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Analyzing The Challenges Facing The ESG Practices By Oil and Gas Companies in the UAE

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Analyzing The Challenges Facing The ESG Practices By Oil and Gas Companies In the UAE

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ABSTRUCT

This study explores the key challenges that oil and gas companies in the United Arab Emirates (UAE) face in implementing effective Environmental, Social, and Governance (ESG) practices. As global pressure mounts for more sustainable and responsible business operations, the oil and gas sector—traditionally seen as a major contributor to environmental degradation—has come under intense scrutiny. The UAE, as a leading energy producer with a growing commitment to sustainability, represents a unique case where national vision and industry realities intersect.

Environmental, Social, and Governance (ESG) practices are increasingly crucial within the oil and gas industry, driven by stakeholder demands, regulatory pressures, and the sector's environmental footprint. The focus on ESG in oil and gas arises from the need to balance operational efficiency with the responsible management of resources, reduction of greenhouse gas (GHG) emissions, and the transition toward renewable energy sources.

Socially, there is a growing emphasis on workforce safety, community relations, and ethical supply chain management, with companies addressing these through enhanced safety protocols, stakeholder engagement, and transparency initiatives.

The findings underscore the need for stronger regulatory frameworks, increased ESG literacy, and more transparent reporting mechanisms to bridge the gap between ambition and execution. Ultimately, this paper contributes to a deeper understanding of how ESG integration can be effectively advanced in the UAE's oil and gas sector, aligning economic goals with long-term sustainability.

INTRODUCTION

1.1 Background

Being the main fuel sources in the world, oil and natural gas are important sectors of the energy industry that have a energy. As a result of shale gas production, natural gas has grown in importance in the world energy supply since it emits fewer greenhouse emissions when burned than coal and oil (LOC, 2021).

The oil and gas industry are without a doubt one of the world's largest, most complex, and significant companies. The things produced by this company have an impact on everyone's life, including fuels for warmth, power, lubricants, asphalt, propane whereas numerous petrochemical merchandises ranging from clothing to carpets to eyeglasses (Inkpen and Moffett, 2011).

Hydrocarbons are strings of carbon and hydrogen created by the compression of organic material over millions of years. These materials include oil and natural gas. Petroleum is the general term used to describe both natural gas and oil. They're frequently seen together. Non-associated gas is the name given to a subterranean region or reservoir that contains simply gas and no oil. The gas present in a reservoir that is combined with oil is referred to as associated gas (NRGI, n.d).

The global community at large as well as the politics of various countries that are greatly influenced by oil and gas. The discovery of the O&G has significantly accelerated global industrial expansion and facilitated both local and international transportation. In the household level, gas and oil energy sources have eased human existence in many ways, including cooking, heating, providing power, local mobility, and many more. Therefore, the use of petroleum and its byproducts as energy sources is not going to be completely replaced in the modern world (Hassan, 2013).

This research study will help managers and executives understand the relevance of ESG reporting and raise awareness about ESG difficulties in the UAE's O&G industry. This type of research will aid to eliminate and replenish the obstacles. These kinds of research are both base-line and primary studies that serve to improve the existing regulations and practices followed in the O&G industries (Martto, et al., 2023).

LITERATURE REVIEW

Two significant resources that are traded globally are oil and gas. Because of economies of scale, the transportation of oil and oil products is very easy and affordable.. For many countries, the trade in O&G has a major effect on the current position in the balance of payments. Specifically, a lot of companies that export oil rely on these exports for their foreign exchange earnings (Stevens, 2016).

One way to conceptualize the oil business is as an ongoing process centered around the production or extraction of oil from the ground. The processes of exploration, which involves finding oil-bearing land, and development, which entails building production infrastructure like gas separators and oil wells, come before production (Tetreault, 2004).

Transportation and Distribution: A large network of pipelines, tankers, and other transportation infrastructure link extraction sites and refineries to end customers around the globe, making logistics a crucial component of the sector. To guarantee a steady and dependable supply of energy, this transportation network's stability and effectiveness are essential (IEA, 2020).
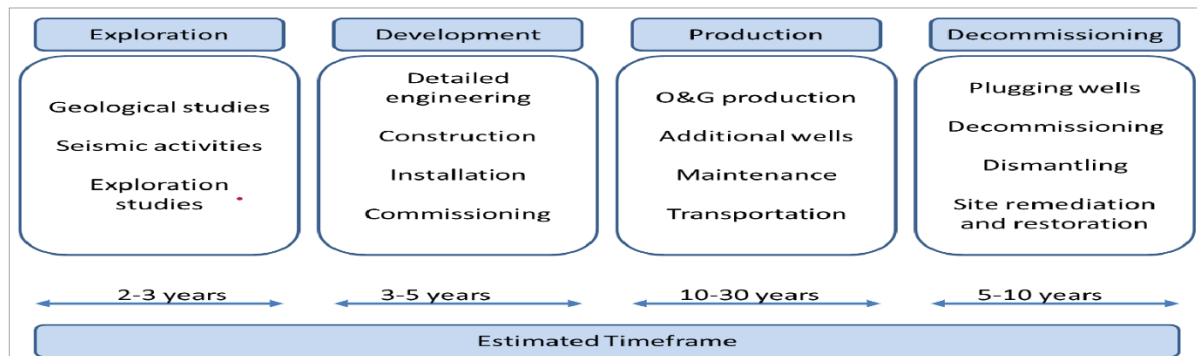

Figure 2.1 Oil and Gas Project Lifestyle (Source: 2009 Cairn Energy, n.d)
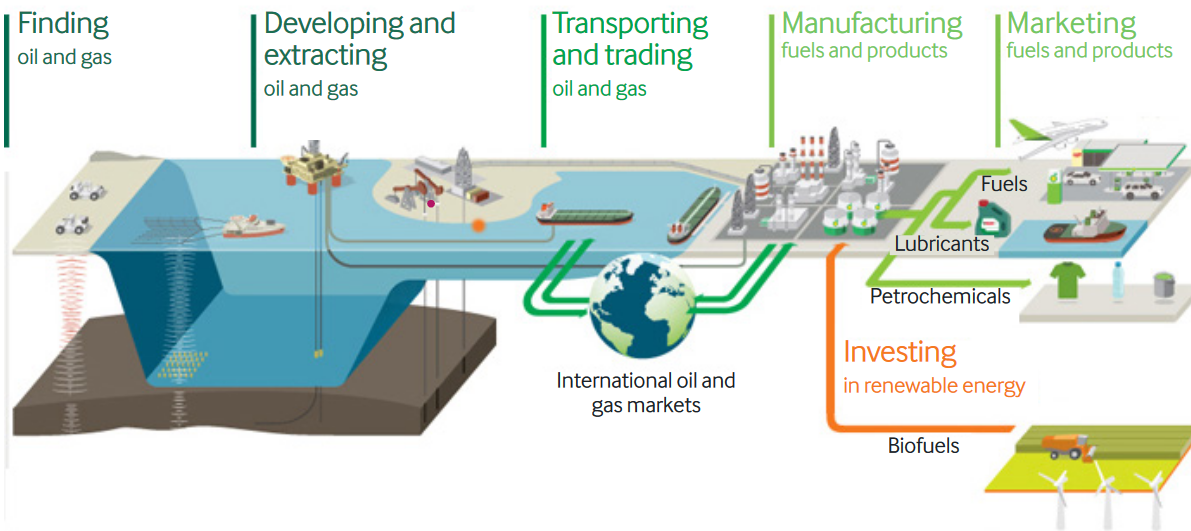
Figure 2.2 Stages of oil and gas lifecycle (NRGI,2015)

A thorough understanding of the structure of the O&G sector is necessary in order to evaluate the responsibilities and difficulties of each link in the chain and to comprehend the industry's contribution to sustainable development (Schweitzer, 2010a).

2.2. Economic impact of the Oil & Gas Industry

In the context of the world economy, the O&G sector is enormous and has a significant impact on markets, countries, and people's lives. The economic factors surrounding this business are thoroughly examined in this article, along with its contributions to employment, trade balances, national economies, government revenues, and problems. Few economic sectors can match the revolutionary effects of oil and gas (Smith, 2019).

2.3. History of the Oil and Gas Industry

According to the American Petroleum Institute, the advantages of petroleum to humanity date back almost as far as history. Crude oil has been used by humans for thousands of years for a wide range of applications. For example, early people used crude petroleum as a water-repellent. Stated differently, they used petroleum as a material or substance to prevent water from entering regions where they did not want it to (Anderson, 1985).

2.4. Global Oil & Gas Industry

Unquestionably one of the biggest, most intricate, and significant worldwide enterprises is the O&G sector. International wars, geopolitics, elections, and national security are all impacted

by this business. Crude oil and natural gas prices are perhaps the two commodities prices in the world economy that are most frequently monitored (Inkpen & Moffett, 2011). All of this is happening in the midst of forecasts that by 2030, the world's energy consumption would rise by 30% to 40% (Inkpen & Moffett, 2011).

Country	Percent of World Production, 2009	Output Change Since 1999
Russia	12.9%	62.4%
Saudi Arabia	12.0%	9.7%
United States	8.5%	−6.9%
Iran	5.3%	17.0%
China	4.9%	18.0%
Canada	4.1%	23.4%
Mexico	3.9%	−10.9%
Venezuela	3.3%	−22.0%
United Arab Emirates	3.2%	3.5%
Kuwait	3.2%	19.0%
Iraq	3.2%	−4.9%
Norway	2.8%	−25.4%
Nigeria	2.6%	−0.3%
Brazil	2.6%	79.1%
Angola	2.3%	139.4%
Algeria	2.0%	19.5%
Libya	2.0%	15.9%
Kazakhstan	2.0%	166.3%
United Kingdom	1.8%	−50.2%
Qatar	1.5%	85.9%
Total	84.1%	

Figure 2.3 Major Oil Producing Countries as of 2009 (Source: Inkpen & Moffett, 2011)

Country	Percent of World Production, 2009	Output Change Since 1999
United States	20.1%	11.3%
Russia	17.6%	−1.5%
Canada	5.4%	−8.7%
Iran	4.4%	132.8%
Norway	3.5%	113.4%
Qatar	3.0%	305.0%
China	2.8%	238.0%
Algeria	2.7%	−5.3%
Saudi Arabia	2.6%	67.6%
Indonesia	2.4%	2.7%
Uzbekistan	2.2%	28.1%
Malaysia	2.1%	53.4%
Netherlands	2.1%	4.1%
Egypt	2.1%	273.2%
United Kingdom	2.0%	−39.8%
Mexico	1.9%	56.8%
Argentina	1.4%	19.6%
Trinidad & Tobago	1.4%	246.1%
United Arab Emirates	1.6%	26.9%
Turkmenistan	1.2%	76.3%
Total	82.5%	

Figure 2.3 Major Gas Producing Countries as of 2009 (Source: Inkpen & Moffett, 2011)

The establishment of the OPEC is an evidence for worldwide government action. The goal of OPEC's founding in 1960 was to give producing nations more negotiating leverage at the expense of major oil corporations. According to an analyst, OPEC has undoubtedly played a significant role in sporadic "shocks to the system," even though it is challenging to discern any discernible, long-term link between the organization's output and changes in crude oil prices (NRGI, 2015).
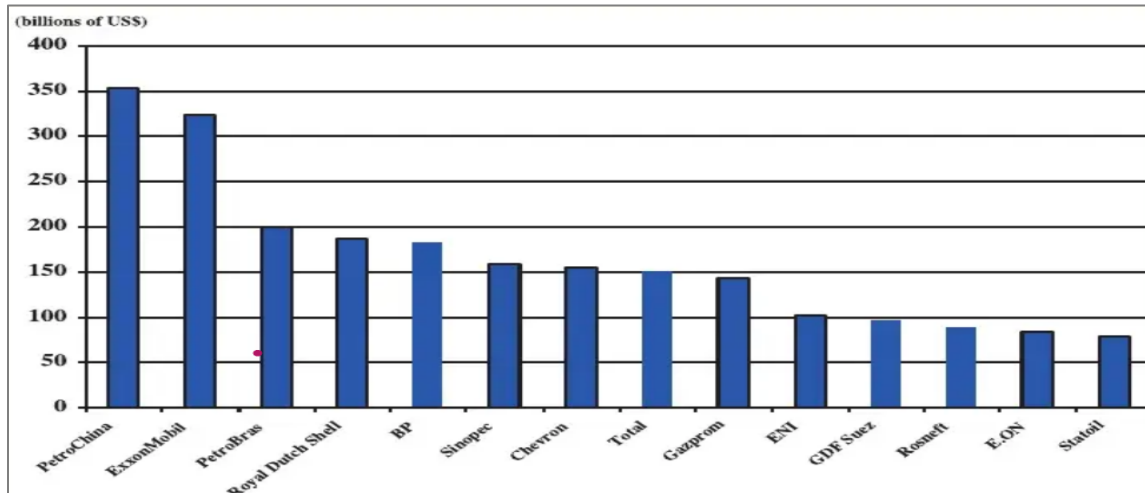

