

The Influence of Managers' Environmental Values, Leadership, and Stakeholder Engagement in Promoting Environmental Sustainability and Corporate Financial Performance in the Oil and Gas Industry in the Philippines

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Abstract

This study explored how managers' environmental values, leadership, and stakeholder engagement impact environmental sustainability and corporate financial performance in the Philippines' oil and gas industry. Given the country's vulnerability to climate change, oil and gas companies face pressure to adopt sustainable practices, with managers playing a crucial role in these efforts. Using a quantitative approach, the study surveyed managers in the oil and gas industry, assessing their environmental values, leadership, stakeholder engagement practices, and both environmental and financial performance. The key findings indicate that managers' environmental values directly influence environmental sustainability and stakeholder engagement, environmental leadership does not directly impact environmental sustainability but has a significant indirect effect through stakeholder engagement, stakeholder engagement directly affects environmental sustainability and indirectly influences financial performance via environmental sustainability, and strong environmental sustainability leads to positive financial performance. These results underscore the importance of fostering managers' environmental values and their ability to engage stakeholders in sustainability efforts. Effective leadership relies on collaboration with stakeholders rather than individual actions. This study enhances the understanding of environmental sustainability in the Philippine oil and gas industry and suggests focusing on developing managers' environmental values to improve sustainability outcomes.

Keywords: environmental sustainability, oil and gas industry, managers, leadership, stakeholder engagement, financial performance

1. INTRODUCTION

The oil and gas sector is a substantial contributor to the global economy, and the Philippines boasts a growing industry in this field. It is crucial to understand the factors that influence the financial and non-financial performance of corporations in the Philippine oil and gas sector.

Environmental sustainability has emerged as a critical concern for businesses across various industries, including the oil and gas sector. The growing stringency of environmental regulations, evolving consumer preferences, and increasing investor pressure have prompted companies to integrate environmental considerations into their strategies and operations. Given the Philippines' heightened vulnerability to climate change, there is an urgent need for oil and gas corporations to adopt proactive measures to mitigate environmental risks and promote sustainability.

Velasquez (2022) has mentioned that company executives and managers are held responsible and liable for environmental violations if they are found to be involved in the non-compliant activities hence the importance of managers to ensure compliance to environmental policies hence, managers in oil and gas companies play a vital role in driving environmental initiatives and shaping organizational culture to adhere to the nation's rules and policies on environmental compliance.

The managers' environmental values, leadership, and engagement with stakeholders can significantly influence the adoption and implementation of sustainable practices within their organizations. However, few studies have examined the specific mechanisms through which managers' characteristics and behaviors influence environmental sustainability and corporate financial performance in the Philippine context. By studying managers and their influence on sustainability, researchers can gain a comprehensive understanding of the factors that contribute to or hinder environmental sustainability efforts within organizations (Leal et al., 2020); (Leal et & Baumgartner, 2020).

To promote sustainable development in the oil and gas industry in the Philippines, it is important to identify the factors that drive or hinder environmental sustainability efforts. By understanding the influence of managers' environmental values, leadership, and stakeholder engagement on financial performance and environmental sustainability, policymakers, industry stakeholders, and corporate leaders can develop targeted interventions and initiatives. This knowledge is crucial for guiding the industry towards a more environmentally sustainable path. Further research is needed to explore the specific influence of managers' environmental values on strategic decisions related to environmental sustainability and the impact of diverse leadership. Additionally, the effectiveness of stakeholder engagement strategies, including interactions with communities, governmental bodies, and non-governmental organizations, needs to be examined.

1.1. Literature Review

1.1.1 Environmental Framework in the Philippines

The oil and gas industry, a major contributor to this problem, is key to the solution. Rapid development has fueled air and water pollution. In 2020, air quality levels far exceeded WHO guidelines, leading to an estimated 27,000 premature deaths and economic losses (Greenpeace, 2020). Fossil fuels, including oil and gas, are the primary sources of fossil fuels. The Philippines is also a leading plastic polluter, with an estimated 0.75 million tons of plastic entering the ocean annually (International Partnerships 2021). This critical issue requires immediate attention.

