Gender Equality, Climate Action and Affordable Clean Energy Practices Towards Firm Financial Performance of Oil and Gas PLCs

Dayana Mastura Baharudin, Nurhafizah Kamilah Mohammad Azmi, Haslindar Ibrahim

School of Management, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

Maran Marimuthu

Department of Management and Humanities, Universiti Teknologi PETRONAS, Perak, Malaysia

Suhaily Shahimi

Faculty of Business and Economics, Universiti Malaya, Kuala Lumpur, Malaysia

Email: dayana.mastura@usm.my

Abstract

The purpose of this study is to investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards firm financial performance of the Top 30 Malaysia's Oil and Gas PLCs over a five-year period from 2018 to 2022. This study employed both the conceptual and theoretical framework as the direction of this whole research, where the independent variables are SDG 5 - Gender Equality, SDG 13 - Climate Action and SDG 7 - Affordable and Clean Energy. The dependent variable is related to firm financial performance which are proxied by the Return on Asset (ROA), Return on Equity (ROE) and Tobin's Q. The control variables are represented by Firm Leverage (LEV), Firm Age (AGE) and Firm Size (SIZE). All the variables are supported by the stakeholder theory. Purposive sampling was employed within this descriptive and quantitative study. Secondary data employed was analyzed using the quantitative content analysis and panel data regression analysis as per the STATA v.14 software. The findings reflect significance across all models of

Pooled Ordinary Least Square (OLS), Fixed Effect Model (FE), and Random Effect Model (RE) where the p-value of gender equality, climate action and affordable clean energy are all 0.0000. The novelty of this research in terms of methodological significance is that the data were collected using quantitative content analysis from the integrated and annual reports of the Malaysian PLCs using three scoring indices designed for the oil and gas industry. Novelty in terms of practical significance is that the findings from this research can be applied to the oil and gas PLCs in other countries other than Malaysia.

Keywords: gender equality, climate action, affordable and clean energy, firm financial performance and oil and gas industry

1. Introduction

According to the United Nations 2030 Agenda for Sustainable Development, the 17 SDGs must be accomplished within the next 15 years when this statement was launched in 2016 (as per 2023, there will be 6 to 7 years more to go before 2030 is coming up). The goals emphasize that nobody should be left behind and consider the concerns of both developed and developing nations. The agenda's broad and ambitious focus covers the social, economic, and environmental facets of sustainable development as well as significant issues pertaining to peace, justice, and functioning institutions ("Sustainable Development Goals", 2015).

UN Secretary-General Ban Ki-moon said of the 2030 Agenda for Sustainable Development, "The seventeen Sustainable Development Goals (SDGs) are our shared vision of humanity and a social contract between the world's leaders and the people,"

The eight MDGs, which sought to end extreme poverty and hunger by 2015, achieve universal primary education, advance gender equality and women's suffrage, lower child mortality, boost maternal health, fight AIDS, malaria, and other diseases, ensure environmental sustainability, and create a global partnership for development, are built upon by the 17 SDGs.

Some of the issues that the SDGs aim to address, such as climate change and environmental degradation, population displacement, economic and social inequality, armed conflicts, gender-based violence, tax evasion and corruption, increased risk of certain health issues, and human rights violations, have historically been worsened by the development of the oil and gas industry. In this sense, gender equality, climate action and affordable clean energy can also be implemented in the oil and gas industry as part of their contribution to the sustainable development goal ("Sustainable Development Goals", 2015).

In this research study, from the 17 SDG Goals, the authors have selected 3 SDGs which are SDG 5 - Gender Equality, SDG 13 - Climate Action and SDG 7 - Affordable and Clean Energy.

SDG5's gender equality goal aims to achieve gender parity and give all women and girls the authority they need to ensure equitable access to economic opportunities, employment, education, health care, and other economic growth advantages. Women are frequently underrepresented and have lower employment rates in the oil and gas sector. However, given that Malaysia is a developing nation, it requires a wide range of knowledge to meet labour

standards, expectations, and criteria that can increase gender equality and empower women (UNDP, IFC, & IPIECA, 2017).

Climate action in SDG13 aims to take urgent action to combat climate change and its impact for economics and population growth, combined with reliance on fossil fuels (coal, oil, and gas), have driven the increase in anthropogenic GHG emissions since the start of the industrial age. Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change and the oil and gas industry has a unique role to play in near term and long term (UNDP, IFC, & IPIECA, 2017).

SDG7 aims to ensure that everyone has access to clean, dependable, modern, and affordable energy. Most of the other SDGs cannot be reached without energy, which is a crucial component of sustainable development. In addition, having access to affordable, dependable, sustainable, and contemporary energy is crucial for promoting economic development, employment, education, eradicating poverty, and ensuring public health and safety. Government, business, and civil society all have a part to play in making this a success. Global difficulties demand a strategy that is specific to each nation's and region's unique conditions (UNDP, IFC, & IPIECA, 2017).

This research study is focused on Top 30 Malaysian Oil and Gas PLCs. The reason why I have chosen the Oil and Gas Industry is because these 3 SDGs are the most controversial for the oil and gas industry. Other than that, it is because Malaysia is an oil-producing country and natural gas exporter, the oil and gas sector remains an important part in Malaysia's economic development.

As for this research study, the author would like to study the impact of gender equality, climate action and affordable clean energy practices towards firm financial performances on Oil and Gas PLCs.

Problem Statement

As for SDG 5 - Gender Equality, according to New Straits Times by Rebecca Ponton on October 8, 2019 said that "across the globe, female participation in oil and gas workforces is poor, with estimates suggesting as few as one in five workers is a woman, one of the lowest levels of any major industry". Other than that, the oil and gas business still have one of the lowest percentages of women directors among all major economic sectors. Women are occasionally excluded from consultations between oil and gas companies and local communities; this may be due to traditional cultural restrictions, language barriers, or a lack of gender-sensitivity in the consultation process. This is a problem statement for gender equality, climate action, and affordable clean energy. In addition, women may face greater obstacles because of structural injustices, making it more difficult for them to take advantage of the economic opportunities that come with oil and gas projects and operations. The fact that women are still notably underrepresented in the oil and gas sector, particularly in senior positions, is the final concern for gender equality (UNDP, IFC, & IPIECA, 2017).

For SDG 13 - Climate Action, it is believed that CO2 emissions, of which 80% or more come from the combustion of fossil fuels, are responsible for more than half of the world's warming. A company's infrastructure, assets, operations, and supply chains may be impacted by climate change. Companies are assessing, identifying, and evaluating a wide range of risks, including those that may be influenced by climate change, to increase the resilience of their facilities and local infrastructure. These efforts can be used to plan, implement, and track adaptation and management methods. Due to its physical footprint, the oil and gas industry has a lot of chances to promote the avoidance and restoration of degraded land, which would lower GHG emissions and absorb carbon through natural methods (UNDP, IFC, & IPIECA, 2017).

Furthermore, for SDG 7 - Affordable and Clean Energy, in 2015, 1.1 billion people worldwide lack access to power. Additionally, in 2015, 41% of the world's population—an estimated 2.8 billion people—had to rely on solid fuels like wood, charcoal, and animal dung for heating and cooking. Many people who don't have access to affordable renewable energy reside in developing nations where oil and gas corporations have a long history of operation and are familiar with the unique issues there. In addition, the extraction and transformation of hydrocarbons need a large amount of energy; in 2011, the oil and gas sector consumed 6.9% of the nation's total energy output (UNDP, IFC, & IPIECA, 2017).

Research Questions

1. What are the levels of disclosure of the practices of gender equality, climate action and affordable and clean energy across the Malaysian PLCs?
2. Does the disclosure extent of the practices of gender equality, climate action and affordable and clean energy have an impact towards firm financial performance across the Malaysian PLCs?

Research Objectives

1. To examine the disclosure extent of the practices of gender equality, climate action and affordable and clean energy of Malaysian PLCs.
2. To investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards firm financial performance of Malaysian PLCs.