Figure 2.4 World's Largest Energy firms by Market Capitalization (Billions US$) (Source: PFC Energy, 2009)
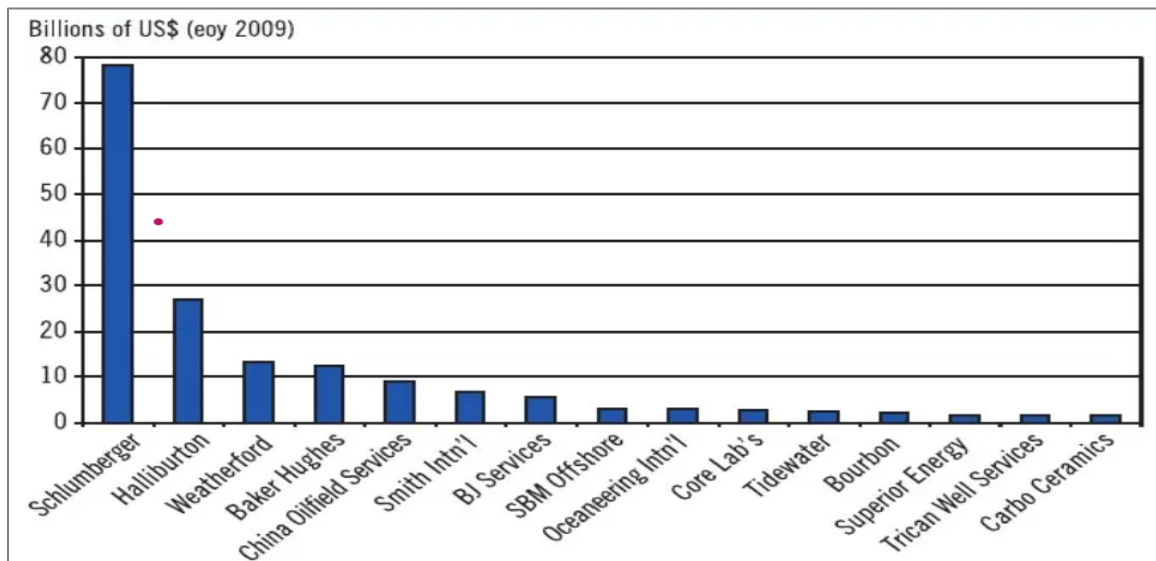

Figure 2.5 Largest Independent Oilfield Services Firms Based on Market Capitalization (Source: PFC Energy, 2010)
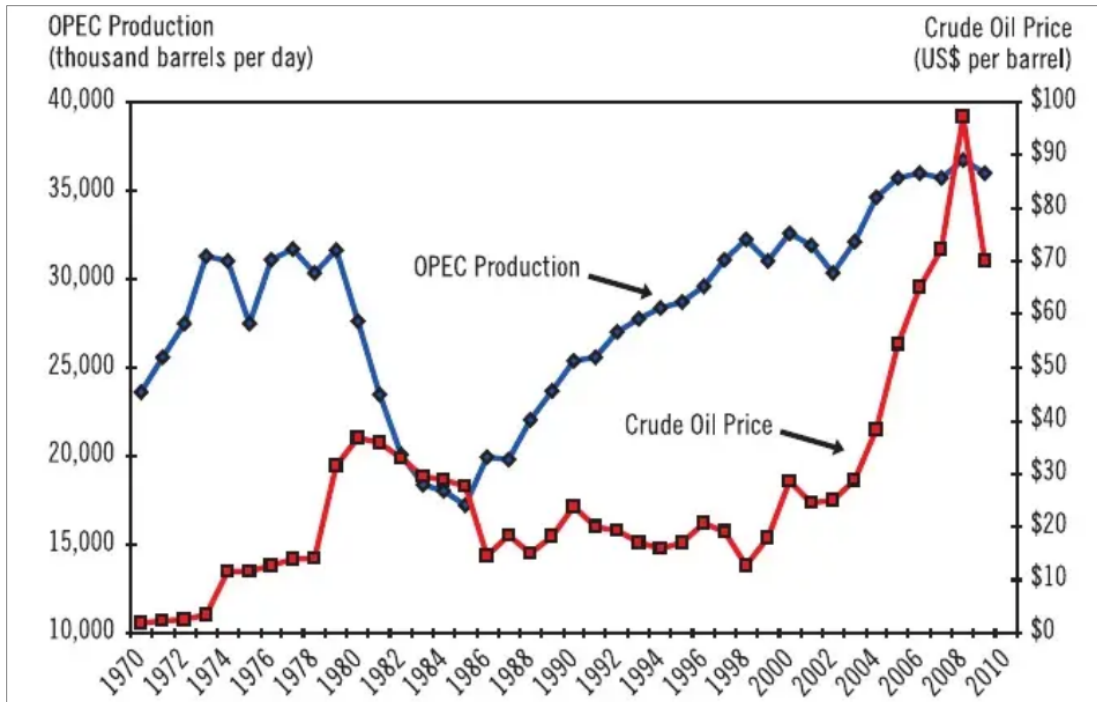
Figure 2.6 OPEC Production and Crude oil prices (Source: BP Statistical Review of World Energy, 2009)
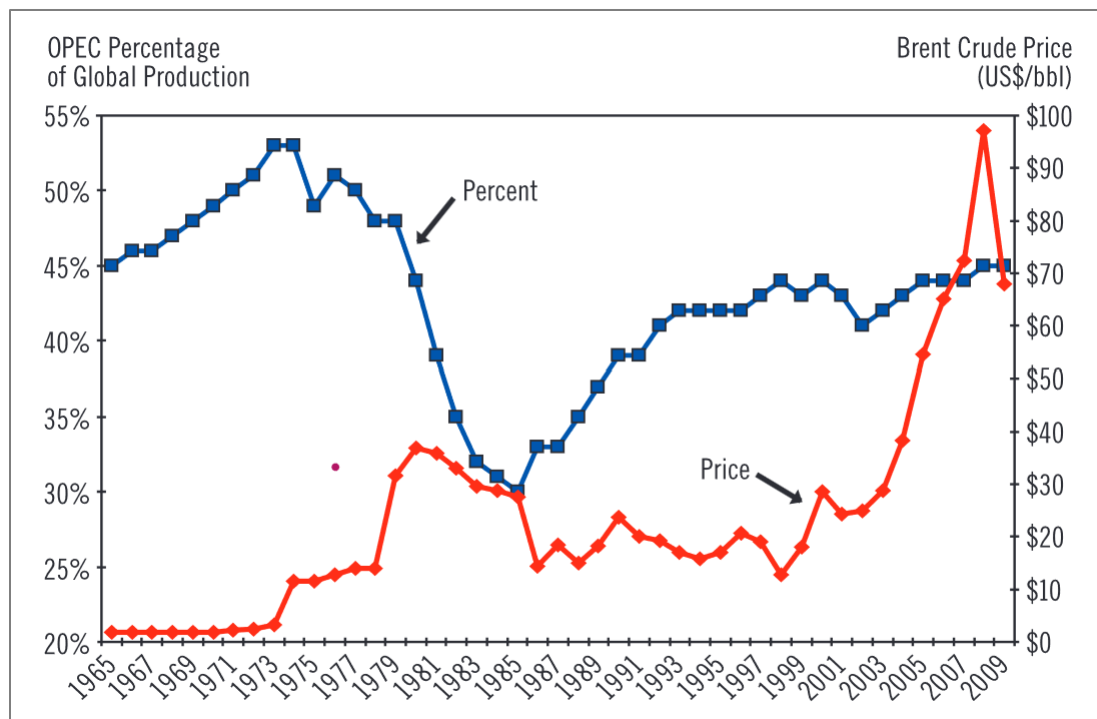

Figure2.7 OPEC's Share of Global Oil Production (Source: BP Statistical Review of World Energy, 2010)

45% of the world's oil output was directly under the control of OPEC in 2009. It is crucial to understand that OPEC is made up of both nations and businesses for our goals. There is never an easy relationship between non-OPEC central banks (NOCs) and other oil firms. Numerous oil firms, such as the IOCs, collaborate with NOCs to produce inside OPEC nations, advancing the cartel members' production objectives (Jessen, et al., 2009).

2.5. Oil & Gas Industry in the Middle East

The Middle East serves as the global oil industry's "center of gravity" geographically. Oil has significance as a fuel and as a source of foreign exchange if there is sufficient to export. However, the boon has frequently proved to be a curse for some emerging nations that produce oil (Tetreault, 2004).

2.6. Oil and gas Industries in the UAE

Oil export earnings have contributed to the United Arab Emirates' wealth and its quick transition from a desolate and underdeveloped desert territory to a thriving economy. With the United Arab Emirates holding close to 10% of global reserves, and economic development for a number of decades to come (Kumetat, 2012).

2.7. Common Challenges and Risks Associated to the Oil & Gas Industry

There are already 7.2 billion people on Earth, and for the next 20 years, another billion will be added to this number. However, the work done to safeguard the physical surroundings is insufficient for a species that depends on the benefits of environmental facilities (Sharma et al., 2014).
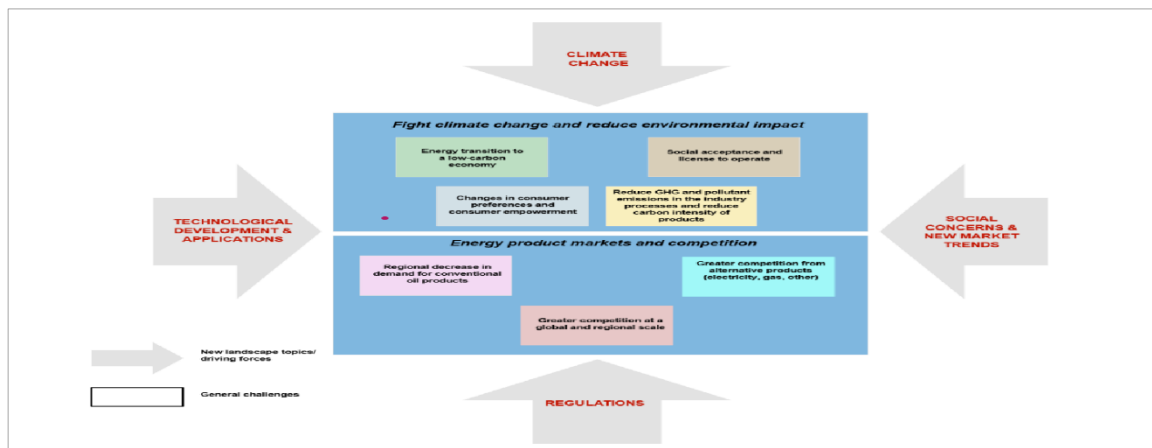
Figure 2.8 New landscape driving topics and general challenges (Source: Manuel & Eloy, 2018)

The promotion of leadership roles, workers' emotional dedication to the company, employee empowerment, and the establishment staff system are the pillars that support the theories in the stream of HR management strategy (Rohman, et al., 2020). Digitalization globally presents technological challenges for oil and gas firms as well as influences technological advancement (Chkalova et al. 2020).

2.8. ESG Related Challenges in the Oil & Gas Industry

Environmental, social, and governance (ESG) concerns are becoming more significant for companies in all economic sectors, including the O&G industry (Foreman, 2022).

ESG objectives. As a result, the industry is being encouraged to fulfill challenging targets by 2030 and 2050 by means of the UAE sustainability plans, ADNOC sustainability pillars, and more stringent rules from the IMO (Martto, et al., 2023).

2.9. Research Gaps

Difficulties faced by the oil and gas sector worldwide, very little academic study has been done to look specifically at the opportunities and problems associated with the ESG issues in the sector, especially in the UAE. The O&G industries are distinguished by its complexity, distinctiveness, and range of issues that need the existence of ESG reporting in order to successfully navigate the ever-changing environmental, social, and governance requirements. Therefore, it is essential to look at the ESG issues related to the Middle East's O&G sector, especially in the UAE.

METHODOLOGY

3.1. Introduction

This chapter outlines the overall research methodology used to ensure a useful strategy to handle the research topic by meaningfully and clearly relating the study's many components. In order to conduct a relevant inquiry, the chapter provides an overview of the theory and methodology employed in the current study, including theoretical research design considerations. There are six sections to this chapter. It outlines the research strategy as well as the connections between the ideas and the study. After that, it describes the research methodologies used, the framework adhered to, the data gathering process, and the analysis and presentation of the results. At the end, the study's validity, and reliability as well as the constraints researchers had when composed this report are emphasized.