In accordance with the policy declaration of the 1987 Constitution, which states that the State shall safeguard and promote the people's right to a balanced and healthy environment in harmony with nature. Through the years, the legislature has enacted laws on environmental protection and preservation, which include the following: RA 8749 or the Clean Air Act of 1999 mandates the establishment of an effective air quality management program to mitigate the worsening air pollution in the country, RA 9275 or the Philippine Clean Water Act of 2004 establishes the comprehensive water quality management scheme, RA 9512 or the National Environmental Awareness and Education Act of 2008 promotes national awareness on the role of natural resources in economic growth and the importance of environmental conservation and ecological balance towards sustained national development, RA 9513 or the Renewable Energy Act of 2008 promotes the development, utilization and commercialization of renewable energy resources (Climate Actions, n.d.).

The Philippines is committed to environmental protection. During the COP26 climate summit, they pledged a 75% carbon emission reduction by 2030 (Incentives for "Green" Financing, 2022). However, several challenges remain to be overcome. This commitment echoes the country's pledge to the Kyoto Protocol in 2015 to reduce the gas emissions by 70% (On alert: The Philippines and climate change, 2024).

Although the Philippines is committed to this, its current environmental performance lags. The Environmental Performance Index (EPI) ranks 158th among 180 countries (De Guia, 2023). Deforestation, inadequate waste management, and air pollution remain major national obstacles. As Rivera (2021) points out, the Philippines needs to reduce its reliance on fossil fuels, balance economic growth with climate action, and secure funding for a sustainable transition.

1.1.2. Environmental Sustainability Practices in the Oil and Gas

The oil and gas industry, facing pressure from stakeholders and environmental concerns, is transitioning towards sustainability. Despite its reliance on fossil fuels, the industry is implementing various practices to minimize its environmental impact. Sustainable resource management, as defined by Renyong and Sedik (2023), is crucial for long-term development. This necessitates balancing economic, social, and environmental considerations. Examples include Reduced Greenhouse Gas Emissions: Measures include improved energy efficiency, renewable energy sources, and carbon capture and storage (International Association of Oil & Gas Producers, 2019); Water Conservation and Pollution Reduction: Recycled water usage and wastewater treatment are key practices (American Petroleum Institute, 2021);

Biodiversity Protection: The industry aims to minimize disruption to sensitive ecosystems and wildlife (International et al. Association, 2021), Environmental Management Systems: Established systems ensure regulatory compliance and risk mitigation (International Organization for Standardization, 2015), and Stakeholder Engagement: Collaboration with communities and environmental groups fosters transparency and addresses concerns (International Association of Oil & Gas Producers, 2019)

1.1.3. Environmental Values of Managers

Luque-Vílchez et al. (2019) show that environmental managers' personal values, particularly universalism and benevolence, have a substantial influence on an organization's environmental disclosure practices. Managers with self-transcendent values are more inclined to prioritize environmental concerns and engage in environmentally responsible behaviors. Such values significantly impact managers' decision-making processes, leading them to adopt environmental strategies and practices that align with their beliefs. Consequently, organizations led by managers with strong pro-environmental values are more likely to prioritize environmental disclosure and transparency in their reporting practices. Furthermore, Majid et al. (2022) posited that environmental values affect the attitudes, norms, and behaviors of individuals and groups.

To enhance environmental sustainability, Akintunde (2017) suggests that the attitudes and actions of individuals towards the environment need to be influenced. People who value the environment are more likely to recycle, reduce waste, and conserve energy, thereby minimizing human impact and promoting sustainability. Adopting environmental principles can also impact legislation and contribute to neighborhood and national sustainability. Emphasizing environmental ideals can help sustain the environment.

1.1.4. Environmental Leadership

According to Liu et al. (2018), environmental leadership is crucial for driving corporate sustainability. (2018). Leaders with strong environmental values are more likely to champion green initiatives, utilize transformational leadership styles, and prioritize environmental considerations in decision-making. This, in turn, can help organizations achieve their environmental goals and improve overall performance. Obeidat et al. (2020) further emphasizes the importance of managers in influencing employee commitment to environmental practices. They highlight the need for a strong corporate culture that embeds values to promote long-term sustainability.

