a competitive business environment. This requires concentrating on developing international standards of transparency and enhance the doing business index in Oman. It also requires overcoming the level of economic uncertainty and focusing on creating skills needed for future green jobs and the 4th industrial revolution instead of only addressing the current need. This is critical, as the government's budget resources are derived mostly from oil exports which currently attracts global challenges because of climate change and economic diversification agenda, which should encompass more future strategic need like renewable energy, sustainable tourism and consumptions.

- The governments in developing economies, including Oman, should collaboratively work with the private sector to enhance the regulatory environment, consider policies to foster sustainability practices and enhance performance. Therefore, further incorporation of incentives and increasing subsidies for sustainability practices and enable formal sustainability focus in entrepreneurship development is worth

consideration. Such policies implementation would reinforce a favourable societal mindset by transforming the mentality towards sustainability behaviour and practices. They would also encourage both international and local entrepreneurs to pursue sustainable business.

- Any policy change towards a more sustainability-oriented performance should also be accompanied by awareness campaigns to inform residents about sustainability products, buildings and future job opportunities in this promising field of economic growth, social justice and environmentally care. Intensive media campaigns should be launched with all the necessary awareness of economic, social and environmental opportunity of adopting sustainable conception and the likely adverse consequences on the human and ecological system if people fail to transform to a sustainable conception behaviour.

- One of the barriers identified in this study to sustainability practices in developing economies like Oman are "hidden entrepreneurs", and it would be advisable for the policymakers to absorb and legitimise them within the ecosystem by reviewing legislation, regulations and policies to promote formal collaborations between focal firms and such entrepreneurs. Intensive media campaigns should be launched with all the necessary legal and political guarantees for the enhancement of sustainable entrepreneurship.

- This research shows the importance of the active role of government concerning policies that would improve sustainability. The central importance of a high degree of coordination amongst all stakeholders in designing policies that can enhance supply chain sustainability performance is critical. The coordination and collaboration among stakeholders will produce an agreement on the implementation practice, and monitoring process. This is because of the nature of sustainability strategies and practices and the complexity of the business activities of focal companies and the need to remain competitive not only locally but also in a highly dynamic global economy.

  In this regard, this research provides a range of policies that would encourage sustainability practices using a combination of initiatives and programmes, such as local content requirements, ownership structure, business linkages and sustainability performance measurement requirements. The success of these and many other initiatives and features of the policy depend on three essential elements.

  Firstly, the policy must be implemented on a large scale beyond the oil and gas industry, which creating an aspired effect on the national sustainability agenda and economic growth.

  Secondly, the policy should be directed by a dedicated organisation with higher authority like the planning council, which has an extensive understanding of the basis for implementing such initiatives, and it is powerful enough to create a legal framework and clear policies which facilitate these initiatives.

  Thirdly, attention must be given to the implementation stage and the development of performance indicators.

- In term of the business environment, policymakers should encourage more reporting on sustainability and more focus on social and ecological indicators at the company level and across the supply chain. International standards like ISO 14000, 26000, GRI Materiality Disclosure and the United Nation Global Compact (UNGC) should be encouraged and incentivised for smaller sector and mandatory on specific industries like oil and gas by the government and their focal companies.

  This is critical, especially in this phase of economic transition, if Oman wants to secure an excellent rating from international rating agencies to attract more sustainability targeted FDI and implement its diversification agenda to enhance sustainability practices. A higher degree of coordination and cooperation between government and private sectors is paramount to achieve such aspiration.

- The supply chain in the oil and gas sector or Oman at large, in general, has a deficiency of absorptive capacity, particularly in terms of the necessary institutions to drive private-sector-led sustainability growth. Technical and managerial skills are also needed to drive these transformations. The quality of current institutions should be improved, and new institutions formed to create linkages and scale up success stories, e.g., SMEs support and education and training.

- This research provides insights for both public and private education institutions to support the government in it strive towards sustainability through shaping the normative institutions in their societies. Schools and higher education should provide quality sustainability education for students from an early age of schooling until graduation. This is imperative for promoting a sustainability mind set; the lack of which was found to explain passive engagement in sustainability behaviour and practices among organisations, leaders and practitioners.

  The United Nations Education, Science, Culture Organisation (UNESCO) advocates "Education for Sustainable Development (ESD) allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future and requires far-reaching changes in the way education is often practised today." (UNESCO, 2015). It is further affirmed by the Council of the European Union 2010 as "ESD is essential for the achievement of a sustainable society and is therefore desirable at all levels of formal education and training, as well as in non-formal and informal learning."(Plymouth University, 2014).