2. Literature Review

For SDG 5 - Gender Equality, according to the International Renewable Energy Agency's Global Survey in 2018, women make up 32% of all employees working in the worldwide renewable energy sector in 2019 compared to only 22% in the oil and gas sector. Also, according to an IRENA survey, there are fewer women working in scientific, technology, engineering, and mathematics (STEM) fields than there are in non-STEM fields in the renewable energy industry. There are attitudes towards women's roles, cultural and societal conventions, and standard employment procedures (Standal et al. 2020; IRENA 2020; Baruah 2017). Other than that, it also been written in Offshore Technology by Scarlett Evans on

January 3, 2022 said that "a new report from the World Petroleum Council (WPC) and Boston Consulting Group (BCG) has found that the number of women in the oil and gas industry has remained stagnant since 2017 – remaining at 22%. The report, 'Untapped Reserves 2.0: Driving Gender Balance in Oil and Gas', demonstrated that even as commitments to improve diversity have been strengthened, no tangible progress has been made". These previous studies, surveys and journals strengthen the problem statement of gender equality.

For SDG 13 - Climate Action, due to their critical role in the country's economic development, O&G companies in Malaysia are important and crucial. As a result, its operations have both beneficial and negative repercussions, such as the industry's wild expansion and dangerous consequences, which cause pollution, a rise in the greenhouse effect, acid rain, poor water quality, groundwater pollution, and the loss of biodiversity, among other things. This suggests that accidents in the oil and gas sector could have devastating impacts on the industry, the economy, the social environment, and the organisations themselves (Lai, Shad, & Shah, 2021). Malaysia is still largely dependent on fossil fuels for its energy needs (Hannan et al., 2018). Increase of carbon dioxide (CO_2) concentration in the atmosphere which contributes to climate change if it continues to be dependent on fossil fuels. According to the Climate Change Performance Index 2023, it shows the result of Malaysia's rating in GHG Emissions Category which falls to low rating with 40%. It remains at very low in Climate Policy and its Energy Use rating falls to very low.

Furthermore, as for SDG 7 - Affordable and Clean Energy, according to New Straits Times By Reuters on February 3, 2023 said that "Malaysia lacks "strong" renewable energy policies and there are no incentives offered to large-scale renewables. The reason was because the government has struggled to attract investment in large-scale renewable energy projects due to a "sluggish economy" and a lack of "robust policies" to make clean power more attractive than fossil fuels. Because of that, Malaysia seems to have little urgency to meet renewable energy targets".
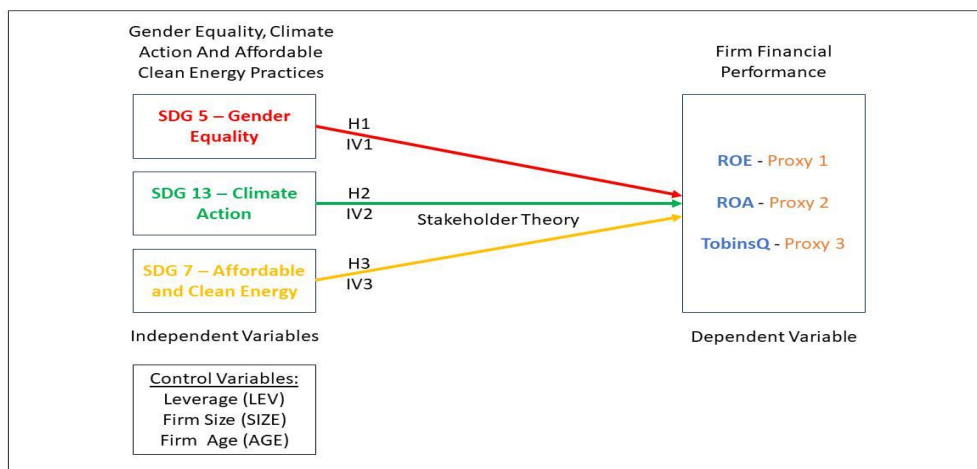
3. Conceptual Framework

Figure 1. Conceptual Framework

Anything that is capable of taking on various or changeable values is a variable. The values may change over time for the same object or person, or they may change simultaneously for numerous objects or people. The dependent variable (also known as the criterion variable), the independent variable (also known as the predictor variable), the moderating variable, and the mediating variable are the four primary categories of variables. The independent variable and dependent variable will both be used in this research project (Sekaran, & Bougie, 2016).

Stakeholder theory, which is related to the conceptual framework above, holds that anyone who is impacted by an organisation or how it operates in any way is a stakeholder. This includes staff members, clients, suppliers, local communities, environmental organisations, governmental organisations, and more (McAbee, 2022). As more to that, the proxy that was chosen for the firm financial performance is related to the stakeholder as the Return on Assets is connected to the internal top management, Return on Equity is connected to the shareholders and Tobin's Q is connected to the market valuation which is the market participant.

Apart from the stakeholder theory, the conceptual framework has three variables which are independent, dependent, and control variables. The independent variables are the cause, and the dependent variable is the effect. In this research study is to test the cause-and-effect relationships between the selected 17 Sustainable Development Goals which are the SDG 5 - Gender Equality, SDG 13 - Climate Action and SDG 7 - Affordable and Clean Energy with the Return on Asset (ROA), Return on Equity (ROE) and the Q ratio (Tobin's Q). In this research study, the control variables are the Leverage (LEV), Firm Size (SIZE) and Firm Age (AGE) where control variables enhance the internal validity of a research study and help establish a correlational or causal relationship and could influence the outcomes of the independent and dependent variables.

The independent variables which are the SDGs are the main point of this research study on the oil and gas companies in Malaysia which will be determined by the dependent variable of ROA, ROE, and Tobin's Q in which the results will determine whether the oil and gas companies in Malaysia are adopting and following the UN SDG 2030 goals.

SDG-5 (Gender equality) upholds gender equality as a foundation for a peaceful, prosperous and sustainable world and seeks to empower women and girls by 2030. The sector can play a significant role in achieving this goal by working with local governments and developing standards and procedures that promote and ensure appropriate female representation and empowerment. Moreover, the industry can finance outreach and awareness programs to motivate girls to pursue education in the STEM fields, with a view to join the oil and gas industry (Albuainain, Kalimugogo, & Alzahrani, 2022).

Access to affordable and clean energy (SDG-7) is one the most important amongst all 17 SDGs. The challenge is to ensure reliable, affordable, and sustainable access to energy for all while protecting the environment from the effects of climate change. The oil and gas industry in uniquely positioned to deliver on this target while at the same time addressing the issue of limiting greenhouse gas (GHG) emissions. The industry will play a pivotal role to ensure an

orderly passage of the energy transition without volatility in energy prices or deterioration of access to energy. Furthermore, the industry can provide the backup energy needed to supplement the intermittent power generation of alternative energies such as wind and solar. Natural gas for example can be an attractive, cost-effective, reliable, and clean transitory fuel that can be used in that regard. Moreover, with the expected increase in population growth, economic development, and energy demand, oil and gas will continue to play a significant role in the energy mix. Therefore, the industry can ensure this continued role while investing smartly in emission abatement technologies, improving efficiency and collaborating to contribute to sustainable development for all (Albuainain, Kalimugogo, & Alzahrani, 2022).

Protecting our planet while simultaneously enabling continued economic development is the most pressing challenge in tackling issues such as climate change, biodiversity, and pollution. The oil and gas industry have a unique role in addressing SDG-13 (Climate action), especially in the context that its specialist knowledge in petroleum geology, resource extraction, and pipeline transmission can contribute towards carbon capture, utilization, and storage (CCUS) opportunities. The Oil and Gas Climate Initiative (OGCI) aims to accelerate the industry response to climate change. The OGCI member companies, represent almost 30% of global operated oil and gas production, explicitly support the Paris Agreement and its aims. Collectively, the oil and gas industry can contribute to SDG13 by investing in carbon removal technologies like CCUS, energy efficiency, natural climate solutions such as forestation and establishing public-private partnerships. The oil and gas industry can develop net-zero emission strategies, invest in research and development for low-emissions fuels and products, as well as other technologies that reduce emissions and increase sustainability. Example of strategies where oil and gas can have significant role to play is the Circular Carbon Economy (CCE) framework, which was endorsed by all G20 members in 2020 as a holistic, integrated, inclusive, and pragmatic approach to managing emissions (Albuainain, Kalimugogo, & Alzahrani, 2022).

A company's ROA will show how well it generates profits from the assets it possesses. An increased ROA over time shows that the business is effectively generating more profit from each dollar invested. A decreasing ROA is a warning sign that the business may be in jeopardy because it suggests the corporation may have overinvested in assets that haven't increased revenue (Fernando, 2023).

ROE is a helpful indicator for assessing a company's investment returns within a specific industry. A greater ROE indicates that a business utilises its shareholders' equity to produce income effectively. Low ROE denotes low earnings relative to shareholders' equity for the business (Hargrave, 2022).