The approach used in research is one of its key elements. It is a comprehensive research technique that describes the right research process. As to Dawson, "the research is guided and justified by the philosophy or general principles." The research methodology includes a collection of assumptions and convictions that govern how the research questions are interpreted and how research methodologies are chosen (Dawson, 2009). Methodology frequently raises the question of how research may be designed and executed (Morgan, 2007).

3.2. Research Onion

A study design can be represented by an onion, which Saunders et al. (2007) refers to as the "research onion." Using the theoretical concept of the research onion model is one way to develop a research technique. The research onion model has been widely used in social science originally introduced it in 2007 (Saunders et al., 2007). Saunders' research onion describes the necessary layers or steps that need to be finished in order to construct a successful technique in a fairly exhausting way.
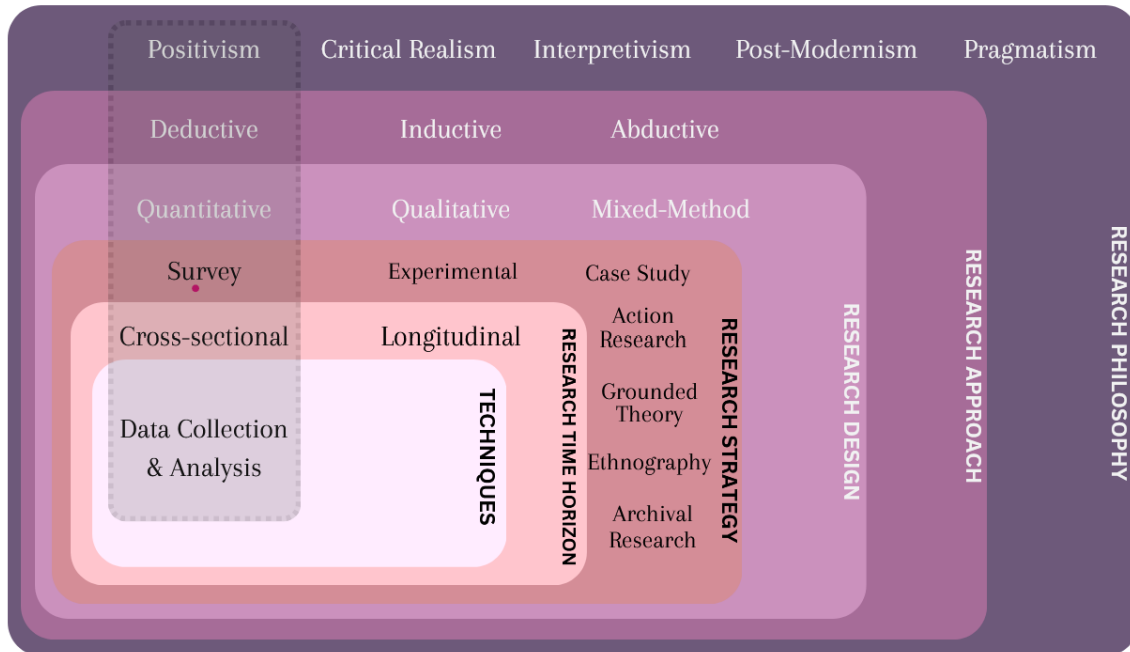
Figure 3.1. Research onion hierarchy

3.2.1. Research Philosophy

A research paradigm is a set of presumptions and consensus held by experts in a field about how problems ought to be identified and addressed. It offers a wide view of the globe. Methodology, ontology, and epistemology are indicators of research paradigms (Ganiyu et al., 2021). As was previously said, a research paradigm consists of ontology, epistemology, and methodology. These components provide the viewpoint such the uptake of building information modeling (BIM). This is seen as a philosophy of research Williams (2018).

Now, the researcher examines three distinct methods for doing educational research i) positivism, ii) interpretivism, iii) critical theory. This is crucial because, as research consumers, we need to be able to investigate claims made by researchers who follow diverse research paradigms in more detail. Understanding the ontological and epistemological stances of researchers—beliefs that are sometimes implicit and must be inferred—will enable us to assess the significance and applicability of the research (Rehman & Alharthi, 2016).

3.2.2. Research Approach

The approach to the research study and theories utilized to design and carry out the study, as well as the data collecting, are two crucial components that must be taken into account while doing research (Bryman and Bell, 2007).

The deductive and inductive reasoning approaches have limitations with regard to their application and validity in a research process, respectively. In research investigations, two main research methodologies are used: deductive and inductive.

This study uses a deductive methodology since the researcher identified a research opportunity inside the literature review by first gathering several hypotheses on the ESG challenges facing the oil and gas industry. The researcher developed the research questions pertinent to the study's goals after identifying the research gap that served as the study's driving force.

3.2.3. Research Design

A research design is a set of procedures that a researcher uses to legitimately address research issues. It is quite accurate and objective. The kind of analysis you should do to obtain the intended findings is usually dictated by the study design. Whether or not you can get the answers to your research questions will determine how excellent or poor your design is (Durdella, 2019).

Research designs are plans and methods for conducting research that range from broad ideas to particular methods for collecting and interpreting data. This technique offers several options to assist researchers in deciding which design to use as the primary option for their research (Creswell, 2009).

This study investigates the relationship between two variables quantitatively using a questionnaire. Since the purpose of this study is to identify the ESG Challenges that impact the oil and gas industry, a quantitative research technique was used. The researcher conducted primary research in order to get and acquire the data needed to fulfill the objectives and purposes of the ongoing study. Numerical values, statistics, and statistical relationships were disclosed by the data for this inquiry (Creswell, 2009).

3.2.4. Research Strategy

The research methodologies being employed may be used to exploratory, descriptive, and explanatory research (Yin, 2003). These clearly fit into the inductive technique in certain situations and the deductive strategy in others.

Case studies concentrate on acquiring information on a specific item, event, or activity, such a particular corporate division or organization. In a case study, the case is the individual, group, organization, event, or situation that the researcher is interested in. A case study is intended to show how many viewpoints and perspectives may be applied to assess a real-world occurrence in order to comprehend a problem clearly (Yin, 2003).

3.2.5. Research Time Horizon

The zone where research is conducted to solve a problem or offer a solution for a topic at a particular time is known as the research time horizon (Saunders and Tosey, 2013). The researcher determines the time horizon based on the objectives and design of the investigation. The population could be the focus of the researcher's attention for a short while or for a long time (Alamgeer, 2022).

3.3. Conceptual Framework

A conceptual framework serves as the main structure and method for planning and carrying out research. It describes a study's main or core components and how they relate to one another (Miles, Huberman, & Saldaña, 2019). As you get more involved and your comprehension of these component pieces and the entire comes together and builds upon and into each other, a conceptual framework gets more complex. According to Akintoye (2015), researchers primarily employ conceptual frameworks when pre-existing theories are insufficient or inappropriate for providing a solid foundation for their research.

The research's focus is determined by the conceptual framework, which also shapes and informs it. Very little has been published about them, and a number of terminology are used somewhat interchangeably and frequently in ambiguous ways, such as conceptual framework, theoretical framework, theory, idea context, logic model, and concept maps. In reaction to this conceptual and definitional ambiguity, Ravitch and Riggan (2012,

2016) developed Reason and Rigor, which focuses on defining conceptual frameworks and how they direct research from the outset to the end. The conceptual framework lays out the main ideas of the study and determines its focus and course. The primary notions originate from a critical analysis of pertinent concepts and phrases discovered in literature, as well as from theoretical research conducted within the literature (Shikalepo, 2020).

Effectiveness of ESG Implementation

- Environmental Impact & Conservation
- Social Responsibility & Community Relations
- Governance Structures & Ethical Decision-Making
- Barriers to ESG Integration
- Stakeholders Perspectives & Strategies
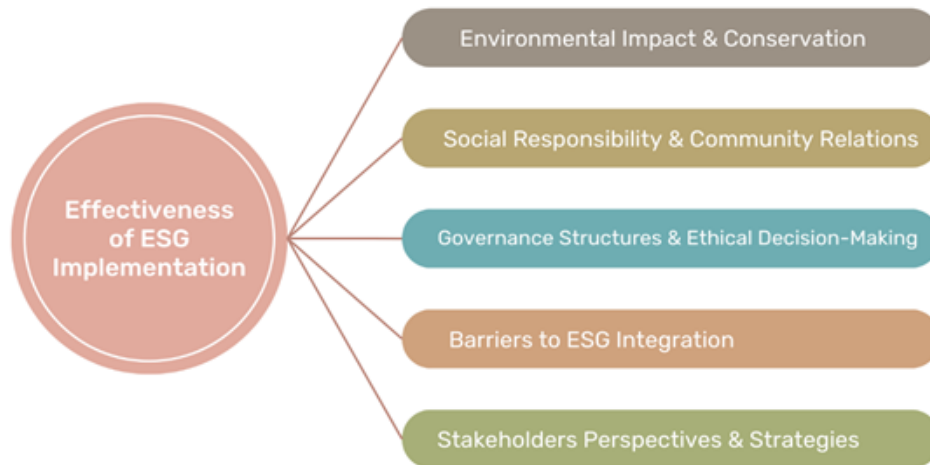
Figure 3.2. Effectives of ESG implementation

3.4. Variables

Research variables are factors that are taken into account while analyzing data to establish cause and effect correlations. Researchers are interested in dependent variables, and they think that independent factors have an impact on the dependent variable. The literature was mined for research variables (Marudhar, 2018).

3.5. Hypotheses

An assumption regarding the link between two or more variables is called a hypothesis. Though they take the form of questions, research questions and hypotheses are comparable (Morgan & Harmon, 2000). In quantitative research, a hypothesis is tested and a result is reached that either rejects or does not reject the null hypothesis (Rubin & Babbie, 2005). According to Creswell (2002), a hypothesis is a researcher's prediction on the relationship between variables. According to Creswell (2002), statistical techniques

like multiple regression analysis and correlation analysis are necessary for evaluating the hypotheses because they allow the researcher to extrapolate population-level conclusions from the study sample.

The researcher must determine if relationships are maintained once the variables have been discovered and their relationship has been established. A rationally conjectured relationship involving two or more variables represented as a stable statement is known as a hypothesis (Sekaran, 2003). The hypotheses in the current study provided the necessary framework to investigate the purpose of this study.

3.5.1 Environmental Impact and Conservation:

- Null Hypothesis (H0_a): There is no significant difference in the environmental degradation of ESG and current ESG implementation practices in UAE based companies in the GCC region.

- Alternative Hypothesis (H1_a): Oil and Gas Companies in UAE have significant difference environmental degradation and current ESG implementation in Oil and Gas companies in the UAE.

- Null Hypothesis (H0_b): There is no significant difference in the implementation of conservation measures and current ESG implementation between Oil & Gas Companies in UAE

- Alternative Hypothesis (H1_b): The Oil & Gas Companies in UAE exhibit a significant difference of conservation measures and current ESG implementation between Oil & Gas companies.

3.5.2 Social Responsibility and Community Relations:

- Null Hypothesis (H0_c): There is no significant difference in the effectiveness of corporate social responsibility (CSR) programs and the social responsibility initiatives between oil and gas companies in the UAE.

- Alternative Hypothesis (H1_c): There is a significant different between CSR programs and the social responsibility initiatives in Oil and gas companies in the UAE.

3.5.3 Governance Structure and Ethical Decision-Making:

- Null Hypothesis ($H0_e$): There is no significant association between the governance structures of oil and gas companies in the UAE and the ethical decision-making processes within these organizations.
- Alternative Hypothesis ($H1_e$): A significant association exists between the governance structures of oil and gas companies in the UAE and the ethical decision-making processes within these organizations.

3.5.4 Barriers to ESG Integration:

- Null Hypothesis ($H0_g$): There is no significant relationship between the perceived barriers to ESG integration and long-term financial performance and resilience in the oil and gas companies.
- Alternative Hypothesis ($H1_g$): There is a significant relationship between the perceived barriers to ESG integration and long-term financial performance and resilience in the oil and gas companies.

3.5.5 Stakeholder Perspectives and Strategies:

- Null Hypothesis ($H0_i$): There is no significant relationship between stakeholder perspectives, governance structures, and ethical decision-making processes within oil and gas companies in the UAE.
- Alternative Hypothesis ($H1_i$): Stakeholder perspectives and effective governance structures are significantly related to ethical decision-making processes within oil and gas companies in the UAE.

3.5.6 Effectiveness of ESG Implementation:

- Null Hypothesis ($H0_k$): There is no significant difference technological innovations and industry best practices and the perceived effectiveness of ESG (Environmental, Social, and Governance) implementation in the oil and gas companies in the UAE.
- Alternative Hypothesis ($H1_k$): Technological innovations and industry best practices are significantly different to the perceived effectiveness of ESG implementation in the oil and gas companies in the UAE.