  Sustainability education needs to be considered as a lifelong learning process and needs a collaborative process among all stakeholders. Any strive from a policymaker, focal companies, education institutions, trainers and practitioners to enhance the learning process should focus on engaging with ongoing research and developing more qualitative, quantitative and longitudinal research study opportunities. Considering sustainability as skills for life, and an effort to enhance research should be more focused on studying the process of career development interventions within and outside the workplace and its effects on behavioural change and impact. Focal companies, through their contracting strategies and CSR programs could further support the strive to enhance lifelong learning.

- Finally, prosperous organisations and communities need a healthy planet. Nature sustains the global economy, enhances the lives of billions, and presents the

conditions in which humanity can thrive and flourish. However, human behaviour prevails behind numerous threats to our natural environment. The earth can adjust itself as it did for millions of years, but it is humanity at risk of extinction from unsustainable behaviour.

Therefore, sustainability needs a massive behavioural adjustment and multi approaches to embed it into the heart and mind of society. The government and policymaker could further enhance work on behaviour change towards sustainability adaption using behavioural insight tools. The UK government, for example, is adopting a methodology and a toolkit called EAST framework (make it easy, attractive, social and timely) to guide its policy formulation and public behavioural adjustment. The framework is designed to maximise the impact of activities that support the business and attracting global attention. It argues that behavioural insights complement traditional policy tools, optimise their design and maximise the likelihood of creating impact.

6.5 CHAPTER SUMMARY

This chapter concluded the study and presented the research key finding, its contribution and the limitation encountered through the research ourney. It further made a recommendation for further research.

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APPENDICES

Appendix I: Informed Consent Form

Participant Information Sheet
Study Title: "The role of focal companies in stimulating sustainable supply chain innovation

strategies: the case of Oil and Gas sector in Oman". Researcher: Amor Al-Mataani.
Dear Sir/Madam

You are being invited to take part in a research study. Before deciding to take part of this research, it is important for you to understand why the research is being done and what it will involve. Please take time to read this information carefully before deciding to take part in this research. If you are happy to participate, you will be asked to sign a consent form.

What is the purpose of the study?

I am a student at the University of Brunel London (UK) researching to qualify for a PhD in Management. I work in the Oman Liquified Natural Gas (OLNG) company (Oman) as a Deputy CEO. My employer fully sponsors my studies.

In this study, I aim to explore the influence of sustainability's external and internal drivers/ barriers on focal companies in the upstream oil and gas sector in Oman. Also seeking to understand the role of focal companies in applying strategies, innovation practices and activities to enhance sustainability performance in the supply chain of the industry. To achieve this aim, I need your valuable time and experience to interview with you to answer some questions. The questions overall will highlight your knowledge and experience in the implementation of sustainability in the sector and innovation development in Oman and the main challenges and opportunities that are facing the development of sustainability and innovation in Oman. I will need your views regarding the possible action that can be taken to foster the development of sustainable innovation.

Why you have been chosen?

You have been chosen because you are a valuable information source for my study and part of selected leadership who have influence on the sustainability strategies in the Oil and Gas sector. Since I am looking for qualitative information, I need a rich-explanation from experienced people in the field. Your job title and your relevant experience are the reasons behind choosing you in my sample.

Do you have to take part in this research?

As participation is entirely voluntary, it is up to you to decide whether or not to take part. If you decide to take part, we will arrange a time and a suitable place to conduct an interview that last between 1 to 2 hours. I will need you to consent to tape-record the interview so I can transcribe it later for the purpose of analysing the data. Although the plan is to conduct the

interview once, I might follow up with you, if further information is required. If you decide to take part you are still free to withdraw at any time and without a giving reason.

What are the possible benefits of taking part?

Your participation in this study is critically important. You will contribute in adding new knowledge to the sustainability field, especially to the literature of the Omani context. The results of this study will contribute in understanding the sustainability practices and its environment in Oman. Your insights will be considered in framing an action plan to promote sustainability and innovation in the country.

What are the possible disadvantage and risk of taking part?

There is no risk except sacrificing 1 to 2 hours of your valuable time to conduct the interview.

Will my taking part in the study be kept confidential?

As part of complying with the Data Protection Act and the Data Protection Policy of the University, all your data will be kept confidential. There will be no-disclosure of research information except for authorised person by the University. Data will be coded and kept on the Brunel University server and password protected. The data also will be destroyed when no longer required.

What if something goes wrong?

The person to be contacted if the participant wishes to complain is the Chair of the College of Business, arts and Social Science Research Ethics Committee,
Email cbass-ethics@brunel.ac.uk

Who is organising and funding the research?