Tobin's Q ratio is assumed to represent a firm's investment or growth opportunities. If Tobin's Q does represent growth opportunities, there should be a positive relationship between the Tobin's Q ratio and future operating performance for a firm. The market value of a company divided by the assets' replacement cost is how we define the Q ratio. The firm's fiscal year-end stock price and the number of outstanding shares is used to calculate the common stock's

market value. Debt and preferred stock are considered to have market values that are identical to their book values. Estimates of replacement cost are made using the book value of the company's assets (Fu, Singhal, & Parkash, 2016).

4. Theoretical Framework

The theoretical framework serves as the cornerstone of the entire deductive research endeavour. It is a network of relationships among variables that have been rationally created, characterised, and elaborated in relation to the problem scenario and have been identified through techniques like interviews, observations, and literature reviews. The theoretical framework and the literature review are related in that the former serves as a strong foundation for the latter's development. That is, based on the results of earlier studies, the literature study determines the variables that may be crucial. This serves as the theoretical model's foundation, along with other conceptually understandable logical relationships. Theoretical framework discusses the theory underpinning these relationships, depicts the nature and direction of the relationships, and portrays and elaborates the link among the variables. A solid theoretical foundation is established by the literature study, and this in turn offers the rational groundwork for the development of testable hypotheses. (Sekaran, & Bougie, 2016).

In his book "Strategic Management: A Stakeholder Approach," R. Edward Freeman first explicitly outlined stakeholder theory in 1984. The concept of treating all parties as equal stakeholders was developed in opposition to the shareholder theory, which maintains that a company's only duty is to maximise profits for its shareholders. However, stakeholder theory says that those investors are only one class of stakeholders that the company should strive to serve. Other stakeholders would include: Employees, Manufacturers/suppliers, Customers, Customers' neighbors and community members, and Governmental bodies (McAbee, 2022).

In the conceptual framework of this research study, the stakeholder theory is the one who holds together all the variables. Return on assets is related to top internal management, while Return on Equity is related to shareholders and the last variable is Tobin's Q is related to market valuation which is market participants. Therefore, ROA, ROE, Tobin's Q are all stakeholders that affected the organization.

5. Methodology

Time series, cross section, and panel data are three different types of data that are typically accessible for empirical research. The same cross-sectional unit is repeatedly polled in panel data. Briefly said, panel data include both time and space dimensions. Panel data also goes by the terms pooled data, cross-sectional and time series data combined, micro panel data, longitudinal data, event history analysis, and cohort analysis. Despite some minor differences, all these titles generally refer to the movement of cross-sectional units through time. As a result, we shall refer to panel data in a broad meaning that may comprise one or more of these concepts. Regression models based on such data will be known as panel data regression models. Fortunately, user-friendly software packages such as Limdep, PcGive, SAS, STATA, Shazam, and Eviews, among others, have made the task of implementing panel data regressions quite

easy (Gujarati, 2004).

Panel data have several advantages over cross-sectional or time-series data, according to Baltagi. First off, as panel data are related to people, businesses, states, countries, etc. throughout time, there is inevitability of heterogeneity in these units. By allowing for individual-specific variables, panel data estimation approaches can explicitly take such variation into account. In a broad sense, the term "individual" was used to refer to microunits like people, businesses, states, and nations. Second, by combining time series of cross-section observations, panel data give "more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency." Third, panel data are better suited to explore the dynamics of change because they examine the repeating cross section of observations. Panel data is better suited for studying periods of unemployment, job churn, and labour mobility. Next, impacts that simply cannot be seen in pure cross-sectional data or pure time series data can be detected and measured more accurately with panel data. Panel data also makes it possible to research more advanced behavioural models. Finally, panel data can reduce bias that might arise if we combine people or businesses into broad aggregates by making data available for thousands of units. Briefly put, using panel data can enhance empirical research in ways that using solely cross-section or time-series data might not be able to (Gujarati, 2004).
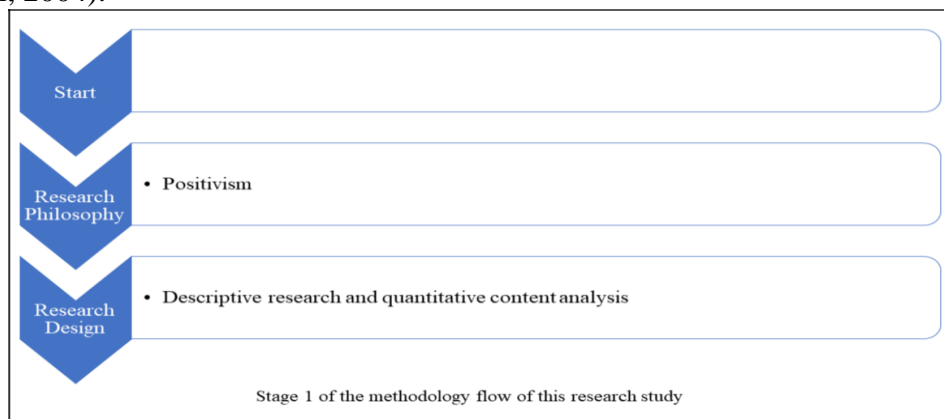

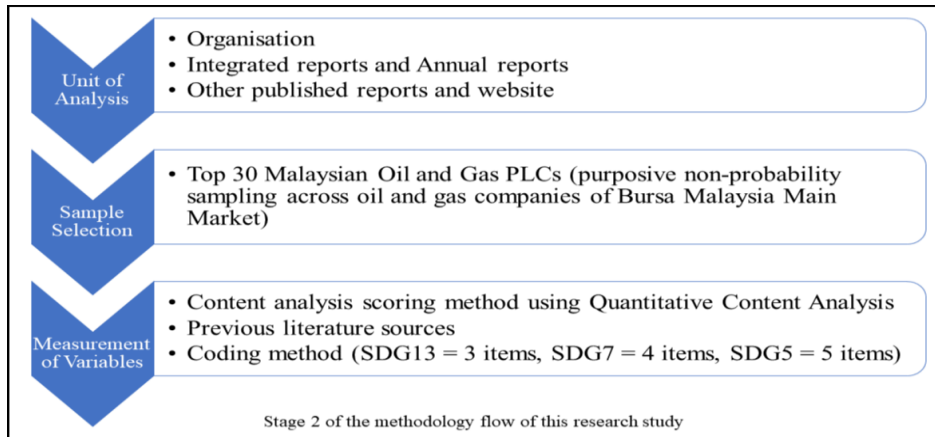
Figure 2. Stage 1 of the Methodology
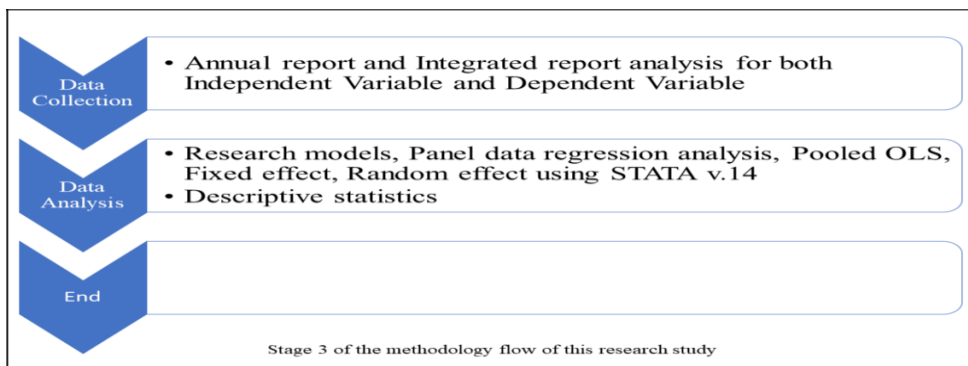
Figure 3. Stage 2 of the Methodology

Figure 4. Stage 3 of the Methodology

Research Design

The study of Gender Equality (SDG 5), Climate Action (SDG 13), and Affordable and Clean Energy (SDG 7) practices on firm financial performance of Oil and Gas PLCs are descriptive research and quantitative study. The secondary data such as quantitative content analysis, panel data, regression analysis and STATA.