3.6. Target Population

The primary group that the research is concerned with is the population of interest for the study, which consists of the people, organizations, or other things that one wishes to comprehend and to whom or to whom the study conclusions may be generalized or transferred. Populations define the parameters of a study's scope and give the reader context and environmental signals (Salkind, 2010).

This research study aims to understand the effectiveness of ESG practices in the Oil and Gas Industry in the UAE. There are several major Oil and Gas companies in the UAE including, ADNOC, ENOC, APEX Technology, PESCO, Total Energies, British Petroleum, etc.

This research study is also a case on the effectiveness of ESG practices in the Oil and Gas Industry in the UAE, hence, the target population for the study is employees working in the oil and gas companies based in the UAE.

3.7. Sampling and Sampling Techniques

The researcher probably would not be able to gather data from every example in order to address the study questions. Consequently, picking a sample is necessary. The population is the totality of the cases that make up the researcher sample. Taherdoost (2016) states that researchers use sampling approach to lower the number of instances since they lack the time and resources to analyze the complete population.

3.7.1 Inclusion Criteria

To be included as a participant in this study, the sample had to meet the following criteria:

- They should be working professionals of oil and gas companies in the UAE.
- They should be able to read and understand English.
- They should be 21 years or above.

3.7.2 Exclusion Criteria

Any individual falling under any of these criteria were excluded from the study:

- Anyone who was not a part of oil and gas companies in the UAE.
- Incomplete Responses.

3.7.3 Sampling Process

The first step in the sampling procedure is to explicitly identify the target population. Population is frequently associated with the total number of individuals residing in a certain nation. A list of the actual cases from which a sample will be taken is called a sampling frame (Yin, 2003).

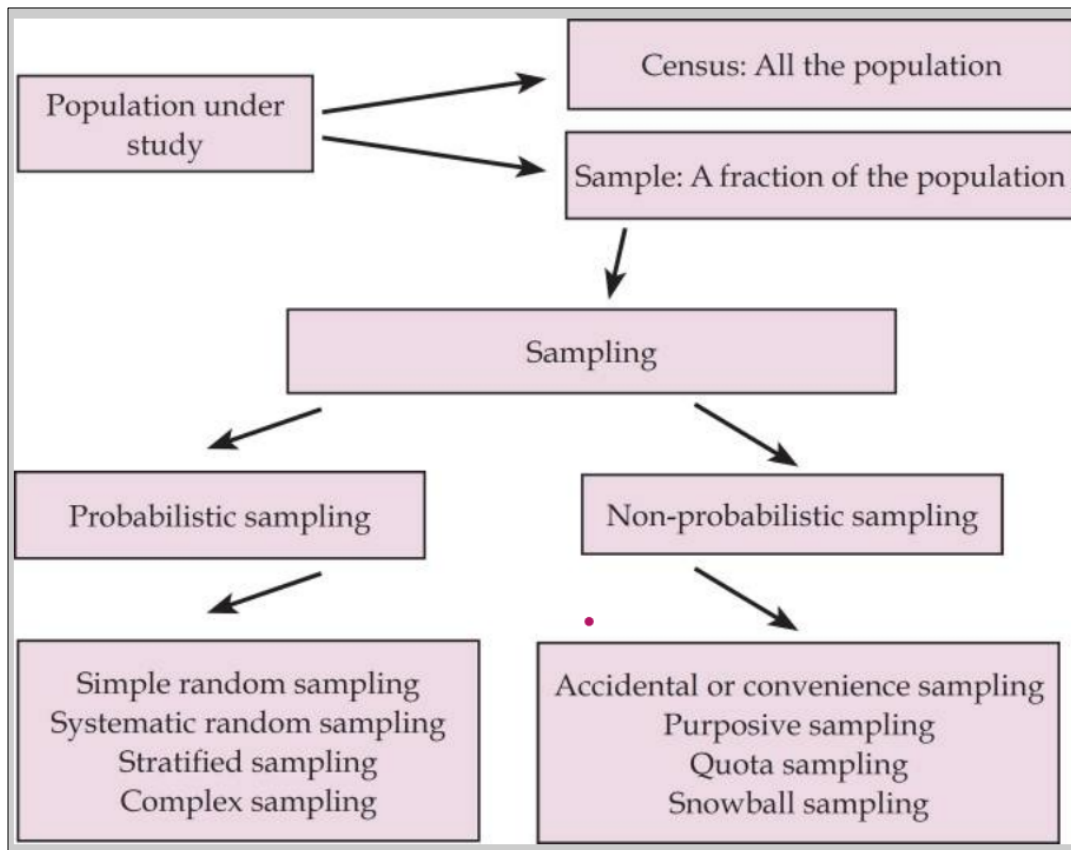*Figure 3.3. Different types of Sampling*

Convenience sampling, sometimes referred to as consecutive sampling, involves selecting participants in a sequential manner based on their convenient accessibility. (Dermatol, 2016).

3.7.4   Sampling

Sampling may be described as the process by which individuals or sampling units are picked from the sample frame. Given that the sampling technique may have an impact

on the sample size estimation, the sampling strategy must be defined in advance (Dermatol, 2016).

The study's major target group is the working population in the UAE's oil and gas industry. Since it was it took around two months to finish the survey itself due to holidays and the need for enough time to send the questionnaire out and encourage participation. The researcher received 284 responses.

The following sample size formula has been adopted:

$$S = [X^2 \times N \times P \times (1 - P)] \div [d^2 \times (N - 1) + X^2 \times P \times (1 - P)]$$

Where,

S = Sample size

X^2 = Chi-square critical values for the probability of 0.05 at one degree of freedom

N = Population Size

P = Population proportion (estimates as 0.50 in this study)

d = the degree of accuracy expressed as a proportion (0.05)

$$S = \frac{3.814 \times 1080 \times 0.5 \times (1 - 0.5)}{0.05^2 \times (1080 - 1) + 3.8415 \times 0.5 \times (1 - 0.5)}$$

$$S = \frac{1037.205}{3.658} = 284$$

3.7.5 Validity and Reliability

The two factors that may be used to assess an instrument's or questionnaire's accuracy and consistency are validity and reliability. The researcher can evaluate the questionnaire's sincerity and the possibility that the same respondents would react in the same way if they were given the same questionnaire again by using validity and reliability (Bolarinwa, 2015). SPSS 29.0 has been used to examine the questionnaire's validity and reliability.

3.7.6 Data Collection Tool

One of the most crucial phases of doing a research study is collecting data. The procedure the researcher employs to gather the data for the study is known as the data collection methodology. The researcher employs a data gathering approach in this investigation.

A set of statements was created called the Questionnaire, which served as the instrument for gathering data and was intended to assess and analyze the independent and dependent variables in order to produce a conclusive conclusion for the study (Bryman & Cramer, 2012).

3.7.7   Data Analysis
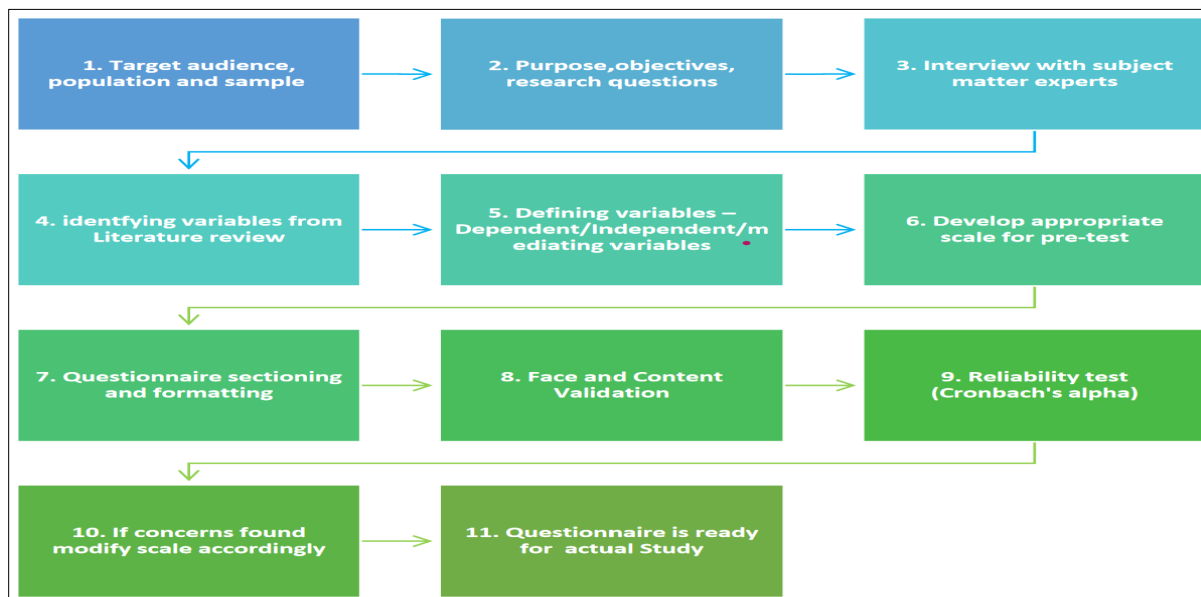
Figure 3.4. Overall work flow of research

3.7.8   Frequency Analysis

When analyzing data that is numerical in nature and was gathered through a quantitative research design using surveys or questionnaires, statistical software like SPSS 29.0 should be utilized. The Likert scale is used in surveys and questionnaires, hence the majority of the data they gather are numerical in nature. To ascertain the impacts of independent factors on the dependent variable, data are analyzed using models including regression, ANOVA, correlation, and T-test (Bryman & Cramer, 2012).

3.7.9   Descriptive Analysis

After doing preliminary testing, the researcher analyzed the respondents' normal behavior with regard to each variable using descriptive statistics. As part of the descriptive statistics, the researcher used frequency analysis because the data were categorical in nature.

3.7.10 ANOVA

ANOVA is the acronym for analysis of variance. When the means of three or more independent groups are compared, the one-way analysis of variance (ANOVA) looks at the data to see whether there are any significant differences. The one-way ANOVA is surpassed by the two-way ANOVA.

3.7.11 Correlation Analysis

The connection between two variables may be measured using correlation. It is widely used in statistics and business. Correlation analysis is the study of the connection between two variables. If we suppose that variable A has rank (RA) and variable B has rank (RB), and that (d) reflects the difference between the two ranks, that is, (d = RA − RB), then

The formula for Spearman's Correlation and the inference of the correlation coefficient is as follows:

$$r_s = 1 - 6 \sum d^2 / n(n^2 - 1)$$

value of correlation coefficient	the meaning
+1	Completely positive correlation
From 0.70 - 0.99	Strong positive association
From 0.50 - 0.69	Average positive correlation
From 0.01 - 0.49	Weak positive correlation
0	Not a positive relationship

Table 3.1 Interpretation of the correlation coefficient values

The formula for Pearson Correlation to quantify the degree of relationship (R) between variables, X and Y, is:

$$R = \frac{n(\sum XY) - (\sum X).(\sum Y)}{\sqrt{n(\sum X^2) - (\sum X)^2}\ \sqrt{n(\sum Y^2) - (\sum Y)^2}}$$

Here,

- n = Number of observations
- x = Measures of Variable X
- y = Measure of Variable Y
- $\sum_{xy}$ = Sum of the Product of respective variable measures
- $\sum_x$ = Sum of the measures of Variable X
- $\sum_y$ = Sum of the measures of Variable Y
- $\sum_x^2$ = Sum of Squared Values of the Measures of Variable X
- $\sum_y^2$ = Sum of Squared Values of the measures of Variable Y

3.7.12 Regression Analysis

The degree of association between one dependent and one or more independent variables is evaluated using regression analysis. It assists in estimating the value of a dependent variable based on one or more independent factors.

3.7.12 T-Tests

A t-test is a hypothesis test based on the mean of one or two populations that are normally distributed. The hypothesis that the related population means are suggestively varied is tested statistically by means of the independent sample t-test, which compares the means of the two independent variables.

3.7.13   Kruskal Wallis Test

The Kruskal-Wallis (KW) test is a nonparametric technique developed in 1952 by Kruskal and Wallis to determine if samples are drawn from the same distribution. The

Mann-Whitney U test includes more than two groups. The Kruskal-Wallis test's null hypothesis is that the group mean rankings are equal.

3.7.14 Friedman Test

When comparing three or more matched groups, this non-parametric test is employed. Though it is actually a one-way ANOVA, it is occasionally referred to as the Friedman test and sometimes reported as Friedman's two-way ANOVA. A real non-parametric two-way ANOVA does not exist.

3.7.15 Ethical Consideration

The researcher has ensured that the meaning of all the data supplied and presented in this study is consistent. The researcher has been very clear that all of the recommendations are based on the study's findings rather than any recommendations that have been made.