The research is funded by myself in conjunction with Brunel University London.

What are the indemnity arrangements?

Brunel University London provides appropriate insurance cover for research which has ethical approval.

Who has reviewed the study?

The study was reviewed by the Brunel University Ethic Committee.

Passage of research integrity

Brunel University is committed to compliance with the universities UK Research Integrity Concordat. You are entitled to expect the highest level of integrity from our researches during

the course of this research. Further information can be found at the Brunel University London research integrity webpage

Where can I get more information?

If you have any questions after reading this information sheet, you may contact the researcher anytime:
Amor Al Mataani
Email: amor.al-mataani@brunel.ac.uk Mobile (Oman) : 00968 - 92111106

Mobile (UK): 0044 – 7478639473

Or write to:
Brunel University Ethic Committee Brunel Business School
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UB8 3 PH
Tel: +44(0)1895274000
Fax: +44(0)1895232806

Thank you for accepting to take part of the study

Dear Sir/ Madam

You are kindly requested to complete this sheet as a consent of your acceptance to participate

Please tick the appropriate box

	YES	NO
Have you read the Research Participant Information Sheet?	☐	☐
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Have you received satisfactory answers to all your questions?	☐	☐
Who have you spoken to?		
Do you understand that you will not be referred to by name in any report concerning the study?	☐	☐
Do you understand that you are free to withdraw from the study:		
• **at any time?**	☐	☐
• **without having to give a reason for withdrawing?**	☐	☐
• **(where relevant, adapt if necessary) without affecting your future care?**	☐	☐
(Where relevant) I agree to my interview being recorded.	☐	☐
(Where relevant) I agree to the use of non-attributable direct quotes when the study is written up or published.	☐	☐
Do you agree to take part in this study?	☐	☐

Signature of Research Participant:

Date:

Name in capitals:

<u>Witness statement</u>

I am satisfied that the above-named has given informed consent.

Witnessed by:

Date:

Name in capitals:

Appendix II: Interview Guide

INTERVIEW GUIDE			
Interviewee Name		**E-mail/ Phone**	
Organisation/ Department		**Job title**	
Date/Time		**Location**	

Interview Opening:

- Thanking the interviewee for accepting to participate in the PhD research
- Explaining the purpose and the value of the research is intending to achieve
- Explaining the ethical concerns as stipulated by Brunel University London
- Seeking permission for recording the interview and taking observation notes
- Placing the recorder close to the interviewee to ensure proper recording

Sample of questions will be addressed to research participants

The questions listed below are intended to understand and validate the focal firm strategy and activities in delivering sustainability at company level and cross border including suppliers and communities. The sample listed below is a very diverse and covers a vast subject under research. However, the targeted number of interviewees will be asked only selected one in line with their line of authority and expertise.

Section 1. Sustainability drivers/ Barriers

Q. There are many drivers for sustainability in the oil and gas sector, could you tell me, what are they? And how important are they to your company and the oil and gas industry?

The participant could be helped by example to set the scene, and asked to elaborate how?

Q. Organisations type are known to influence driving progress on sustainability. Could you share with me if any, that you consider are currently having the greatest positive impact on advancing sustainability in the oil and gas industry in Oman, and why? How?

The participant could be helped by example to set the scene, and asked to elaborate how?

Q. There are also barriers to sustainability implementation, could you tell what are they? And how is the company mitigating them?

The participant could be helped by example to set the scene, and asked to elaborate how?

Section 2. Environmental, Health and Safety (HSE)

Q. How much, if at all, does your company assess and manage HSE and climate change through the value chain?

The participant could be helped by example to set the scene, and asked to elaborate how?

Q. What activities if any, have your company completed, or are currently undertaking, to build resilience to climate change risks and HSE impacts?

The participant could be helped by example to set the scene, and asked to elaborate how?

Section 3. Social and Community

Q. How much, if at all, does your company assess and manage human rights and labour related matters at company and supply chain level? What activities are you undertaking to enhance that?

The participant could be helped by example to set the scene, and asked to elaborate how?

Q. How much, if at all, does your company focus on diversity, inclusiveness and women's empowerment in the company, cross supply chain and community at large?

The participant could be helped by example to set the scene, and asked to elaborate how?

Section 4. Growth and Prosperity

Q. How much, if at all, does your company focus on inclusive growth and social inclusion within company, supply chain and community?

The participant could be helped by example to set the scene, and asked to elaborate how?

Section 5. Performance Measurement.