Sample Selection

This research study used judgement sampling in its purposive sampling of samples. Sometimes it may be necessary to get information from target groups in place of those that are most easily or conveniently accessible. Here, only certain demographic groups that can offer the needed data are sampled. Selection of subjects for judgement sampling means selecting those who are most advantageously situated or in the best position to supply the necessary information. (Sekaran & Bougie, 2016). This research study is purposive sampling which is the Top 32 Malaysian Oil and Gas PLCs in Bursa Malaysia Main Market. From previous research, oil and gas companies have problems with sustainability such as gender equality especially for women employment, climate action for the gas emission and affordable clean energy distribution. This research study is able to collect information regarding the sustainable practices and disclosure of the 32 oil and gas companies from the annual reports in Bursa Malaysia.

Measurement of Variables

With quantitative content analysis, specific elements of written, visual, or auditory content are methodically categorised and recorded in order to be analysed. It is frequently used in the field of communication and is also useful in a number of other fields. (Coe, & Scacco, 2017).

The weightage of the SDG 5 - Gender Equality is 5 points, which is if the oil and gas company has the information regarding gender equality, 1 point will be given for each information available as per scoring index adapted from UNSDG 2030. The maximum point will be given for gender equality is 5 points. The scoring index for SDG 5 - Gender Equality is at Table 1.

The weightage of the SDG 13 - Climate Action is 3 points, which is if the oil and gas company has the information regarding gender equality, 1 point will be given for each information available as per scoring index adapted from UNSDG 2030. The maximum point will be given for gender equality is 3 points. The scoring index for SDG 13 - Climate Action is at Table 2.

The weightage of the SDG 7 - Affordable Clean Energy is 4 points, which is if the oil and gas company has the information regarding gender equality, 1 point will be given for each information available as per scoring index adapted from UNSDG 2030. The maximum point will be given for gender equality is 4 points. The scoring index for SDG 7 - Affordable Clean Energy is at Table 3.

Data Collection

The data were collected from the annual report and integrated report of Top 30 Malaysian Oil and Gas PLCs of Bursa Malaysia Main Market using both Independent Variable and Dependent Variable. Collecting data from each company's annual reports and integrated report of 5 years starting from 2018 to 2022.

Table 1. Scoring Index for Independent Variable 1 - SDG 5 Gender Equality

Scoring Index adapted from UNSDG 2030 (17 SDGs)
SDG 5 – Gender Equality
1. End all forms of discrimination against all women and girls everywhere.
2. Eliminate all forms of violence against all women and girls.
3. Ensure women's full and effective participation and equal opportunities for leadership.
4. Undertake reform to give women equal rights to economic resources, ownership and control over land and other forms of property, financial services etc.
5. Enhance the use of enabling technology, in particular information and communications technology to promote empowerment of women.
Weightage of SDG 5 = 5
Source: UNDP, IFC, IPIECA. (2017). Mapping the oil and gas industry to the sustainable development goals: an atlas.

Table 2. Scoring Index for Independent Variable 2 - SDG 13 Climate Action

Scoring Index adapted from UNSDG 2030 (17 SDGs)
SDG 13 - Climate Action
1. Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries. 2. Integrate climate change measures into national policies, strategies, and planning. 3. Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation impact reduction and early warning. **Weightage of SDG 13 = 3** **Source: UNDP, IFC, IPIECA. (2017). Mapping the oil and gas industry to the sustainable development goals: an atlas.**

Table 3. Scoring Index for Independent Variable 3 - SDG 7 Affordable and Clean Energy
Hypotheses Development

Scoring Index adapted from UNSDG 2030 (17 SDGs)
SDG 7 - Affordable and Clean Energy
1. By 2030, ensure universal access to affordable, reliable, and modern energy services. 2. By 2030, increase substantially the share of renewable energy in the global energy mix. 3. By 2030, double the global rate of improvement in energy efficiency. 4. Installed renewable energy - generating capacity in developing countries (in watts per capita). **Weightage of SDG 7 = 4** **Source: UNDP, IFC, IPIECA. (2017). Mapping the oil and gas industry to the sustainable development goals: an atlas.**

Table 4. Summary of Variable Measurements

Dimension	Variables	Name Of Variable	Symbol	Measurement Of Variables	Source / Formula	Type Of Variable
Gender Equality, Climate Action And Affordable Clean Energy Practices	Independent Variable 1	Gender Equality	SDG5	Disclosure index scoring ratio & Quantitative Content Analysis	Sumarno, T., Fitriyanti, V., Khusna, V., & Yusgiantoro, I. (2023, April); Khan, P. A., Johl, S. K., & Akhtar, S. (2021); United Nations Sustainable Development Goals 2030 (UNSDG, 2015)	Continuous Variable
	Independent Variable 2	Climate Action	SDG13			Continuous Variable
	Independent Variable 3	Affordable and Clean Energy	SDG7			Continuous Variable
Firm Financial Performance	Dependent Variable - Proxy 1	Return on Equity	ROE	ROA= [Profit after tax/ Total Asset (Non-current Assets + Current Assets)]	Fernando, J. (2023). Retrieved from https://www.investopedia.com/terms/r/returnonequity.asp#:~:text=Return%20on%20equity%20(ROE)%20is,the%20return%20on%20net%20assets.	Continuous Variable
	Dependent Variable - Proxy 2	Return on Asset	ROA	ROE= Profit after tax/Total Shareholder Equity	Hargrave, M. (2022). Retrieved from https://www.investopedia.com/terms/r/returnonassets.asp#:~:text=A%20ROA%20that%20rises%20over, may%20be%20in%20some%20trouble.	Continuous Variable
	Dependent Variable - Proxy 3	Tobin's Q	TOBINSQ	Tobin's Q = [Market value of firm + Total debt (Current Liabilities + Non-Current Liabilities)] / Total Assets (Non-Current Assets + Current Assets	Hayes, A. (2021). Retrieved from https://www.investopedia.com/terms/q/qratio.asp	Continuous Variable
Control Variable	Control Variable 1	Firm Leverage	LEV	Leverage = (Total Debt/ Total Equity)	Bursa Malaysia Annual Report & Bursa Malaysia Website	
	Control Variable 2	Firm Age	AGE	Year of Incorporation to date (Log of Firm Age)		
	Control Variable 3	Firm Size	SIZE	Log of Total Assets		Continuous Variable

Hypotheses Development

It is necessary to evaluate whether the relationships that have been theorised are, in fact, accurate once the significant variables in a situation have been discovered and their relationships have been created by logical reasoning in the theoretical framework. The researchers are able to gather trustworthy information on the types of links that exist among the variables operating in the problem situation by scientifically analysing these relationships using appropriate statistical studies. The outcomes of these tests give us some hints as to what might be altered in the environment to address the issue. The process of developing such testable hypotheses is known as hypothesis development (Sekaran, & Bougie, 2016).

A preliminary but testable claim that predicts what one expects to discover in the empirical data is known as a hypothesis. The conceptual model's underlying theory informs hypotheses, which are frequently relational in nature. In keeping with this definition, hypotheses can be summed up as logical relationships between two or more variables that are expressed as testable propositions. It is anticipated that solutions to the issue will be discovered through testing the hypotheses and verifying the conjectured relationships. (Sekaran, & Bougie, 2016).

Hypotheses H1a, H1b, H1c, H2a, H2b, H2c, H3a, H3b, and H3c are developed from research objective 2. To investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards the firm financial performance of Malaysian PLCs.