Transformational leadership is key for oil and gas managers to drive environmental sustainability (Jackson, 2021). This involves articulating a clear vision of sustainability, effectively communicating it to employees, and empowering them to act accordingly. Effective leadership requires understanding, managing, and communicating with stakeholders. This means comprehending stakeholder needs, goals, and how their expectations might influence the organization. Strong stakeholder management fosters trust and collaboration, which are essential for achieving environmental sustainability goals.

Boeske (2023) explained leadership and sustainability. The author states that leaders must learn how to lead and comprehend sustainable behaviors and processes. Her integrated "leading towards the sustainability" approach shows how leaders may influence individuals, teams, and work units to achieve sustainability goals.

Effective leadership is crucial for achieving sustainability goals, and leaders must understand the behaviors and practices necessary for long-term success. Boeske (2023) identifies six key leadership styles—Visionary and Strategic, Collaborative and Participatory, Ethical and Responsible, Innovative and Adaptive, Relational and Transformational, and Knowledgeable and Informed—that can influence individuals, teams, and work units towards sustainability. These leadership styles aim to unify existing frameworks and provide guidance to leaders in small, medium, and large firms to implement sustainability initiatives, goals, and objectives. Su et al. (2020) also found that environmental leadership positively impacts both the environmental and financial performance of organizations.

1.1.5. Stakeholder Engagement and Financial Performance

Stakeholder engagement is crucial for the oil and gas industry, which faces environmental challenges and demands for social responsibility (Voegtlin & Greenwood, 2016). Effective communication among communities, governments, and NGOs is essential.

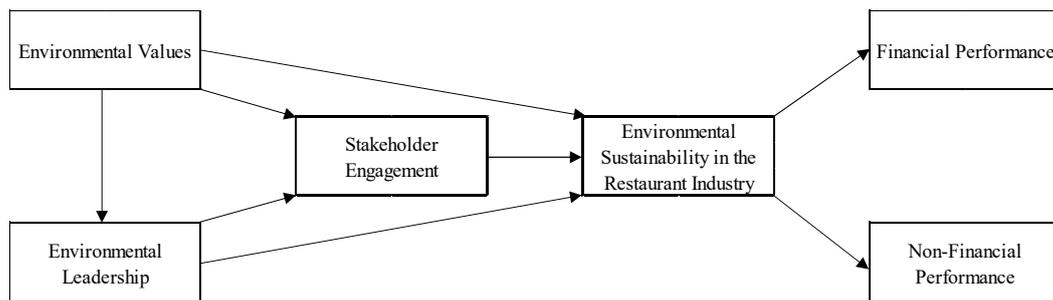
Sustainability requires balancing economic, social, and environmental factors (Lee, 2019). Practices such as carbon capture and reduced emissions can contribute (various sources). Stakeholder engagement fosters a corporate culture that is receptive to these concerns (Doni et al., 2021).

Research suggests a positive link between environmental practices, stakeholder engagement, and financial performance (Danso et al., 2019; Pham et al., 2021). Companies can achieve sustainability by integrating ESG principles into decision-making, operations, and innovation (Sanchez-Planelles et al., 2021). Stakeholder engagement enables companies to understand stakeholder needs, thereby contributing to sustainable business models (Attanasio et al. 2021).