CHAPTER 4: DATA ANALYSIS

4.1. Introduction

The detailed research approach employed in this study is the main topic of this chapter. In order to analyze the influence of numerous factors on the efficiency of ESG integration in the oil and gas business in the United Arab Emirates, data was acquired using a survey questionnaire, which is a quantitative approach used in this study. The chapter, which is divided into many sections, includes all of the statistical hypotheses and tests that will enable the researcher to meet the goals of the present study.

After Abu Dhabi, Dubai is the UAE's second-largest oil producer, however its output is declining. Oil and LPG are exported from three terminals in Dubai: Jebel Ali, Port Rashid, and Fateh. The offshore Mubarak field is the primary source of oil production in Sharjah, the neighboring city of Dubai to the north, which ranks third in the UAE for hydrocarbon output (Butt, 2016).

A pilot research is conducted at the conclusion of the chapter to evaluate the validity and reliability of the survey idea before starting data collection for the main study. Important ethical questions are raised in the chapter's conclusion.

The research technique forms the basis of the deductive approach employed in this work. The chapter, which is broken up into many sections, contains all of the statistical tests and hypotheses that will help the researcher reach the ongoing study's objectives..

4.2. Cronbach's Alpha

As of right now, Cronbach's alpha reliability sample values are presented; however, a confidence interval for the population reliability value should also be provided. Accompanying the sample value should be a confidence range for the population value

of Cronbach's alpha, shown as ρ_q in this case. While accuracy of measurement is useful in and of itself, any research that uses the sum or average of q measurements as a response variable or predictor variable in a statistical analysis has to have some notion of the value of ρ_q.

For this investigation, the Cronbach's Alpha test for Reliability was run in SPSS to assess the data's dependability. As per the common rule of thumb, measures that have a Cronbach's Alpha value of 0.813 are considered extremely dependable because the value is more than 0.7. This was demonstrated by the test findings. A Cronbach's alpha value of more than 0.7 is suitable for further study (Gliem & Gliem, 2017).

Case Processing Summary			N	%
Cases		Valid	284	100
		Excluded	0	0
		Total	284	100

Reliability Statistics	
Cronbach's Alpha	N of Items
0.813	30

Table 4.1. Details of the cases and its reliability statistics

Reliability Statistics			
Variable		Cronbach's Alpha	N of Items
Overall		0.813	30
AA	AA1	.808	1
	AA2	.811	1
	AA3	.808	1
	AA4	.803	1
	AA5	.805	1
	Overall	.835	5
BB	BB1	.806	1

	BB2	.798	1
	BB3	.800	1
	BB4	.804	1
	BB5	.812	1
	Overall	.781	5
CC	CC1	.810	1
	CC2	.808	1
	CC3	.811	1
	CC4	.813	1
	CC5	.811	1
	Overall	.726	5
DD	DD1	.815	1
	DD2	.810	1
	DD3	.810	1
	DD4	.811	1
	DD5	.809	1
	Overall	.866	5
EE	EE1	.800	1
	EE2	.798	1
	EE3	.798	1
	EE4	.800	1
	EE5	.801	1
	Overall	.837	5
FF	FF1	.814	1
	FF2	.814	1
	FF3	.811	1
	FF4	.811	1
	FF5	.814	1
	Overall	.796	5

Table 4.2. All variables Cronbach's Alpha value of reliability

4.3. Respondents Demographic Profile

Demographic features, according to George (2010), are human traits that comprise details like race, ethnicity, and family size. According to Bell (2008), demographic variables are individual data on things like sex, gender, age, income, education, marital status, employment, religion, birth and death rates, average family size, and average age at marriage. Workplace demographic features, as defined by Greenberg (2004), encompass a range of individual distinctions inside an organization, such as race, gender, ethnicity, age, personality, cognitive style, tenure, organizational role, and educational background.

After examining the responses from the total 284 respondents for this study the following observations were made based on the demographic profile of the respondents:

- All the 284 (100%) respondents are employed in the United Arab Emirates.

- In terms of education level, 138 respondents hold a master's degree, 89 respondents hold a Diploma, 54 respondents have a bachelor's degree, and 4 respondents have a Doctorate (DBA/PhD) degree.

- With regards to work experience in oil and gas industry, out of 284 respondents, 182 respondents have a work experience of 11-15 years, 54 respondents have a work experience of 6-10 years, and 48 have less than 5 years of work experience in the oil and gas industry.

- In reference to work experience in the UAE, out of 284 respondents, 182 respondents have a work experience of 11-15 years in the UAE, 15 respondents have a work experience of 6-10 years in the UAE, and 87 respondents have a work experience of less than 5 years of work experience in the UAE.

- In terms of current role in the organization, 15 respondents are in entry level position, 244 respondents are in mid-level management positions, and 25 respondents are in the senior management positions

Figure 4.1. Demographic profile of respondents - summary

4.4. Descriptive Analysis

Research projects revolve around descriptive analyses. Descriptive analyses are included in practically all reports, regardless of whether the objective is to find and characterize patterns or just to describe samples. When the values of the data are uniformly distributed around a single representative value, the data is said to have a normal distribution. In this part, the researcher reports the findings of the descriptive analysis, a crucial component of this study..
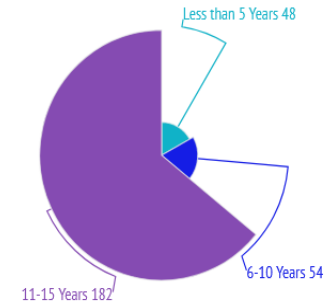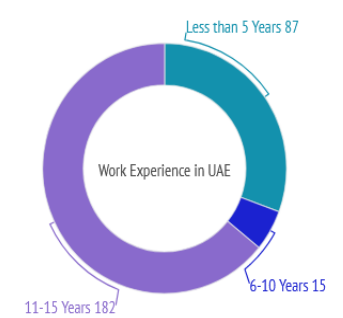
FACTOR ITEMS	CODE
Environmental Impact and Conservation	**AA**
To what extent do you believe that the oil and gas industry in the GCC region is currently contributing to environmental degradation?	AA1
How confident are you in the effectiveness of existing conservation measures implemented by the oil and gas industry in the GCC to address environmental concerns in alignment with ESG standards?	AA2
How confident are you in the transparency and reporting mechanisms employed by the oil and gas companies in the GCC regarding their environmental impact and adherence to ESG criteria?	AA3
In your opinion, to what extent do regulatory frameworks in the GCC effectively promote and enforce environmental conservation practices within the oil and gas industry, considering ESG principles?	AA4
In your opinion, how well do technological innovations and industry best practices contribute to minimizing the environmental impact of oil and gas operations in the GCC, in line with ESG principles?	AA5
Social Responsibility and Community Relations	**BB**
In your opinion, how effective are the community engagement efforts of the oil and gas industry in the GCC, considering the promotion of social inclusion and collaboration with local stakeholders?	BB1
To what extent do you believe that the oil and gas industry in the GCC region actively engages in social responsibility initiatives to benefit local communities?	BB2
How well do you perceive the oil and gas companies in the GCC to be addressing social issues and community needs through their corporate social responsibility (CSR) programs?	BB3
How confident are you in the transparency and communication of the social responsibility initiatives undertaken by the oil and gas industry in the GCC, including their impact on local communities and societal well-being?	BB4
To what extent do you think that the oil and gas companies in the GCC demonstrate a commitment to ethical business practices and contribute positively to the social fabric of the communities in which they operate?	BB5
Governance Structures and Ethical Decision-Making	**CC**

To what extent do you believe that the governance practices within the oil and gas industry in the GCC contribute to effective environmental conservation in alignment with ESG principles?	CC1
How well do you perceive the transparency of governance structures and decision-making processes within the oil and gas companies in the GCC, particularly in relation to environmental conservation efforts and adherence to ESG standards?	CC2
In your opinion, how accountable are the leadership and management of oil and gas companies in the GCC for the environmental impact of their operations, considering ESG criteria?	CC3
To what extent do you believe that governance practices within the oil and gas industry in the GCC are effective in fostering a culture of compliance with environmental regulations and conservation goals?	CC4
How confident are you in the governance mechanisms of oil and gas companies in the GCC to adapt and respond to changing environmental and conservation challenges in the context of evolving ESG expectations?	CC5
Barriers to ESG Integration	**DD**
To what extent do you perceive regulatory complexities and uncertainties as barriers to the successful integration of ESG practices within the oil and gas industry in the GCC?	DD1
How would you rate the level of awareness and understanding of ESG principles among key stakeholders within the oil and gas sector in the GCC as a potential barrier to ESG integration?	DD2
In your opinion, to what extent does the lack of standardized ESG reporting and measurement frameworks act as a hindrance to effective ESG integration in the oil and gas industry in the GCC?	DD3
How would you rate the influence of short-term financial pressures and the perceived conflict between financial goals and long-term ESG objectives as barriers to ESG integration in the oil and gas sector in the GCC?	DD4
To what extent do cultural and organizational resistance to change within oil and gas companies in the GCC act as barriers to the successful implementation of ESG practices?	DD5
Stake Holders perspectives and Strategies	**EE**
To what extent do you believe that the perspectives of key stakeholders (e.g., investors, local communities, government entities) are considered in the development and implementation of ESG strategies within the oil and gas industry in the GCC?	EE1
How well do you think oil and gas companies in the GCC engage with stakeholders to gather insights and feedback regarding their ESG initiatives and integration strategies?	EE2
In your opinion, to what extent do oil and gas companies in the GCC effectively communicate their ESG integration strategies to different stakeholder groups, fostering transparency and trust?	EE3
How would you rate the level of collaboration and partnership between oil and gas companies, government entities, and local communities in the GCC in the development and execution of ESG integration strategies?	EE4

To what extent do you believe that stakeholder engagement is integrated into the overall business strategy of oil and gas companies in the GCC to achieve successful ESG outcomes?	EE5
Effectiveness of ESG Implementation	**FF**
To what extent do you believe that the current ESG implementation practices within the oil and gas industry in the GCC effectively address environmental concerns, aligning with global sustainability goals?	FF1
How well do you perceive the social responsibility initiatives undertaken by oil and gas companies in the GCC as part of their ESG integration, positively impacting local communities and stakeholders?	FF2
In your opinion, to what extent are governance practices within the oil and gas industry in the GCC contributing to the successful integration of ESG principles and ensuring accountability?	FF3
How effectively do you believe oil and gas companies in the GCC are leveraging ESG considerations to enhance their long-term financial performance and resilience?	FF4
To what extent do you think the communication and reporting of ESG performance by oil and gas companies in the GCC are clear, transparent, and accountable to various stakeholders?	FF5

Table 4.3.List of factors and their codes used for the study

A descriptive statistical study requires a normal distribution. In data with a regularly distributed distribution, the mean denotes the data's central tendency. However, many medical literatures use the standard deviation (SD) and standard error of the mean (SEM) in addition to the mean to describe statistical analysis results since the mean alone is insufficient when attempting to explain the structure of the distribution (Lee, et al., 2015). Mathematicians call the mean the arithmetic average of several scores. The numerical output values for Kurtosis and Skewness should fall between -2.5 and +2.5. In the current work, the multivariate normal distribution is analyzed using skewness and Kurtosis. It is acknowledged that a normal univariate distribution is shown by the asymmetry and kurtosis values between -2 and +2. (George & Mallery, 2010). The Skewness and Kurtosis values in the below table demonstrates that most of the values that most of the Skewness and Kurtosis of the construct's numerical measures lie between -2 and +2 but some of the values lie beyond the range -2 and +2. The traditional normal bell-shaped curve represents the approximate normal distribution that the data should resemble in accordance with the statistical assumption. SPSS 29 was employed in the current investigation to statistically corroborate the same.