Hypotheses 1a, 1b, and 1c

Independent Variable	SDG 5 – Gender Equality →	Return on Equity (ROE) (Shareholders' perspective)
Gender Equality, Climate Action And Affordable Clean Energy Practices		Return on Assets (ROA) (Managements' perspective)
		Tobin's Q (Market perspective)

Firms' Financial Performance

H1a: Gender Equality Practices will have significant impact on firm performance using Return on Equity (ROE) as proxy
H1b: Gender Equality Practices will have significant impact on firm performance using Return on Assets (ROA) as proxy
H1c: Gender Equality Practices will have significant impact on firm performance using Tobin's Q as proxy
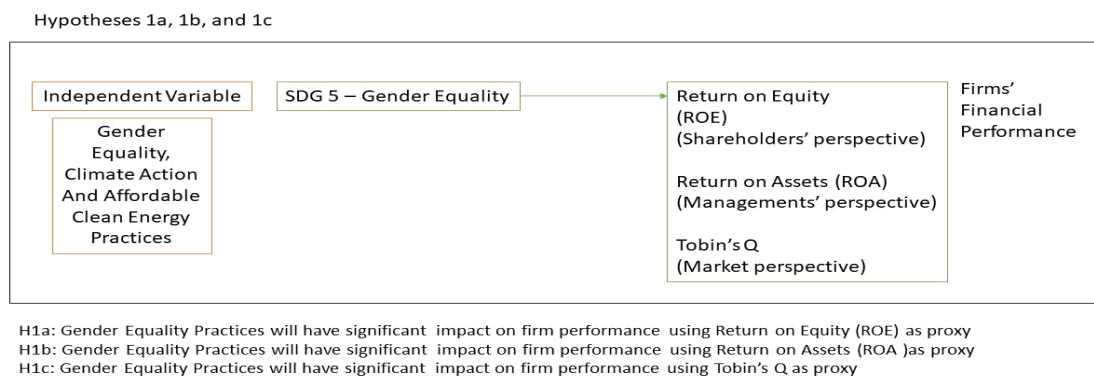
Figure 5. Independent Variable 1 (SDG 5 - Gender Equality) impact on Dependent Variable hypothesized by H1a, H1b, and H1c

H1a, H1b, and H1c were developed from UNSDG from 2015 to 2030 in which SDG 5 - Gender Equality. "Achieve gender equality and empower all women and girls," or just "Gender Equality," is the goal of SDG 5. It features fourteen (14) indicators and nine (9) targets. SDG 5 is focused on achieving the main objective of real and sustained gender equality in all spheres of the lives of women and girls, which includes putting an end to gender disparities, eradicating violence against them, banning early and forced marriage, ensuring equal leadership opportunities, and ensuring that everyone has access to sexual and reproductive health and rights. ("Republic of the Philippines, Philippine Commission on Women,"n.d.).

Hypotheses 2a, 2b, and 2c

			Firms' Financial Performance
Independent Variable	SDG 13 – Climate Action	Return on Equity (ROE) (Shareholders' perspective)	
Gender Equality, Climate Action And Affordable Clean Energy Practices		Return on Assets (ROA) (Managements' perspective)	
		Tobin's Q (Market perspective)	

H2a: Climate Action Practices will have significant impact on firm performance using Return on Equity (ROE) as proxy
H2b: Climate Action Practices will have significant impact on firm performance using Return on Assets (ROA)as proxy
H2c: Climate Action Practices will have significant impact on firm performance using Tobin's Q as proxy
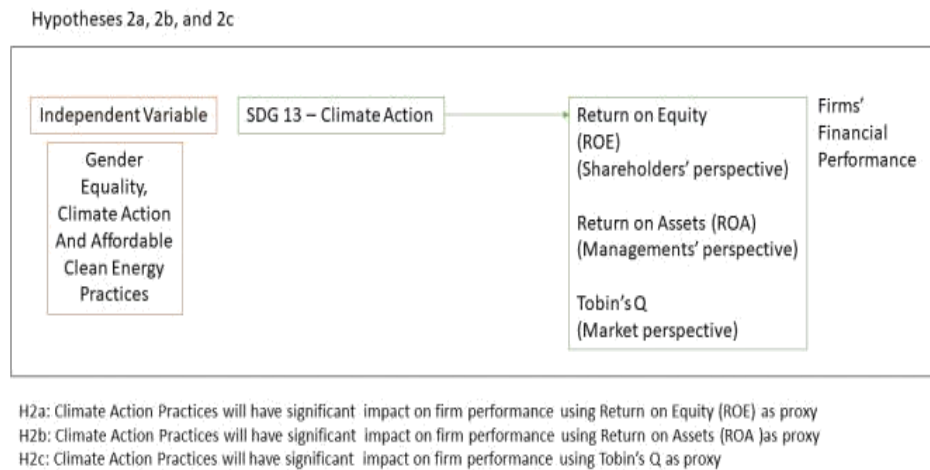
Figure 6. Independent Variable 2 (SDG13 - Climate Action) impact on Dependent Variable hypothesized by H2a, H2b, and H2c

H2a, H2b, and H2c were developed from UNSDG from 2015 to 2030 in which SDG 13 - Climate Action. Increased heat waves, droughts, floods, and tropical cyclones, as well as issues with water management, decreased agricultural output and food security, elevated health risks, critical infrastructure damage, and disruptions in the delivery of essential services like water and sanitation, education, energy, and transportation are all considered to be manifestations of climate change. ("United Nations Environment Programme,"n.d.).

Hypotheses 3a, 3b, and 3c

			Firms' Financial Performance
Independent Variable	SDG 7 – Affordable and Clean Energy	Return on Equity (ROE) (Shareholders' perspective)	
Gender Equality, Climate Action And Affordable Clean Energy Practices		Return on Assets (ROA) (Managements' perspective)	
		Tobin's Q (Market perspective)	

H3a: Affordable and Clean Energy Practices will have significant impact on firm performance using Return on Equity (ROE) as proxy
H3b: Affordable and Clean Energy Practices will have significant impact on firm performance using Return on Assets (ROA)as proxy
H3c: Affordable and Clean Energy Practices will have significant impact on firm performance using Tobin's Q as proxy
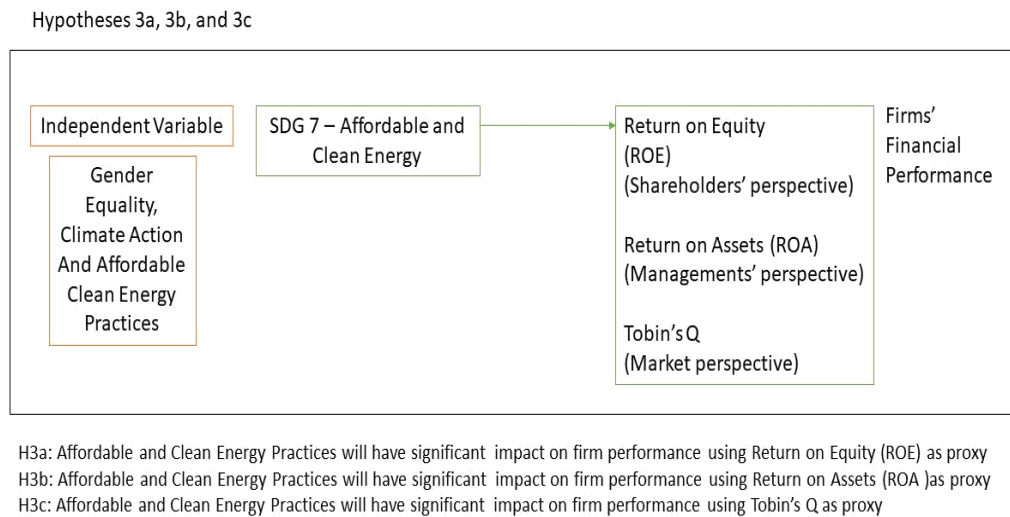
Figure 7. Independent Variable 2 (SDG 7 - Affordable and Clean Energy) impact on Dependent Variable hypothesized by H3a, H3b, and H3c

H3a, H3b, and H3c were developed from UNSDG from 2015 to 2030 in which SDG 7 - Affordable and Clean Energy. Development of the human race and the economy is hampered by lack of access to energy sources and transformation systems. The environment offers a variety of renewable and non-renewable energy sources, including uranium, sun, wind, hydropower, geothermal, and biofuels. Global climate change consequences will result from

increased fossil fuel use in the absence of mitigation measures for greenhouse gas emissions. Disaster risk reduction and climate change mitigation are both facilitated by the usage of renewable energy sources and energy efficiency. Ecosystem maintenance and protection enable the use of and further development of hydropower and bioenergy sources. ("United Nations Environment Programme,"n.d.).

Research Models / Regression Models

Model 1

$$ROA= \beta 0 + \beta 1SDG5 + \beta 2SDG13 + \beta 3SDG7 + \beta 4SIZE + \beta 5AGE + \beta 6LEV + \varepsilon it$$

Whereas:

ROA= Return on Asset for measuring accounting performance in terms of internal top management perspective among the Malaysian PLCs

ROE= Return on Equity for measuring accounting performance in terms external shareholders perspective among the Malaysian PLCs

TOBINS'Q = Tobin's Q for measuring market-based measure of performance in terms of market perspective among the Malaysian PLCs

SDG5= Gender Equality practices within Malaysian PLCs

SDG13= Climate Action practices within Malaysian PLCs

SDG7= Affordable and Clean Energy practices within Malaysian PLCs

SIZE= Firm size (controlled variable)

AGE= Firm age (controlled variable)

LEV= Firm leverage (controlled variable)

εit=Error term

The first regression model is to test H1 in which ROA is used as a proxy to measure firms' financial performance which are in line with Research Objective 2: To investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards firm financial performance of Malaysian PLCs and Research Question 2: Does the disclosure extent of the practices of gender equality, climate action and affordable and clean energy have impact towards firm financial performance across the Malaysian PLCs?