1.2. Research Framework

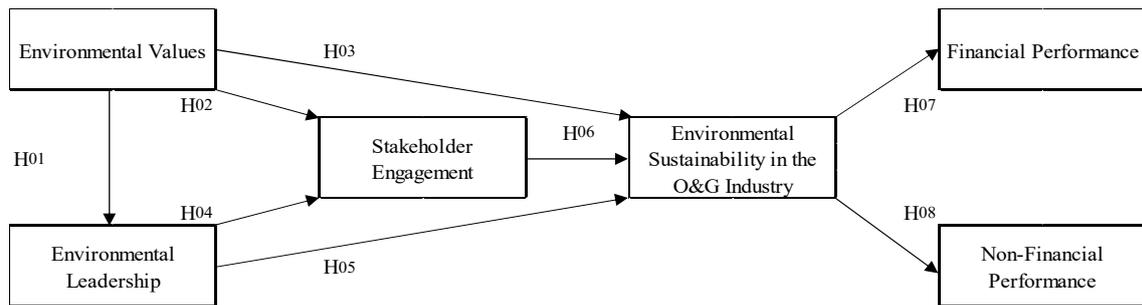
This study adapts Jang et al.'s (2017) research framework in Figure 1 to investigate how the restaurant industry promotes environmental sustainability. This framework examines how environmental values, leadership styles, stakeholder engagement, and sustainability practices influence business performance. Jang et al. (2017) highlight stakeholder engagement as key to fostering environmental commitment, with leadership playing a vital role. Additionally, the framework suggests that environmental sustainability benefits restaurants financially and non-financially. Managers with strong environmental ethics are more likely to prioritize eco-friendly practices and technologies, even if they impact short-term profits (Chen et al., 2013). This can lead to a stronger environmental reputation and reduced environmental impact.

Figure 1: Conceptual Framework. Source: Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. By: Yoon Jung Jang, Tianshu Zeng, Robert Bosselman



The operating framework for the influence of oil and gas industry managers' stakeholder engagement, leadership, and environmental values on promoting environmental sustainability and Corporate Financial Performance in the Philippines shown in Figure 2 is anchored from Jang's research framework.

Figure 2: Operating Framework.



The independent variables for this study were managers' Environmental Values, Environmental Leadership, and Stakeholder Engagement. Environmental values refer to managers' personal beliefs, attitudes, and ethical considerations regarding environmental sustainability. Environmental leadership refers to the approach managers use to influence environmental sustainability. Stakeholder engagement refers to how managers engage with various stakeholders (e.g., employees, communities, and regulators) to promote sustainable practices. The dependent variables were environmental sustainability and Corporate Financial Performance. Environmental sustainability incorporates practices implemented in the oil and gas sectors. Corporate financial performance is classified into two variables: financial and non-financial performance. These variables were measured to determine the effects of implementing environmentally sustainable practices.

1.3. Significance of the Study

Investigating the influence of environmental values, stakeholder engagement, and leadership among managers in the oil and gas industry on environmental sustainability promotion and corporate financial performance (financial and non-financial) in the Philippines is important for several reasons. In addition to its contribution to scholarly research on Corporate Social Responsibility, environmental sustainability, and environmental management, it can facilitate social responsibility, policy formation, environmental preservation, global and national development objectives, and stakeholder collaboration. This study investigates proactive measures that industry managers can take to reduce environmental impact, promote public trust, and strengthen an industry's social license to operate. The expected outcomes of this research will benefit both academic and industrial stakeholders. Academics will gain insights for further research, and the oil and gas industry can utilize these findings to develop targeted environmental policies, refine corporate strategies, and develop leadership training programs. These advancements can support the alignment of industry with national sustainability goals and global best practices.

1.4. Hypotheses

The following null hypotheses were tested based on the operational framework and research objectives:

- H₀₁:** The environmental values of oil and gas industry managers do not significantly influence environmental leadership.
- H₀₂:** The environmental values of oil and gas industry managers do not significantly influence stakeholder engagement.
- H₀₃:** The environmental values of oil and gas industry managers do not significantly influence the promotion of environmental sustainability.
- H₀₄:** The environmental leadership of oil and gas industry managers do not significantly influence stakeholder engagement.
- H₀₅:** The environmental leadership of oil and gas industry managers do not significantly influence environmental sustainability.
- H₀₆:** Stakeholder Engagement of oil and gas industry managers do not significantly influence environmental sustainability.
- H₀₇:** Environmental sustainability in the oil and gas industry do not significantly influence financial performance.
- H₀₈:** Environmental sustainability in the oil and gas industry do not significantly influence non-financial performance.

2. MATERIALS AND METHODS

2.1 Research Design

This study employed a quantitative research design that involved a descriptive and causal approach to determine how managers' environmental values, leadership, and stakeholder engagement affect environmental sustainability and corporate financial performance in the oil and gas industry in the Philippines.