Q**.** Are you addressing sustainability issues at company level/supply chain and how?

Q. Is your company already using sustainability measurement tools or intending to use the UN Sustainable Development Goals (SDGs) to set corporate performance targets at company/supply chain level? Toward which, if any, of the UN SDGs is your company pledging commitments?

A list of 17 SDG will be shared to form a discussion

Q. To date, how effective, if at all, has your company been in communicating your sustainability goals and objectives to your supplier? And why?

Q. How effective, if at all, do you believe your supply chain management efforts have been in addressing the most critical sustainability issues in oil and gas and your supply chain?

Section 6. Corporate Social Responsibility (CSR) and In-Country Value (ICV) Practices

Q. How do you define CSR and Local Content/In-Country Value (ICV) in the company?

Q. What are the drivers for developing such policies? And what are the barriers or hinderance from achieving its objectives in the Oil and Gas industry and Oman?

Q. What is the company role in addressing such barriers if any?

Q. Do you address capacity building among suppliers and communities? How?

Q. How do you evaluate the current regulatory system in Oman towards local content and capacity building?

Q. What is the industry/company role in adopting measures to shelter domestic companies (tire 1 and 2) from competition to help them focus on developing the necessary competence and economies of scale in Oman and among local suppliers?

Q. What are the policies in place and the company role in fostering technology and spill-over effects towards sustainability down the supply chain?

Q. Considering the complexity and varieties of approaches available, does the company the industry, the country apply targeted approaches to enhance a particular area to build sustainable capacity? E.g., per centage of total revenue for employment, capacity building, innovation, employment etc?

Appendix III: Extract of Template Analysis

Theme	Sbu-theme	Factor	Company	Level	Quote
Drivers	5.2.1 External Drivers	5.2.1.1 Government Regulation	C1	M1	*The 'company' is encountering rising complexity, capital intensity, emerging markets, funding limitations and calls to generate more local employment opportunities.....new business environment characterised by weaker oil price, digital disruption and mounting climate change pressure.".* (C1M1)
			C2	M2	*" The increased pressure from regulators, especially in accommodating local providers and more local employment with the higher cost is creating more stress on the bottom line". (C2M2)*
		5.2.1.2 Society Expectation	C3	M2	*"Local community is having a very high expectation and is growing multi-folds in recent times. It started with the provision of essential support like portable water for their herds and camels to seeking direct employment in the company despite limited skills and credentials.". (*C3M2)
			C1	M1	*"I think there is a local regional and global expectation particularly in our industry at the moment which is you know under fire for climate change, and everything else has become increasingly unpopular as the tobacco companies are where we need to secure our social licence and social trust. And you only do that through truly understanding your stakeholders."* (C1M1)
		5.2.1.3 Shareholders and Lenders	C1	M2	*"As an example, the board had mandated that we allocate 1% of our capital expenditure on social investment and sustainability programs. I think that it is very honourable of them and notably to mandate it. So now when we have a particular project in a location 1% of the CAPEX that's used to uplift the community in that area through clinics or hospitals or veterinary services camel tracks installation of cat eyes on the roads to ensure safety on the road to Salalah. (C1M2)*

		5.2.1.4 Energy Transition	C2	M2	*“The global drive for energy mix is creating and opportunities for the industry and challenge. This is providing focus on technical advances for more renewable. With climate debate growing momentum in recent time, cleaner energy sources will be dominating the industry discussion” C2M2*
		5.2.1.5 Standards	C1	M3	*"Wherever possible, we endeavour to measure our practices against a national and international benchmark, such as the ISO 14001 certification".*
		5.3.1.6 social media	C4	M4	*" Social media is taking everyone off guard not only in its intensity but also the speed for reporting. We used to dictate the message to the public through proper channel, nowadays we monitor social media for the adversity of our process behaviour."* C4M4
			C4	M3	*"Yes. So, the feedback you get from social media, it really enforces the feedback you get from the government, which is in itself responding to the social media. .... the sort of government via social media is not necessarily how Oman wants to do things. However, the reality is more, and more of that is what is happening, and not just in Oman, but everywhere else. So, the idea that you can control the story the way Alastair Campbell used to in Tony Blair`s government in the first part of Tony Blair`s ministry, is. I don`t think it is possible anymore. How you deal with adverse social media - I don`t know".* C4M3
					"*Social media is key. I mean communication engagement today is all about social media. The American elections was social media-driven, and everything else is. If I have an incident in the field, my stakeholders know before I know. Someone takes a photo, and it is out there, and it is then speculation starts, and social media is one of those things. Yeah, it is no good deed goes unpunished because as soon as you get involved, you have got to tackle all sorts of unprecedented and unexpected challenges then.". C1M1*