Model 2

$$ROE= \beta 0 + \beta 1SDG5 + \beta 2SDG13 + \beta 3SDG7 + \beta 4SIZE + \beta 5AGE + \beta 6LEV + \varepsilon it$$

The second regression model is to test H2 in which ROE is used as a proxy to measure firms

financial performance which are in line with Research Objective 2: To investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards firm financial performance of Malaysian PLCs and Research Question 2: Does the disclosure extent of the practices of gender equality, climate action and affordable and clean energy have impact towards firm financial performance across the Malaysian PLCs?

Model 3

$$\text{Tobin's Q} = \beta_0 + \beta_1 SDG5 + \beta_2 SDG13 + \beta_3 SDG7 + \beta_4 SIZE + \beta_5 AGE + \beta_6 LEV + \varepsilon it$$

The third regression model is to test H3 in which Tobin's Q is used as a proxy to measure firms financial performance which are in line with Research Objective 2: To investigate the impact of the disclosure extent of the practices of gender equality, climate action and affordable and clean energy towards firm financial performance of Malaysian PLCs and Research Question 2: Does the disclosure extent of the practices of gender equality, climate action and affordable and clean energy have impact towards firm financial performance across the Malaysian PLCs?

Data Analysis and Results

This section explains the result of the hypotheses of the research study.

Descriptive Statistics

Descriptive statistics describe, show, and summarize the basic features of a dataset found in a given study, presented in a summary that describes the data sample and its measurements. The primary objective of descriptive statistics is to effectively summarize and describe the main features of a dataset, providing an overview of the data and helping to identify patterns and relationships within it. Descriptive statistics provide a useful starting point for analyzing data, as they can help to identify outliers, summarize key characteristics of the data, and inform the selection of appropriate statistical methods for further analysis (Hayes, 2023).

Measures of central tendency and measures of variability (spread) are the two main categories of descriptive statistics. The mean, median, and mode are measurements of central tendency, while the standard deviation, variance, minimum and maximum variables, kurtosis, and skewness are measures of variability (Hayes, 2023).

In a nutshell, descriptive statistics provide brief summaries of the sample and data measurements to aid in describing and understanding the characteristics of a particular data set. The mean, median, and mode, which are utilised at practically all math and statistics levels, are the most well-known types of descriptive statistics. By summing up all the data set's figures and then dividing by the total number of figures, the mean or average can be derived. Descriptive statistics are used by the researchers to transform complex quantitative findings from a huge data set into concise explanations ("Simpli Learn". 2023).

Table 5. Descriptive Statistics - Overall result of for all variables across 5 years

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	160	-.01	.186	-1.416	.503
roe	160	-.933	9.386	-116.186	6.064
tobinsq	160	1.079	.663	0	3.242
sdg5	160	.299	.158	0	.6
sdg13	160	.2	.233	0	1
sdg7	160	.388	.308	0	1
size	160	8.748	2.351	0	10.744
age	160	1.189	.401	0	1.792
lev	160	2.174	16.596	-38.786	205.047

The disclosure of gender equality is 29.9, climate action is 20 and affordable clean energy is 38.8. The lowest disclosure climate action and the highest is affordable clean energy. Overall disclosure is lower than 50% for the period of 5 years 2018 to 2022 across oil and gas public listed companies in Malaysia.

Standard deviation for gender equality is 15.8, climate action is 23.3 and affordable clean energy 30.8 which is below the mean, which indicates that the standard deviation is low. Low standard deviation means data are clustered around the mean. Overall standard deviation is normal and the data is lower than 50% which reflect the low level of disclosure for the period of 5 years 2018 to 2022 across oil and gas public listed companies in Malaysia ("National Library Medicine,"n.d.).

Pooled Ordinary Least Square (OLS)

Pooled regression model is one type of model that has constant coefficients, referring to both intercepts and slopes. For this model researchers can pool all the data and run an ordinary least square regression model (Hiestand, 2005).

Table 6. Regression results: Disclosure extent of the practices of gender equality, climate action and affordable clean energy towards firm financial performance of Malaysian oil and gas PLCs (Research Objective 2 – OLS)

Variables	Model 1 ROA (OLS)	Model 2 ROE (OLS)	Model 3 Tobin's Q (OLS)
SDG5	0.005 (0.103)	1.136 (1.959)	-0.685** (0.312)
SDG13	-0.015 (0.65)	1.16 (1.232)	-0.311 (0.196)
SDG7	0.206*** (0.051)	-0.276 (0.975)	1.013 (0.155)
FIRM SIZE	-0.014 (0.01)	-0.036 (0.189)	0.068 (0.03)
FIRM AGE	0.053 (0.057)	0.528 (1.075)	0.26 (0.171)
FIRM LEVERAGE	-0.003 (0.001)	-0.529 0.016	-0.001 (0.003)
CONSTANT	-0.023 (0.053)	-0.562 (1.008)	0.051 (0.161)
R^2	0.183	0.884	0.408
F-Value / Wald Chi^2	571.00***	193.791***	175.38***
Observations	160	160	160
Hausman Test	6.124	5.478	19.167***

Note: Standard errors in parentheses,
levels of significance, *** $p<0.01$, ** $p<0.05$ and *$p<0.1$

The overall findings show significance for F - statistics for Return on Assets (ROA) within the Pooled Ordinary Least Square (OLS) model as the results shows less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are not significant except for SDG 7 - affordable and clean energy at 0.00 which reflect significance. Overall significance at the Return on Assets level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the internal top management of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Return on Equity (ROE) within the Pooled Ordinary Least Square (OLS) model as the results shows less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action And Affordable Clean Energy Practices are all not significant. Shareholders are more concerned about their profits and return on their shareholdings rather than the disclosure

of gender equality, climate action and affordable clean energy. However, overall significance at the Return on Equity level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the shareholders of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Tobin's Q within the Pooled Ordinary Least Square (OLS) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are significant at SDG 5 - gender equality at 0.03 and SDG 7 - affordable and clean energy at 0.00 in which Tobin's Q reflect market valuation have higher awareness among the market participants on the gender equality and affordable clean energy than the internal top management and shareholder. Overall significance at the Tobin's Q level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the market participants of the Malaysian Oil and Gas PLCs.

Fixed Effect Model (FE)

Fixed effect models assume that the explanatory variable has a fixed or constant relationship with the response variable across all observations. This can be a helpful way to analyze data because it allows us to compare the effects of different factors on the outcome (Kumar, 2023).

Table 7. Regression results: Disclosure extent of the practices of gender equality, climate action and affordable clean energy towards firm financial performance of Malaysian oil and gas PLCs (Research Objective 2 – FE)

Variables	Model 1 ROA (FE)	Model 2 ROE (FE)	Model 3 Tobin's Q (FE)
SDG5	0.32 (0.144)	1.118 (2.587)	-0.129 (0.201)
SDG13	-0.018 (0.082)	0.554 (1.472)	-0.199 (0.114)
SDG7	0.15* (0.09)	0.036 (1.612)	0.023 (0.125)
FIRM SIZE	-0.037 (0.027)	0.51 (0.49)	0.237 (0.038)
FIRM AGE	0.163 (0.215)	-5.223 (3.852)	-0.779 (0.299)
FIRM LEVERAGE	-0.003*** (0.001)	-0.534 (0.017)	0.002 (0.001)
CONSTANT	0.06 (0.077)	1.521 (1.38)	-0.007 (0.107)
R^2	0.110	0.892	0.584
F-Value / Wald Chi^2	251.7***	167.639***	285.40***
Observations	160	160	160
Hausman Test	6.124	5.478	19.167***

Note: Standard errors in parentheses,
levels of significance, *** $p<0.01$, ** $p<0.05$ and *$p<0.1$

The overall findings show significance for F - statistics for Return on Assets (ROA) within the Fixed Effect Model (FE) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as Prob $> F = 0.000$. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are all not significant. Management is more concerned about personal interest rather than the disclosure of gender equality, climate action and affordable clean energy. However, overall significance at the Return on Assets level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the internal top management of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Return on Equity (ROE) within the Fixed Effect Model (FE) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as Prob $> F = 0.000$. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are all not significant. Shareholders are more concerned about their profits and return on their shareholdings rather than the disclosure

of gender equality, climate action and affordable clean energy. However, overall significance at the Return on Equity level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the shareholders of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Tobin's Q within the Fixed Effect Model (FE) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as $Prob > F = 0.000$. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are all not significant. Tobin's Q reflects market valuation is still lacking the practices of gender equality, climate action and affordable clean energy among the market participants. However, overall significance at the Tobin's Q level reflects the support of the Gender Equality, Climate Action And Affordable Clean Energy Practices from the market participants of the Malaysian Oil and Gas PLCs.