	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AA1	6.07	0.732	0.536	-1.084	0.145	2.856	0.288
AA2	6.00	0.822	0.675	-1.046	0.145	2.208	0.288
AA3	6.08	0.742	0.551	-1.076	0.145	2.685	0.288
AA4	6.37	0.673	0.453	-1.162	0.145	2.242	0.288
AA5	6.32	0.776	0.601	-1.183	0.145	1.305	0.288
BB1	5.93	1.017	1.034	-1.239	0.145	2.364	0.288
BB2	6.06	0.982	0.964	-1.368	0.145	2.791	0.288
BB3	5.73	1.172	1.373	-0.632	0.145	-0.455	0.288
BB4	6.42	0.843	0.711	-1.961	0.145	4.659	0.288
BB5	6.36	0.735	0.541	-0.672	0.145	-0.872	0.288
CC1	6.35	0.754	0.568	-0.683	0.145	-0.932	0.288
CC2	6.50	0.659	0.435	-0.969	0.145	-0.209	0.288
CC3	6.35	0.637	0.406	-0.464	0.145	-0.671	0.288
CC4	6.26	0.618	0.382	-0.230	0.145	-0.600	0.288
CC5	6.40	0.590	0.348	-0.406	0.145	-0.691	0.288
DD1	5.70	1.265	1.601	-1.220	0.145	1.146	0.288
DD2	5.70	1.032	1.064	-0.238	0.145	-0.562	0.288
DD3	5.50	1.383	1.912	-0.634	0.145	-0.716	0.288
DD4	5.49	1.420	2.018	-0.671	0.145	-0.773	0.288
DD5	5.32	1.311	1.718	-0.550	0.145	-0.628	0.288
EE1	5.78	1.101	1.212	-1.535	0.145	3.002	0.288
EE2	5.72	1.249	1.560	-1.185	0.145	1.135	0.288
EE3	5.69	1.065	1.135	-0.460	0.145	0.189	0.288
EE4	5.47	1.362	1.854	-0.588	0.145	-0.722	0.288
EE5	5.48	1.442	2.081	-0.680	0.145	-0.826	0.288
FF1	6.40	0.798	0.636	-1.598	0.145	3.829	0.288
FF2	6.21	0.979	0.959	-1.913	0.145	5.077	0.288
FF3	6.29	0.797	0.636	-1.274	0.145	2.509	0.288
FF4	5.90	1.110	1.231	-1.186	0.145	1.232	0.288
FF5	6.27	0.877	0.769	-1.942	0.145	5.810	0.288

Table 4.4. Descriptive statistical analysis of the data

The data's degree of spread may be determined using standard deviations. While a standard deviation less than one might be considered moderate, one larger than one frequently indicates a rather considerable amount of variance. According to Kauffman (2014), distributions with a coefficient of variation greater than one are considered to have high variance, meaning the value is spread further from the mean, whereas distributions with a standard deviation less than one are considered to have low variance, meaning the value is

closer to the mean. In this study, the mean and standard deviation of thirty variables were examined.

4.5. Exploratory Factor Analysis

The technique of exploratory factor analysis (EFA) is multifaceted and intricate. The purpose of this paper is to compile data into a single piece so that practitioners and scholars may decide on "best practices" for exploratory factor analysis and comprehend the range of options offered by widely used software programs. In the social sciences, exploratory factor analysis (EFA) is a frequently used and extensively employed statistical method. EFA is a difficult process with many possibilities and few set rules. Certain software programs use different nomenclature for different options, and many times there is a lack of clarity on a particular option (Costello & Osborne, 2005).

This research study uses SPSS 29.0 to conduct an exploratory factor analysis; the findings are displayed in the tables below. The problematic factor loadings observed in the Rotated Component Matrix led to the deletion of a few variables throughout the factor analysis. The variables that were tested for factor analysis: AA1, AA2, AA3, AA4, AA5, BB1, BB2, BB3, BB4, BB5, CC1, CC2, CC3, CC4, CC5, DD1, DD2, DD3, DD4, DD5, EE1, EE2, EE3, EE4, EE5, FF1, FF2, FF3, FF4, and FF5.

The presence of linear combinations is confirmed and proof that the observed correlation matrix differs statistically from a single matrix is provided by Bartlett's Test of Sphericity. The shared variance in items is measured using the Kaiser-Meyer-Olkin Sampling Adequacy Test. Scholars provide insight on whether the sample size for KMO values is enough for EFA. A value deemed acceptable for factor analysis is indicated if the KMO value, which is a binary value between 1 and 0, is 0.6 or above (Lutfi, 2022).

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.704
Bartlett's Test of Sphericity	Approx. Chi-Square	6647.024
	df	435
	Sig.	0.000

Table 4.5. KMO and Bartlett's Test results finding for the data

According to the findings of the KMO and Barlett's test conducted on SPSS 29.0, the sampling is adequate since the KMO value is 0.704, which is larger than 0.6. Barlett's Test of Sphericity yielded a significant result of 0.000, which is considerably less than 0.05. This indicates that the data is normal and appropriate for additional study.

Table 4.13 below displays the Eigenvalues before and after extraction for a total of 30 linear components in the data. Furthermore, the percentage of the variation (percent variance) indicates the percentage of the data variability that can be attributed to each element. The researcher looks at the % variance value for each component; higher percentage variance values indicate that a factor explains a higher percentage of the variability. Because of this, the percentage variance numbers may be used by the researcher to determine which components are important. The total variation explained by all of the analysis's factors is the percent variance communality value.

Total Variance Explained						
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
S.no.	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.31	21.02	21.02	4.17	13.90	13.90
2	3.84	12.80	33.82	3.78	12.60	26.50
3	3.45	11.50	45.32	3.09	10.31	36.81
4	2.71	9.05	54.37	2.88	9.59	46.39
5	2.44	8.14	62.51	2.59	8.64	55.03
6	1.53	5.09	67.60	2.03	6.78	61.81
7	1.23	4.10	71.70	1.88	6.26	68.08
8	1.08	3.61	75.31	1.71	5.71	73.79
9	1.00	3.35	78.65	1.46	4.87	78.65

Table 4.6. Total analysis factors for the total variance

Communality demonstrates how well the retained components predict this variable. If this variable were regressed on the components that were retained, the result would resemble the R-Squared. But keep in mind that the correlation matrix is not the sole basis for this. As every variance is assumed to be common at the outset of principal component analysis, the communalities are all 1 prior to extraction. The communalities listed in the designated column. The data structure's common variance is reflected in the extraction. The communalities following extraction show the degree of variance in each variable that can be explained by the retained components. In other words, more information will be recovered the greater the communality (nearer to 1). A communality of at least 0.40 is a useful metric for component analysis. Since no data was gathered at the start of the factor analysis, the initial value of communality for each variable is set to 1.00, or 100% (Analytics INN, 2020).

Communalities		
	Initial	Extraction
AA1	1.000	0.892
AA2	1.000	0.794
AA3	1.000	0.887
AA4	1.000	0.767
AA5	1.000	0.818
BB1	1.000	0.677
BB2	1.000	0.801
BB3	1.000	0.801
BB4	1.000	0.596
BB5	1.000	0.550
CC1	1.000	0.725
CC2	1.000	0.709
CC3	1.000	0.648
CC4	1.000	0.676
CC5	1.000	0.791
DD1	1.000	0.857
DD2	1.000	0.823
DD3	1.000	0.922
DD4	1.000	0.952
DD5	1.000	0.845
EE1	1.000	0.830
EE2	1.000	0.866
EE3	1.000	0.812

EE4	1.000	0.780
EE5	1.000	0.806
FF1	1.000	0.740
FF2	1.000	0.813
FF3	1.000	0.778
FF4	1.000	0.787
FF5	1.000	0.852

Table 4.7. Communalities - Extraction Method: Principal Component Analysis

A scree plot is a representation of factor eigenvalues ordered from the left to the right side of the plot in descending order of magnitude in exploratory factor analysis (EFA). The goal is to locate the point of inflexion, or where the factor curve flattens, in order to determine the maximum number of factors that may be kep (Ledesma, et al., 2015).
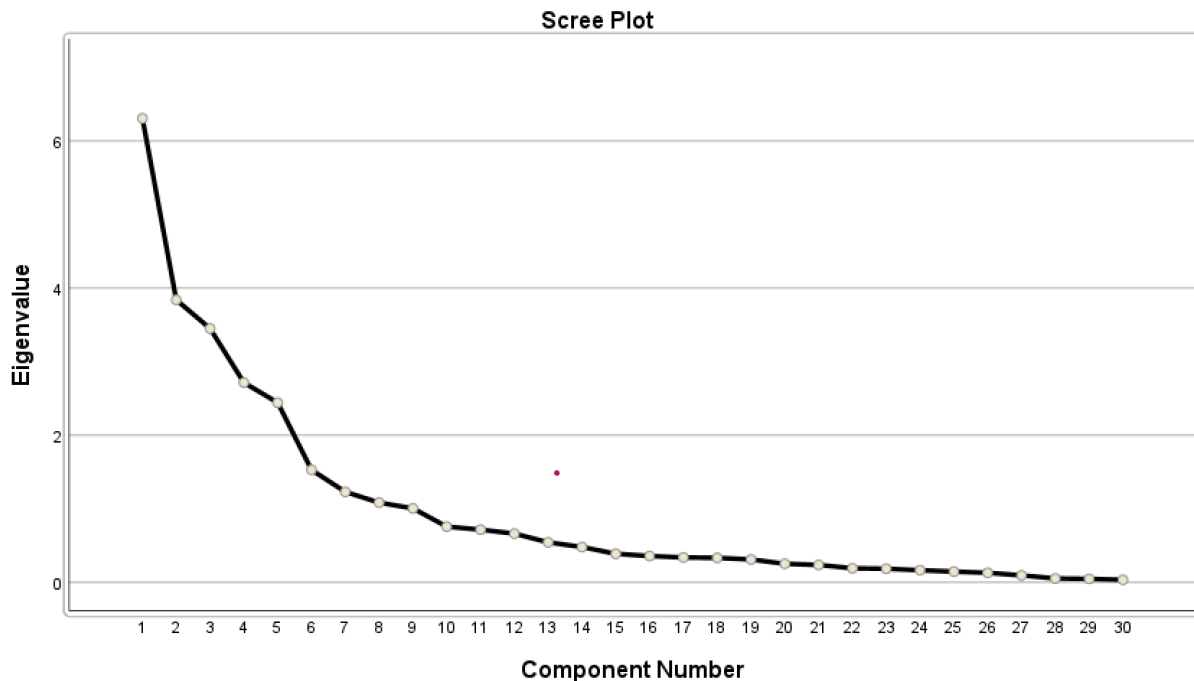

Figure 4.2. Eigen value for the component number

Table 4.8 below illustrates the Rotated Component Matrix and provides a list of factor loadings for each component type. Factor loadings greater than 0.5 were taken into account. Five elements in all are loaded across all six components. Reducing the number of factors

on which the variables under study have large loadings is the goal of rotation. While it simplifies the understanding of the analysis, rotation really makes no changes.

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	5	6
AA1			0.919			
AA2			0.871			
AA3			0.920			
AA4			0.741			
AA5			0.656			
BB1	0.755					
BB2	0.809					
BB3	0.821					
BB4	0.697					
BB5	0.661					
CC1		0.799				
CC2		0.746				
CC3		0.176				
CC4		0.716				
CC5		0.404				
DD1				0.903		
DD2				0.815		
DD3				0.937		
DD4				0.966		
DD5				0.902		
EE1						0.653
EE2						0.767
EE3						0.718
EE4						0.251
EE5						0.163
FF1					0.849	
FF2					0.893	
FF3					0.853	
FF4					0.540	
FF5					0.903	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 8 iterations.						

Table 4.8 Rotated Component Matrix analysis

4.6. Testing Hypothesis H_a

The null hypothesis (H0$_a$) for this section is that there is no significant difference in the environmental degradation of ESG and current ESG implementation practices in UAE based companies in the GCC region.

The variables chosen to test this hypothesis were AA1(contribution of the oil and gas industry in the GCC region to environmental degradation) and FF1 (extent to which the current ESG implementation practices within the oil and gas industry in the GCC effectively address environmental concerns, aligning with global sustainability goals).

Ranks				
AA1			N	Mean Rank
FF1	Somewhat Disagree		3	61.17
	Neutral		6	133.83
	Somewhat Agree		31	148.08
	Agree		173	145.23
	Strongly Agree		71	137.59
	Total		284	

Table 4.9. Factors AA1 and FF1 responses ranks

Table 4.10, demonstrates the test statistics for the Kruskal-Wallis Test from where the researcher will come to the conclusion for the hypotheses testing.

Test Statistics[a,b]	
	FF1
Kruskal-Wallis H	4.512
df	4
Asymp. Sig.	0.341
a. Kruskal Wallis Test	
b. Grouping Variable: AA1	

Table 4.10. Kruskal-Wallis Test for FF1 factor

As shown in the above Table, the asymptotic significance, or the p value for the independent variables FF1 (p = 0.341), is greater than 0.05 at a confidence interval of 95%, implying that the null hypothesis is accepted and contribution of the oil and gas industry in the GCC region

4.7. Testing Hypothesis H_b

The null hypothesis ($H0_b$) for this section is that there is no significant difference in the implementation of conservation measures and current ESG implementation between Oil & Gas Companies in UAE.

KW Test was employed to the variables chosen to test this hypothesis were AA2(effectiveness of existing conservation measures implemented by the oil and gas industry in the GCC to address environmental concerns in alignment with ESG standards), AA4 (extent to which regulatory frameworks in the GCC effectively promote and enforce environmental conservation practices within the oil and gas industry, considering ESG principles) and FF1.