		5.2.1.7 Transparency	C5	M4	*"Our plant sits in the middle of the city, and our operations are obvious by all. Plant set back, and tripping is normal. Also, we conduct annual maintenance which results in a big flare. However, we are very transparent with our community. The authority in town is kept informed, and we conduct frequent meetings with external stakeholders to keep them informed. I believe this way; we managed to sustain operation and reputation. Our transparency made us more accountable and committed towards sustainability" C5M4*
		5.2.1.7 Sharing Economy	C6	M4	*"New apps like Linked have opened a door of opportunity for talent acquisition. Nowadays, I can screen a candidate and shortlist for a job in no time. A process which took us months and often missed opportunities" C6M4*
			C6	M4	*"Sharing economy is growing globally. It provides ease and efficiency, but our corporate finance regime is rigid and outdated. It is so easy to quote code of conduct as a reason for not allowing the integration of such collaborative platforms."C6M4*
		5.2.1.8 Maintaining the Licence to Operate	C5	M2	"*SLO is a trust we developed over the years and need continuous monitoring. We are renewing that licence every day, and I believe when you know that, it matures to be a lot more obvious to practice it".* (C5M2)
			C6	M3	*" SLO needs continuous monitoring and adjustment to maintain it. It is difficult to manage as demand keeps shifting."C6M3*
		5.2.1.9 Climate Change and Natural Hazards	C5	M4	*" The recent weather calamities have brought to the business a new risk and concerns to sustain the industry operation. Only in last few years Oman was struck with two major cyclones which halted the industry adversely. C5M4*

			C6	M1	*“Building a local reliable and sustainable supply chain is not only good economically but also socially and environmentally beneficial. It is a win-win as we reduce operational disturbance, reduce our carbon footprint from reduced transit shipment and ease the social demands for jobs"* C6M1
		5.2.1.9 Foreign Direct Investment and Economy Diversification	C1	M2	*“ We have three hundred and four start-ups that we are incubating in various areas. So also, we have recently signed a Memorandum of Understanding with a company called phase ventures with three Omanis. Three young boys, one of which used to be in the company. So, they formed a company called phased ventures that is having an understanding with Spark labs and what they do is they look at innovators in the market who are primarily young Omani but also might be Americans, and they bring angel investors to make sure that they accelerate the innovation process. At the moment we are trialling; I think seven or eight innovations within the company and driving them fast not 6 to 7 months pilots. We are taking them for four weeks, and then we decide to bring them on board. C1M2*
		5.2.1.10 Hidden Entrepreneurship	C7	M1	*“Informal enterprises are well founded in Oman and impacting the economic and social growth due to the major transfer of cash abroad, but more seriously depriving Omani from jobs and social security and unfair competition to SMEs operated by Omanis”C7M1*
			C6	M3	*“Community pressure us to accommodate local but also informal contractors who share no desire to put good governance or comply with the business code of conduct or HSSE policies. This often results in local community resentment and spread of negativity among neighbouring communities which often result in bad naming for the company”C6M3*
	Internal	5.2.2.1 Leadership Commitment	C3	M3	*"The company management is a significant driver for the company vision towards sustainability, and we expect our contractors to embrace that and conduct their business accordingly"* C3M3

			C4	M4	*"The leadership commitment to HSE is strong and part of our duty of care. At (company name) we focus on leading indicators and proactive initiatives. Actions have been implemented in areas such as HSE culture, contractors' safety, road safety, occupational health, and risk management. HSE culture workshops for (Company name) and contractors, safety clubs' meetings, and leadership programmes have contributed to HSE performance improvements."C4M4*
		5.2.2.2 Organisational Culture	C1	M3	*"The company cares for the contractors' community. We completed a project called "Prism", an industry-first three years initiative to improve contractor welfare standards for those working in the interior by embedding a duty of care mindset across the broader (company name) contractor community. The project is in full swing, and so far, a total of 90,000 interviewees involving personnel from 20 interior-based contractors and subcontractors were conducted, with more than 600 coaching sessions delivered to drive worker-welfare improvements."C1M3*
			C3	M4	*" At (the company name), we aim to foster a genuine culture of care for our workforce in Oman. Whether it is our employees or those indirectly working for us through contractors, this is something that demands constant attention. To that end, our commitment to safety follows a rigorous strategy; one that adheres to not only internationally recognised industry standards but also one that tested, refined and proven over many decades of (company name) Middle Eastern and wider global operations.". C3M4*