2.2. Respondents Profile

The study respondents were managers of oil and gas companies in the Philippines. This study targets managers consisting of entry-level, middle-level, and top-level managers. Managers are key internal drivers of environmental sustainability. Managers play a pivotal role in decision-making, resource allocation, and shaping an organization's culture.

2.3. Sampling Design

Purposive Random Sampling is a method that involves selecting key individuals or cases that fulfill the research objectives. This approach combines the benefits of purposive and random sampling, as explained by Denieffe (2020). It is typically used when researchers aim to ensure that certain subgroups are represented in the sample while maintaining an element of randomness in the selection process. Purposive sampling allows researchers to deliberately choose participants with specific characteristics or experiences pertinent to the research question, ensuring that the sample is tailored to address the study's objectives.

2.4. Research Tools and Instruments

The survey form was electronically sent to the respondents contained six factors: Environmental Sustainability (10 items), Financial Performance (four items), Non-financial Performance (four items), Environmental Values (ten items), Environmental Leadership (ten items), and Stakeholder Engagement (seven items). There were 45 items for all factors. A total of 250 questionnaires were sent to the email addresses of the Oil and Gas industry managers, and some were contacted through LinkedIn and other social media accounts of managers who were hesitant to share their responses using their company email addresses or even in their personal email addresses citing data privacy protocols. Table 1 describes the respondent's role in the oil and gas industry and the corresponding number of respondents from each role.

Table 1: Descriptive statistics of respondents

Respondent's Role	Counts	% Total
Entry Level Manager	88	43.80%
Middle Level Manager	92	45.80%
Top Level Manager	21	10.40%
Total Respondents	201	100.00%

The survey instrument underwent a pilot study to test its validity and reliability before actual data gathering. Twenty respondents were considered for the Pilot tests and were excluded from the main data. Conducting a pilot test ensures the clarity of the study, is feasible and realistic, and yields meaningful data (Academy and Academy, 2024). Cronbach's alpha is a measure of internal consistency and is often referred to as the reliability of a set of items or scales in a questionnaire. This scale assesses whether a group of items measures a single unidimensional latent construct. When the alpha coefficient is high, it suggests that the items have a shared covariance and likely measure the same underlying concept. The common threshold for an acceptable Cronbach's alpha is 0.7, or higher (Cronbach 1951). As shown in Table 2, the Cronbach's alpha values for all factors were in the range of 0.874 to 0.962 which indicates a high level of reliability and will be effective in determining the objective of this study.

Table 2: Reliability Test Results of Pilot Study

Factors	Items	α
Environmental Sustainability	10	0.913
Financial Performance	4	0.861
Non-Financial Performance	4	0.868
Environmental Values	10	0.972
Environmental Leadership	10	0.959
Stakeholder Engagement	7	0.950

The survey instrument was developed by adapting it to previous research based on the United Nations' SDG Goals. Ten items pertaining to environmental sustainability strategies and practices in the oil and gas industry were sourced from Jeremiah et al. (2022) and Orazalin and Mahmood (2018). These items focus on reducing greenhouse gas emissions, water and waste management, biodiversity conservation, and energy efficiency. Ten items concerning the environmental value of managers in the oil and gas industry were derived from Jeremiah et al. (2022), Fernandez-Gonzalez (2022), Chutcheva et al. (2022), and Abor and Karimu (2023). These items involve applying sustainable development principles to maintain economic development while protecting the environment, using less energy, reducing carbon dioxide emissions, adhering to local and international environmental policies, and implementing the highest standards for management and technology to safeguard the environment. Finally, ten items assessing environmental leadership were based on studies by Boeske (2023), Jeremiah et al. (2022), and Abor and Karimu (2023), and evaluated the respondent's leadership style using a series of statements on transformational environmental leadership.