Ranks				
FF1			N	Mean Rank
AA2	Disagree		1	134.50
	Somewhat Disagree		1	134.50
	Neutral		4	162.63
	Somewhat Agree		28	173.96
	Agree		94	137.40
	Strongly Agree		156	139.51
	Total		284	
AA4	Disagree		1	220.50
	Somewhat Disagree		1	86.00
	Neutral		4	220.50
	Somewhat Agree		28	157.30
	Agree		94	141.28
	Strongly Agree		156	138.44
	Total		284	

Table 4.11. Factors AA2 and AA4 responses ranks

Table 4.12, demonstrates the test statistics for the Kruskal-Wallis Test from where the researcher will come to the conclusion for the hypotheses testing.

Test Statistics[a,b]		
	AA2	AA4
Kruskal-Wallis H	5.958	8.008
df	5	5
Asymp. Sig.	0.310	0.156
a. Kruskal Wallis Test		

b. Grouping Variable: FF1

Table 4.12. Kruskal-Wallis Test for AA2 and AA4 factor

As shown in Table 4.12, the asymptotic significance, or the p value for the independent variables AA2 (p = 0.310) and AA4 (p = 0.156), is greater than 0.05 at a confidence interval of 95%, implying that the null hypothesis is accepted and effectiveness of existing In conclusion, there is no significant difference in the implementation of conservation measures and current ESG implementation between Oil & Gas Companies in UAE.

4.8. Testing Hypothesis H_c

The null hypothesis ($H0_c$) for this section is that there is no significant difference in the effectiveness of CSR programs and the social responsibility initiatives between oil and gas companies in the UAE.

KW Test was employed to the variables chosen to test this hypothesis were BB3 (perception that the oil and gas companies in the GCC to be addressing social issues and community needs through their CSR programs) and FF2 (social responsibility initiatives undertaken by oil and gas companies in the GCC as part of their ESG integration, positively impacting local communities and stakeholders).

Ranks				
FF2			N	Mean Rank
BB3	Disagree		5	189.10
	Somewhat Disagree		2	78.00
	Neutral		7	128.14
	Somewhat Agree		29	141.88
	Agree		112	148.92
	Strongly Agree		129	137.04
	Total		284	

Table 4.13. Factors FF2 and BB3responses ranks

Table 4.14. represents the test statistics for the Kruskal-Wallis Test from where the researcher will come to the conclusion for the hypotheses testing.

Test Statistics[a,b]	
	BB3
Kruskal-Wallis H	4.646
df	5
Asymp. Sig.	0.461
a. Kruskal Wallis Test	
b. Grouping Variable: FF2	

Table 4.14. Kruskal-Wallis Test for BB3 factor

As shown in the above Table, the asymptotic significance, or the p value for the independent variables BB3 (p = 0.416) is greater than 0.05 at a confidence interval of 95%, implying that the null hypothesis is accepted

4.9. Testing Hypothesis H_d

The null hypothesis ($H0_d$) for this section is that there is no significant relationship between the level of community engagement by oil and gas companies in the UAE and positive stakeholder perceptions of their social responsibility efforts.

The variables chosen to test this hypothesis are BB1, BB2, BB4, BB5, and EE1. These variables were tested for significant relationships using Spearman's Correlation Test.

The table shows Spearman's correlation coefficient between effectiveness of community engagement efforts of the oil and gas industry in the GCC considering the promotion of social inclusion and collaboration with local stakeholders and the participation of key stakeholders in the development and implementation of ESG strategies within the oil and gas industry is 0.367, which indicates a weak positive correlation as it states in the rule of thumb for Spearman's correlation, any coefficient value between 0.1 and 0.49 is a weak correlation (Al-Hameed, 2022).

Correlations		
		BB1
Spearman's rho	EE1	.367[**]
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 4.15. Spearman's correlation between the EE1 and BB1variables

Next, the variable BB2 (active engagement of oil and gas companies in social responsibility initiatives to benefit local communities) and EE1.

The below table shows that according to the Spearman's Correlation coefficient the variables BB2 and EE1 have a weak correlation of 0.338.

Correlations		
		BB2
Spearman's rho	EE1	.338**
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 4.16. Spearman's correlation between the EE1 and BB2 variables

The variables BB4 (transparency and communication of the social responsibility initiatives undertaken by the oil and gas industry in the GCC, including their impact on local communities and societal well-being) and EE1 were next put to test the correlation using the Spearman's correlation test.

The below table shows that according to the Spearman's Correlation coefficient the variables BB4 and EE1 have a weak correlation of 0.191.

Correlations		
		BB4
Spearman's rho	EE1	.191**
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 4.17. Spearman's correlation between the EE1 and BB4 variables

The variables BB5 (demonstration of commitment to ethical business practices and contribute positively to the social fabric of the communities in which they operate by oil and gas companies) and EE1 were finally put to test the correlation using the Spearman's correlation test.

The below table shows that according to the Spearman's Correlation coefficient the variables BB5 and EE1 have a weak correlation of 0.163.

Correlations	
	BB5

Spearman's rho	EE1	.163**
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 4.18. Spearman's correlation between the EE1 and BB5 variables

As discussed, all the correlation coefficient values between the independent variables BB1, BB2, BB4 and BB5 and the dependent variable, EE1 are all between 0.1 and 0.49, the correlation is weak. Indicating an overall weak relationship, consequently accepting the null hypothesis.

4.10. Testing Hypothesis H_e

The null hypothesis ($H0_e$) for this section is that there is no significant association between the governance structures of oil and gas companies in the UAE and the ethical decision-making processes within these organizations.

The variables chosen to test this hypothesis are CC1, CC2, CC3, CC4, and FF3. These variables were tested for significant relationships using Spearman's Correlation Test.

ESG principles (CC1) and governance practices within the oil and gas industry in the GCC contributing to the successful integration of ESG principles and ensuring accountability (FF3) is -0.019, indicating a negative weak, in fact, insignificant correlation resources.

Correlations		
		CC1
Spearman's rho	FF3	-0.019
The correlation is significant at the 0.01 level (two-tailed).		

Table 4.19. Spearman's correlation between the FF3 and CC1 variables

The variable CC2 (transparency of governance structures and decision-making processes within GCC oil and gas businesses, notably in terms of environmental conservation efforts and adherence to ESG norms) was then correlated with FF3.

The below table shows that according to the Spearman's association coefficient, the variables CC2 and FF3 have a negative, but small, association of -0.038.

Correlations	
	CC2

Spearman's rho	FF3	-0.038
Correlation is significant at the 0.05 level (two-tailed).		

Table 4.20. Spearman's correlation between the FF3 and CC2 variables

Next, the variable CC3 (accountability refers to the leadership and management of GCC oil and gas corporations for the environmental impact of their activities, taking ESG criteria into account) and FF3 are then introduced.

The below table shows that according to the Spearman's Correlation coefficient the variables CC3 and FF3 have a negatively weak, or insignificant correlation of -0.034.

Correlations		
		CC3
Spearman's rho	FF3	-0.034
Correlation is significant at the 0.05 level (two-tailed).		

Table 4.21. Spearman's correlation between the FF3 and CC3 variables

The variables CC4 (governance practices within the oil and gas industry in the GCC are effective in fostering a culture of compliance with environmental regulations and conservation goals) and FF3 were finally put to test the correlation using the Spearman's correlation test.

The below table shows that according to the Spearman's Correlation coefficient for the variables CC3 and FF3 have an insignificant correlation of 0.001.r

Correlations		
		CC4
Spearman's rho	FF3	0.001
Correlation is significant at the 0.01 level (two -tailed).		

Table 4.22. Spearman's correlation between the FF3 and CC4 variables

As previously discussed, all of the correlation coefficient values between the independent variables CC1, CC2, CC3, and CC4 and the dependent variable, FF3, are between 0.1 and 0.49, with the majority being negative, indicating that the link is weak, if not

inconsequential. indicating an overall weak association, and hence adopting the null hypothesis.

4.11. Testing Hypothesis H_f

The null hypothesis (H0f) for this section is that there is no significant relationship between the level of regulatory compliance among UAE oil and gas enterprises and their adherence to ethical decision-making processes. The variables chosen to test this hypothesis are CC2 and CC4. These variables were tested for significant relationships using Spearman's Correlation Test.

The below table shows that according to the Spearman's Correlation coefficient for the variables CC2 and CC4 have a negatively weak, rather, insignificant correlation of 0.161.

Correlations		
		CC4
Spearman's rho	CC2	.161**
**. Correlation is significant at the 0.01 level (two-tailed).		

Table 4.23. Spearman's correlation between the CC2 and CC4 variables

As discussed, all the correlation coefficient values between the independent variable CC4 and the dependent variable, CC2 are between 0.1 and 0.49, the correlation is weak. Indicating an overall weak relationship, consequently accepting the null hypothesis.

4.12. Testing Hypothesis H_g

The null hypothesis (H0g) for this section states that there is no significant association between perceived barriers to ESG integration and long-term financial performance and resilience in oil and gas enterprises.

The variables used to test this hypothesis are DD1, DD2, DD3, DD4, DD5, and FF4. The Spearman's Correlation Test was used to determine whether these variables had any significant correlations.

Correlations		
		DD1
Spearman's rho	FF4	.135*
*. Correlation is significant at the 0.05 level (two-tailed).		

Table 4.24. Spearman's correlation between the FF4 and DD1 variables

The below table shows that according to the Spearman's Correlation coefficient the variables DD2 and FF4 have a weak correlation of 0.151.

Correlations		
		DD2
Spearman's rho	FF4	.151*
*. Correlation is significant at the 0.05 level (two-tailed).		

Table 4.25. Spearman's correlation between the FF4 and DD2 variables

The below table shows that according to the Spearman's Correlation coefficient the variables DD3 and FF4 have a weak correlation of 0.212.

Correlations		
		DD3
Spearman's rho	FF4	.212**
**. Correlation is significant at the 0.01 level (two-tailed).		

Table 4.26. Spearman's correlation between the FF4 and DD3 variables

The below table shows that according to the Spearman's Correlation coefficient the variables DD4 and FF4 have a weak correlation of 0.183.

Correlations		
		DD4
Spearman's rho	FF4	.183**
**. Correlation is significant at the 0.01 level (two-tailed).		

Table 4.27. Spearman's correlation between the FF4 and DD4 variables

The below table shows that according to the Spearman's Correlation coefficient the variables DD5 and FF4 have a weak correlation of 0.146.

Correlations		
		DD5
Spearman's rho	FF4	.146*
*. Correlation is significant at the 0.05 level (2-tailed).		

Table 4.28. Spearman's correlation between the FF4 and DD2 variables

As previously noted, all of the correlation coefficient values between the independent variables DD1, DD2, DD3, DD4, and DD5 and the dependent variable FF4 range between 0.1 to 0.49, indicating that the link is weak. indicating an overall weak association, and hence adopting the null hypothesis.

4.13. Testing Hypothesis H_h

The null hypothesis (H0h) for this section is that there is no significant association between short-term financial pressures and the perceived conflict between financial aims and long-term ESG objectives, as well as long-term financial success and resilience in UAE oil and gas enterprises.

In the following investigation, the variables were investigated using multiple regression analysis. Multiple regression analysis was performed to determine the interdependence of independent and dependent variables and to generate the results.

Coefficients[a]						
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1 (Constant)	5.209	0.260		20.004	0.000	
DD4	0.127	0.046	0.162	2.759	0.006	
a. Dependent Variable: FF4						

Table 4.29. Independent DD4 and dependent FF4 variables t test analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.162[a]	0.026	0.023	1.097
a. Predictors: (Constant), DD4				

Table 4.30. DD4 and FF4 factors regression analysis

The level of significance, p-value is 0.006, which < 0.05, which is the result at 95% confidence interval, implying that, according to the rule of thumb of multiple regression analysis, the null hypothesis is rejected. Hence, short term financial pressures and the perceived conflict between financial goals and long term ESG objectives and long-term

financial performance and resilience of oil and gas companies in the UAE have a significant relationship.

4.14. Testing Hypothesis H_i

This section's null hypothesis (H0i) states that there is no substantial association between stakeholder perspectives, governance frameworks, and ethical decision-making processes in UAE oil and gas businesses.

The multiple regression analysis has been carried out in the SPSS 29.0 version. The independent variable EE (stakeholder perspectives and effective governance structures) – a computed compiled variable derived from EE1, EE2, EE3, EE4, and EE5 and Dependent variable, FF5 (ethical decision-making processes within Oil and Gas companies in UAE) for their respective questions in questionnaire in the SPSS software itself.