Random Effect Model (RE)

A random effects model is a way of analyzing data that takes into account the fact that some factors affecting the outcome may vary randomly across individuals or groups. The word "random" refers to the fact that some of the factors that affect the outcome vary randomly across individuals or groups. By including a random effect in our model, we can better estimate the effect of the factor we're interested in by accounting for the random variation across individuals (Kumar, 2023).

Table 8. Regression results: Disclosure extent of the practices of gender equality, climate action and affordable clean energy towards firm financial performance of Malaysian oil and gas PLCs (Research Objective 2 – RE)

Variables	Model 1 ROA (RE)	Model 2 ROE (RE)	Model 3 Tobin's Q (RE)
SDG5	0.005 (0.103)	1.004 (2.021)	-0.267 (0.204)
SDG13	-0.015 (0.065)	1.029 (1.25)	-0.223 (0.118)
SDG7	0.206*** (0.51)	-0.18 (1.04)	0.197 (0.124)
FIRM SIZE	-0.014 (0.01)	-0.04 0.202	0.169 (0.031)
FIRM AGE	0.053 (0.057)	0.389 (1.2)	-0.241 (0.237)
FIRM LEVERAGE	-0.003*** (0.001)	-0.531*** (0.016)	0.001 (0.001)
CONSTANT	-0.023 (0.053)	-0.329 (1.049)	-0.063 (0.136)
R^2	0.183	0.884	0.245
F-Value / Wald Chi^2	342.62***	1175.941***	157.52***
Observations	160	160	160
Hausman Test	6.124	5.478	19.167***

Note: Standard errors in parentheses,
levels of significance, *** $p<0.01$, ** $p<0.05$ and *$p<0.1$

The overall findings show significance for F - statistics for Return on Assets (ROA) within the Random Effect Model (RE) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are not significant except for SDG 7 - affordable and clean energy at 0.00 which reflect significance. Overall significance at the Return on Assets level reflects the support of the Gender Equality, Climate Action and Affordable Clean Energy Practices from the internal top management of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Return on Equity (ROE) within the Pooled Ordinary Least Square (OLS) model as the results shows less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action and Affordable Clean Energy Practices are all not significant. Shareholders are more concerned about their profits and return on their shareholdings rather than the disclosure of gender equality, climate action and affordable clean energy. However, overall significance at the Return on Equity level reflects the support of the Gender Equality, Climate Action And Affordable Clean Energy Practices from the shareholders of the Malaysian Oil and Gas PLCs.

The overall findings show significance for F - statistics for Tobin's Q within the Pooled Ordinary Least Square (OLS) model as the results show less <0.05 in which all the coefficients in the model are different from zero described as Prob > F = 0.000. The individual p-values of the three components Gender Equality, Climate Action And Affordable Clean Energy Practices are all not significant. Tobin's Q reflects market valuation is still lacking the practices of gender equality, climate action and affordable clean energy among the market participants. However, overall significance at the Tobin's Q level reflects the support of the Gender Equality, Climate Action And Affordable Clean Energy Practices from the market participants of the Malaysian Oil and Gas PLCs.

Table 9. Selecting the best Panel Data Model: Research Objective 2

Selection	Test	Results : Proceed with
OLS vs FE	Poolability F Test - ROA	FE
OLS vs FE	Poolability F Test - ROE	FE
OLS vs FE	Poolability F Test - Tobin's Q	FE
OLS vs RE	BPLM Test -ROA	OLS
OLS vs RE	BPLM Test -ROE	OLS
OLS vs RE	BPLM Test -Tobin's Q	RE
FE vs RE	Hausman Test - ROA	RE
FE vs RE	Hausman Test - ROE	RE
FE vs RE	Hausman Test - Tobin's Q	FE

According to Pallant (2001) there are many different statistical models which can be used to analyse quantitative data. However, Oppenheim (1992) argues that the process of choosing an appropriate statistical model should be based on the nature of the data targeted. Therefore, as explained in chapter 4, the data in this study can be considered to be representative of both

cross-sectional data and time series data.

Indeed, the combination of cross-sectional data with time series data is typically known as panel data (Frees, 2004). From this concept, the quantitative panel data of this study refers to the data recorded across different Jordanian industrial sectors at different times which are from 2015 to 2019. In the panel data analysis, "Pooled regression model", "Fixed-effects model" and "Random-effects model" are the three main approaches for analysing the panel data using the Static Linear Panel Model.

It has been documented that the most common way to select a fit model is by using the Hausman test (Hausman, 1978; Hausman & Taylor, 1981; Saleh et al, 2011).

In this study, the "pooled regression model" has been excluded from this analysis as its statistical assumption is inconsistent with the nature of panel data. This model assumes that there are no differences over the values of explanatory variables, whereas the descriptive analysis of the data shows that there are differences in disclosure levels across companies and over the years. As such it could be argued that the pooled regression model may lead to inconsistent results.

However, the "fixed-effects" and "random-effects" models both have potential advantages and greater accuracy to analyse panel data. Therefore, to determine which of the two models is most suitable for this study, the Hausman test has been employed.

Based on the results of the Hausman test conducted on the ROA, ROE and TOBIN'S Q, it can be clearly argued that the Fixed Effect Model is a more valuable model to be used in this research study.

Discussion of findings

This section highlights the main findings of the study
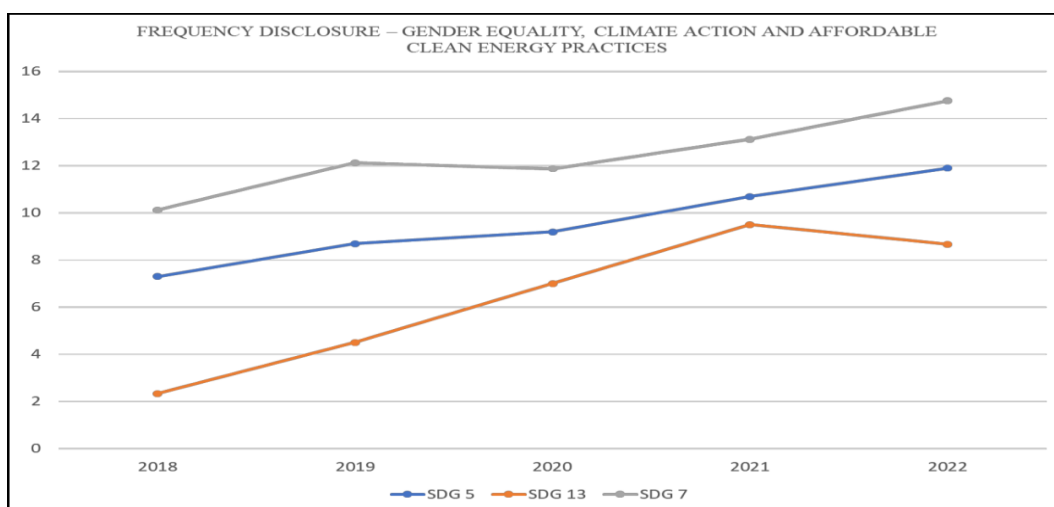
Discussion of Results - Research Question 1

Figure 8. Discussion of Results - Research Question 1

Table 10. Discussion of Results - Research Question 1

	SDG 5	SDG 13	SDG 7
2018	7.3	2.334	10.125
2019	8.7	4.502	12.125
2020	9.2	7.002	11.875
2021	10.7	9.503	13.125
2022	11.9	8.671	14.75

The trend of the SDG disclosures for SDG 5 - Gender Equality from 2018 to 2022 is going upward by the years, while for SDG 13 - Climate Action is rising upward from 2018 to 2021 but slightly downward in 2022, and for SDG 7 - Affordable Clean Energy is increasing upwards in 2019 and 2021 to 2022. By this trend, it seems likely that the oil and gas companies in Malaysia are disclosing the SDG by the years and know the importance of sustainability towards the firm financial performances.