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.730	0.305		22.099	0.000
EE	-0.082	0.053	-0.091	-1.542	0.124
a. Dependent Variable: FF5					

Table 4.31. Independent EE and dependent FF5 variable t test analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.091[a]	0.008	0.005	0.875
a. Predictors: (Constant), EE				

Table 4.32. EE and FF5 factors regression analysis

Significance value is the value that has been mainly considered to analyze for interpretation. Since the confidence interval in this study is 95%. The level of significance value should be below 0.05. Generally, the null hypothesis is rejected if the significance value, p-value = 0.124, is greater than 0.05. The null hypothesis is rejected if Sig. value > 0.05. Accepting the null hypothesis indicates that there is no relationship between the two variables, i.e., EE and FF5 do not share a correlation.

4.15. Testing Hypothesis H$_j$

The null hypothesis (H0$_j$) for this section is that there is no significant influence of stakeholders' perceptions of governance structures on the ethical decision-making processes within oil and gas companies in the UAE.

The variables chosen to test this hypothesis are EE (stakeholder perspectives and effective governance structures) and FF5 (ethical decision-making processes). These variables were tested for significant relationships using Spearman's Correlation Test.

The below table shows that according to the Spearman's Correlation coefficient the variables EE and FF5 have a negatively weak, rather, insignificant correlation of -0.118.

Correlations		
		EE
Spearman's rho	FF5	-.118*
*. Correlation is significant at the 0.05 level (2-tailed).		

Table 4.33. Spearman's correlation of EE and FF5 factors

As previously discussed, all coefficient values between the independent variable EE and the dependent variable FF5 have correlations ranging from 0.1 to 0.49, indicating a weak relationship. indicating an overall weak association, and hence adopting the null hypothesis. As a result, stakeholders' opinions of governance structures have no substantial influence on ethical decision-making processes inside UAE-based oil and gas enterprises.

4.16. Testing Hypothesis H$_k$

The null hypothesis (H0$_k$) for this section is that there is no significant difference technological innovations and industry best practices and the perceived effectiveness of ESG (Environmental, Social, and Governance) implementation in the oil and gas companies of the UAE.

Friedman's Tests are frequently used to identify differences between ordinal data. This exam was administered with SPSS 29.0. The following table displays the Friedman Test's descriptive statistics.

Descriptive Statistics						
	N	Mean		Minimum	Maximum	Percentiles

			Std. Deviation			25th	50th (Median)	75th
FF	284	6.21	0.683	3	7	6.00	6.40	6.80
AA5	284	6.32	0.776	4	7	6.00	6.00	7.00

Table 4.34. Descriptive statistics of the FF and AA5 factors

The Test Statistics table in the table below shows the Friedman test's final result as well as whether there was a statistically significant difference between the mean ranks of the associated groups.

Test Statistics[a]	
N	284
Chi-Square	7.806
df	1
Asymp. Sig.	0.005
a. Friedman Test	

Table 4.35. Friedman test for FF and AA5 factors

The study's test statistics result ($p = 0.005 < 0.05$) rejects the null hypothesis and supports the alternative hypothesis. The result is that the null hypothesis is rejected and the alternative hypothesis is accepted.

4.17. Testing Hypothesis H_l

The null hypothesis ($H0_l$) for this section is that there is no significant association between the level of stakeholder engagement and the perceived effectiveness of ESG implementation within Oil and Gas companies of the UAE.

Coefficients[a]						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.409	0.232		27.578	0.000
	EE2	0.025	0.051	0.047	0.495	0.621
	EE3	-0.051	0.063	-0.079	-0.800	0.424
	EE4	-0.010	0.034	-0.019	-0.279	0.780
a. Dependent Variable: FF						

Table 4.36. Independent EE and Dependent FF variables t test analysis

Model summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.062[a]	0.004	-0.007	0.685
a. Predictors: (Constant), EE4, EE2, EE3				

Table 4.37. EE variables regression analysis

The significance value is the value that has been primarily evaluated for analysis and interpretation. The confidence interval in this study is 95%. The level of significance should be less than 0.05. In general, the null hypothesis is rejected if the p-value (EE2 = 0.621, EE3 = 0.424, and EE4 = 0.780) is larger than 0.05. The null hypothesis is rejected if the Sig. value is greater than 0.05. Rejecting the null hypothesis shows that there is a relationship between the two variables, i.e., EE2, EE3, EE4, and FF are significantly associated.

4.18. Testing Hypothesis H_m

The null hypothesis ($H0_m$) for this section is that there is no significant correlation between the level of regulatory compliance and the perceived effectiveness of ESG implementation within Oil and Gas companies of the UAE.

The below table shows that according to the Spearman's Correlation coefficient the variables FF and CC4 have a negatively weak, rather, insignificant correlation of -0.015.

Correlations		
		CC4
Spearman's rho	FF	-0.015

Table 4.38. Spearman's correlation of FF and CC4 factors

As previously discussed, all coefficient values between the independent variable CC4 and the dependent variable FF have correlations ranging from 0.1 to 0.49, indicating a weak relationship. indicating an overall weak association, and, hence adopting the null hypothesis.

4.19. Summary of Hypotheses Testing

Hypothesis	Tests Applied	Result
Environmental Impact and Conservation		

H_a	The null Hypothesis (H0$_a$): There is no significant difference in the environmental degradation of ESG and current ESG implementation practices in UAE based companies in the GCC region.	Kruskal Wallis Test	Accepted
	Alternative Hypothesis (H1$_a$): The oil and gas companies in UAE have significant difference environmental degradation and current ESG implementation in oil and gas companies of the UAE.		Rejected
H_b	The null Hypothesis (H0$_b$): There is no significant difference in the implementation of conservation measures and current ESG implementation between Oil & Gas Companies in UAE	Kruskal Wallis Test	Accepted
	Alternative Hypothesis (H1$_b$): The Oil & Gas Companies in UAE exhibit a significant difference of conservation measures the current ESG implementation between Oil & Gas companies.		Rejected
Social Responsibility and Community Relations			
H_c	The null hypothesis (H0c): There is no significant difference in the effectiveness of corporate social responsibility (CSR) programs and social responsibility initiatives across UAE-based oil and gas businesses.	Kruskal Wallis Test	Accepted
	Alternative Hypothesis (H1$_c$): There is a significant different between CSR programs and the social responsibility initiatives in oil and gas companies of the UAE.		Rejected
H_d	The null Hypothesis (H0$_d$): There is no significant relationship between the level of community engagement by oil and gas companies in the UAE and positive stakeholder perceptions of their social responsibility efforts.	Spearman's Correlation Coefficient	Accepted

	Alternative Hypothesis (H1$_d$): There is a significant relationship between the level of community engagement by oil and gas companies in the UAE and positive stakeholder perceptions of their social responsibility efforts.		Rejected
	Governance Structure and Ethical Decision-Making		
H$_e$	The null Hypothesis (H0$_e$): There is no significant association between the governance structures of oil and gas companies in the UAE and the ethical decision-making procedures within these companies.	Spearman's Correlation Coefficient	Accepted
	Alternative Hypothesis (H1$_e$): A significant association exists between the governance structures of the oil and gas companies in the UAE and the ethical decision-making processes within these organizations.		Rejected
H$_f$	The null Hypothesis (H0$_f$): There is no significant correlation between the level of regulatory compliance by the oil and gas companies in the UAE and their adherence to ethical decision-making processes.	Spearman's Correlation Coefficient	Accepted
	Alternative Hypothesis (H1$_f$): The level of regulatory compliance by oil and gas firms in the UAE have a high correlation between their level of regulatory compliance and their adherence to ethical decision-making processes.		Rejected
	Barriers to ESG Integration		
H$_g$	The null Hypothesis (H0$_g$): There is no significant relationship between the perceived barriers to ESG integration and long-term financial performance and resilience of the oil and gas companies.	Spearman's Correlation Coefficient	Accepted
	Alternative Hypothesis (H1$_g$): There is a significant relationship between the perceived barriers to ESG integration and long-term financial performance and resilience in the oil and gas companies.		Rejected

	The null Hypothesis (H0$_h$): There is no significant relationship between short term financial pressures and the perceived conflict between financial goals and long term ESG aims, long-term financial success, and resilience of UAE-based oil and gas firms.	Multiple Regression Analysis	Rejected
H$_h$	Alternative Hypothesis (H1$_h$): Short term financial pressures and the perceived conflict between financial goals and long term ESG objectives and long term financial performance and resilience in the oil and gas companies in the UAE have a significant relationship.		Accepted
Stakeholder Perspectives and Strategies			
	The null Hypothesis (H0$_i$): There is no significant relationship between stakeholder perspectives, governance structures, and ethical decision-making processes within oil and gas companies in the UAE.	Multiple Regression Analysis	Rejected
H$_i$	Alternative Hypothesis (H1$_i$): Stakeholder perspectives and effective governance structures are significantly related to ethical decision-making processes within oil and gas companies in the UAE.		Accepted
	Null Hypothesis (H0$_j$): There is no significant influence of stakeholders' perceptions of governance structures on the ethical decision-making processes within oil and gas companies in the UAE.	Spearman's Correlation Coefficient	Accepted
H$_j$	Alternative Hypothesis (H1$_j$): Stakeholders' positive perceptions of governance structures significantly contribute to ethical decision-making processes within oil and gas companies in the UAE.		Rejected
Effectiveness of ESG Implementation			

H_k	The null Hypothesis ($H0_k$): There is no significant difference technological innovations and industry best practices and the perceived effectiveness of ESG (Environmental, Social and Governance) implementation in the oil and gas companies of the UAE.	Friedman's Test	Rejected
	Alternative Hypothesis ($H1_k$): Technological innovations and industry best practices are significantly different to the perceived effectiveness of ESG implementation of the oil and gas companies of the UAE.		Accepted
H_l	The null Hypothesis ($H0_l$): There is no significant association between the level of stakeholder engagement and the perceived effectiveness of ESG implementation within the oil and gas companies of the UAE.	Multiple Regression Analysis	Rejected
	Alternative Hypothesis ($H1_l$): Oil and gas companies of the UAE with higher levels of stakeholder engagement perceive ESG implementation significant different to the level of stakeholder engagement.		Accepted
H_m	The null Hypothesis ($H0_m$): There is no significant correlation between the level of regulatory compliance and the perceived effectiveness of ESG implementation within the oil and gas companies of the UAE.	Spearman's Correlation Coefficient	Accepted
	Alternative Hypothesis ($H1_m$): The oil and gas companies in the UAE with higher levels of regulatory compliance perceive ESG implementation as significantly different to the level of regulatory compliance.		Rejected

4.20. Review of Findings

The researcher provides a detailed analysis of the data collected in chapter four. The analysis outcomes are organized into sections where each one of them elaborates on the analysis of all the to test the 12 main hypotheses. The study examines 5 independent variables - environmental impact and conservation, social responsibility and community relations, governance structures and ethical decision making, barriers to ESG integration, stakeholders' perspectives, and strategies and 1 dependent variable - effectiveness of ESG implementation.

The researcher used spearman correlation, MRA, KW Test, and Friedman Test to primarily evaluate the associations and significant differences between independent variables in order to test hypotheses about the challenges of implementing ESG in the UAE's oil and gas industry.

This chapter also addressed the respondent's demographic characteristics. All responders are based in the UAE. The majority of responders have a PG degree and work in mid-level management, with 11-15years of experience in the O&G industry. This chapter's hypothesis testing part examined 13 hypotheses on a variety of themes.

CHAPTER 6. CONCLUSION

The present chapter provides the conclusion of the complete research study. The researcher begins with an observation, which then evolved into a research problem and the need for the research with the support of various literature reviews discussed in chapter two. The objectives and research questions were employed to emphasize the issue. Using a survey questionnaire, the researcher looked into five different elements that influence the efficiency of ESG

The major research goal is to examine the issues associated with ESG integration in UAE-based oil and gas enterprises. To reach a conclusion for this research study, the researcher discovers several factors and investigates their noteworthy differences and relationships.

The nuances of the research methodology, philosophy, paradigm, approach, and strategy are further explored in chapter three. The study's dependent and independent parameters, as well as the conceptual framework and research hypotheses, are all discussed. The third chapter's conclusion discusses an ethical consideration for this project. This study used a deductive strategy, which is consistent with the research technique. The study's target audience including employees from the UAE's oil and gas sector. This research study includes opinions from 31 workers from various O&G firms in Dubai, UAE, in addition to a case study on the factors impacting the success of ESG integration. The principal purpose of the study for the documentation of the evolution of the conceptual framework.

The present study employs positivist and deductive research methodology, which entails a comprehensive evaluation of existing literature, identification of research gaps, and formulation of hypotheses. 284 respondents who work for UAE-based oil and gas companies provided research data for the main study using a questionnaire with a 7-point Likert scale. Chapters four and five include a comprehensive summary of all the statistical tests and hypotheses the researcher used to accomplish the objectives in this research study for a sample size of 284 (main study) and 31 (case study). Both chapters provide a descriptive analysis that was used to describe the sample profile of participants.

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