What are the levels of disclosure of the practices of gender equality, climate action and affordable and clean energy across the Malaysian PLCs? The disclosure of gender equality is 29.9, climate action is 20 and affordable clean energy is 38.8. The lowest disclosure is climate action and the highest is affordable clean energy. Overall disclosure is lower than 50% for the period of 5 years 2018 to 2022 across oil and gas public listed companies in Malaysia. Therefore the oil and gas companies are still lacking in sustainability disclosure which reflect that they are more profit oriented.

Standard deviation for gender equality is 15.8, climate action is 23.3 and affordable clean energy 30.8 which is below the mean, which indicates that the standard deviation is low. Low standard deviation means data are clustered around the mean. Overall standard deviation is normal and the data is lower than 50% which reflect the low level of disclosure for the period of 5 years 2018 to 2022 across oil and gas public listed companies in Malaysia ("National Library Medicine,"n.d.).

Discussion of Results - Research Question 2

Does the disclosure extent of the practices of gender equality, climate action and affordable and clean energy have an impact towards firm financial performance across the Malaysian PLCs? As per research question 2, overall disclosure of the for gender equality, climate action and affordable clean energy practices shows significant which reflect in the Return on Assets, Return on Equity and Tobin's Q using Pooled Ordinary Least Square (OLS), Fixed Effect Model (FEM) and Random Effect Model (REM) with 0.0000.

According to **"Selecting the best Panel Data Model: Research Objective 2",** the result shows that this research study is more suitable in using Fixed Effect Model (FEM). Based on the Fixed Effect Model (FEM), the overall result of the Return on Assets, Return on Equity and Tobin's Q for gender equality, climate action and affordable clean energy is significant. The individual SDGs are found to be insignificant due to lack of awareness and lack of practices across Oil and Gas PLCs. This research study is significant and acceptable and can be used in the industry.

Conclusion and Future Suggestions

SDG 5 - Gender Equality should be seriously implemented at the human resource strategy level by the Malaysian and global oil and gas industry to create diversity in a majority all-male environment. SDG 13 - Climate Action strategies should be implemented in stages to reduce high dependency on fossil fuels that would increase GHG emissions. It is understood that to change to electricity powered vehicles would be costly for Malaysian in which Malaysia is at the GDP level where the change would be unaffordable for most Malaysians even at the M40 level and T20 level. SDG 7 - Affordable and Clean Energy supports for clean, modern, and affordable energy especially for the B40 level of Malaysians which are underprivileged with the lowest income across the nation.

References

Al Lawati, H., & Hussainey, K. (2022). Does Sustainable Development Goals Disclosure Affect Corporate Financial Performance?. *Sustainability, 14*(13), 7815. https://doi.org/10.3390/su14137815

Albuainain, M., Kalimugogo, V., & Alzahrani, H. The Role of Oil & Gas Industry in Achieving the Sustainable Development Goals (SDGs). *International Journal of Sustainable and Green Energy, 11*(3), 52-57. doi:10.11648/j.ijrse.20221103.11

Climate Change Performance Index - CCPI. (n.d.). Retrieved from https://ccpi.org/country/mys/

Coe, K., & Scacco, J. M. (2017). Quantitative content analysis.

Evans., S. (2022, January) https://www.offshore-technology.com/features/qa-gender-diversity-in-oil-and-gas/#:~:text=A%20new%20report%20from%20the,2017%20%E2%80%93%20remaining%20at%2022%25.

Fu, L., Singhal, R., & Parkash, M. (2016). Tobin's q ratio and firm performance. *International research journal of applied finance, 7*(4), 1-10.

Gujarati, D. N. (2004). Basic Econometrics. 4th Edition, McGraw-Hill Companies.

Hargrave, M. (2022). Return on Assets (ROA): Formula and 'Good' ROA Defined. Retrieved from https://www.investopedia.com/terms/r/returnonassets.asp#:~:text=A%20ROA%20that%20rises%20over,may%20be%20in%20some%20trouble.

Hayes, A. (2023). Retrieved from https://www.investopedia.com/terms/d/descriptive_statistics.asp

Hiestand, T. (2005). Using pooled model, random model and fixed model multiple regression to measure foreign direct investment in Taiwan. *International Business & Economics Research Journal (IBER), 4*(12). https://doi.org/10.19030/iber.v4i12.3642

Hirsu, L., Hashemi, L., & Quezada-Reyes, Z. (2019). SDG 5: Achieve gender equality and

empower all women and girls. RMIT University, Melbourne.

Khan, P. A., Johl, S. K., & Akhtar, S. (2021). Firm sustainable development goals and firm financial performance through the lens of green innovation practices and reporting: a proactive approach. *Journal of Risk and Financial Management, 14*(12), 605. https://doi.org/10.3390/jrfm14120605

Kumar, A. (2023). Retrieved from https://vitalflux.com/fixed-vs-random-vs-mixed-effects-models-examples/

Lai, F. W., Shad, M. K., & Shah, S. Q. A. (2021). Conceptualizing corporate sustainability reporting and risk management towards green growth in the Malaysian oil and gas industry. In *SHS Web of Conferences* (Vol. 124, p. 04001). EDP Sciences. https://doi.org/10.1051/shsconf/202112404001

Lassala, C., Orero-Blat, M., & Ribeiro-Navarrete, S. (2021). The financial performance of listed companies in pursuit of the Sustainable Development Goals (SDG). *Economic Research-Ekonomska Istraživanja, 34*(1), 427-449. (New) https://doi.org/10.1080/1331677X.2021.1877167

McAbee, J. (2022). Retrieved from https://www.wrike.com/blog/understanding-stakeholder-theory/#What-is-stakeholder-theory

National Library of Medicine. (n.d.). Retrieved from https://www.nlm.nih.gov/nichsr/stats_tutorial/section2/mod8_sd.html#:~:text=A%20standard%20deviation%20(or%20%CF%83,data%20are%20more%20spread%20out.

Nechita, E., Manea, C. L., Nichita, E. M., Irimescu, A. M., & Manea, D. (2020). Is financial information influencing the reporting on SDGs? Empirical evidence from central and eastern European chemical companies. *Sustainability, 12*(21), 9251. https://doi.org/10.3390/su12219251

Ponton, R. (2019, October). https://www.nst.com.my/opinion/columnists/2019/10/527896/shattering-glass-ceiling-oil-and-gas-companies#:~:text=Across%20the%20globe%2C%20female%20participation,levels%20of%20any%20major%20industry.

Republic of the Philippines, Philippine Commission on Women. (n.d.). Retrieved from https://pcw.gov.ph/gender-equality-and-the-sustainable-development-goals/#:~:text=SDG%205%20is%20focused%20on,securing%20equal%20participation %20and%20opportunities

Reuters. (2023, February) https://www.nst.com.my/news/nation/2023/02/876077/malaysia-faces-inconvenient-truth-clean-energy-goals

SAS® Help Center. (2020). Retrieved from https://documentation.sas.com/doc/en/pgmsascdc/9.4_3.5/casecon/casecon_cpanel_details47.

htm#:~:text=A%20poolability%20test%20is%20an,to%20those%20from%20pooled%20regression.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach.* john wiley & sons.

Simpli Learn. (2023). Retrieved from https://www.simplilearn.com/what-is-descriptive-statistics-article#:~:text=Descriptive%20statistics%20refers%20to%20a,help%20identify%20patterns%20and%20relationships.

Spure Economics. (2022). Retrieved from https://spureconomics.com/lagrange-multiplier-test-testing-for-random-effects/#:~:text=The%20Breusch%2DPagan%20Lagrange%20Multiplier,used%20extensively%20with%20panel%20data.

Sumarno, T., Fitriyanti, V., Khusna, V., & Yusgiantoro, I. (2023, April). The Importance of Women Participation in Ensuring Justice in Energy Transition in ASEAN and G7. In *International Conference on Gender Research, 6*(1), 232-240. https://doi.org/10.34190/icgr.6.1.1040

Sustainable Development Goals. (2015). Retrieved from https://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/

UNDP, IFC, IPIECA. (2017). Mapping the oil and gas industry to the sustainable development goals: an atlas.

United Nations Environment Programme. (n.d.). Retrieved from https://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-13

Copyright