The assessment criteria for stakeholder engagement in promoting environmental sustainability in the oil and gas industry were sourced from Dani (2021), Jeremiah et al. (2023), and Prpich et al. (2018). These seven (7) items help companies gauge stakeholder preferences, levels of engagement, and the potential impact of their plans and actions on stakeholder goals. The evaluation of financial performance is based on Pham et al. (2021) and Jang et al. (2017), who consider managers' personal knowledge of their company's sales growth, return on investment (ROI), profits, etc., in relation to environmental sustainability. Non-financial performance assessment relies on Allui and Pinto (2022) and focuses on employee and customer motivation, engagement, and company reputation. These questions gauge respondents' understanding of financial metrics, their assessment of the company's financial health, their perception of the company's environmental performance, and their perception of the relationship between environmental sustainability and corporate financial performance.

The study employed a seven-point Likert-type scale to assess respondents' levels of agreement or disagreement with various statements. The categories included in the scale were 1) Strongly Disagree, 2) Disagree, 3) Somewhat Disagree, 4) Neutral, 5) Somewhat Agree, 6) Agree, and 7) Strongly Agree. This comprehensive scale was designed to enable respondents to express their views on environmental sustainability practices in the oil and gas sector, as well as on the environmental values of managers, leadership, stakeholder engagement, and corporate financial performance. Respondents were required to indicate their level of agreement or disagreement with each statement as shown in Table 3.

Table 3: Likert Scale Response Scale

Factors	Items	Response Scale
Environmental Sustainability	10	1 - Strongly Disagree
Financial Performance	4	2 - Disagree
Non-Financial Performance	4	3 - Somewhat Disagree
Environmental Values	10	4 - Neutral
Environmental Leadership	10	5 - Somewhat Agree
Stakeholder Engagement	7	6 - Agree
		7 - Strongly Disagree

The Likert scale is a popular tool for evaluating attitudes, behaviors, and opinions. Participants chose the response option that best reflected their views on a given statement or question. This scale is effective because of its range of options (Bhandari, 2023). Studies have shown that Likert scales are commonly used in psychological research to measure agreement or

disagreement with statements (Cheng et al., 2021). This scale provides a structured format for individuals to express their attitudes or opinions on a particular topic. Researchers suggest that a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) offers an appropriate number of options (Cheng et al., 2021).

2.5. Data Analysis and Interpretation

SPSS 22 and AMOS 22 were used for the data analyses. The mean and standard deviation for each construct were also calculated. The result of the Likert-Scale Level of Agreement interpretation in terms of average means of each factor for each respondent were evaluated according to Table 4.

Table 4: Mean Data Analysis and Interpretation

Factors	Mean Range	Interpretation
Environmental Sustainability	1.000 - 1.857	Highly opposes the statements
Financial Performance	1.858 - 2.715	Moderately opposes the statements
Non-Financial Performance	2.716 - 3.573	Slight reservations on the statements
Environmental Values	3.574 - 4.431	No opinion on the statements
Environmental Leadership	4.432 - 5.289	Slight agreement on the statements
Stakeholder Engagement	5.290 - 6.147	Moderately agrees the statements
	6.148 - 7.000	Highly agrees to the statements

The level of similarity between the variables, sample size, and degree of factor determinacy are the most important factors that determine the sample size required for structural equation models. The minimum sample size required for SEM varies, depending on the model and its properties. Various rules of thumb have been proposed, including a minimum sample size of 100 or 200 observations, 5 or 10 observations per estimated parameter, and 10 cases per variable (Wolf et al., 2013). In this study, a target response range of 200–300 is desired.

According to Bagozzi and Yi (2011), SEM allows researchers to explicitly model and estimate random or measurement errors in latent variable indicators. SEM helps purge the focal parameters corresponding to the hypotheses of biases, leading to a more accurate estimation of causal relationships. Based on a study by Fan et al. (2016), SEM allows for the testing and evaluation of multivariate causal relationships, making it possible to analyze complex networks of causal relationships in various fields. Furthermore, SEM tests the direct and indirect effects on assumed causal relationships, providing a comprehensive understanding of the relationships between variables. SEM allows for the inclusion of latent variables that are not directly observed but are inferred from other variables (Zhou and Song, 2023). Finally, SEM allows for the joint estimation of all parameters of a mediation model in a single analysis.

For this study, the path estimates and p-value were used to evaluate the influence and significance of each of the hypothesis of this study. The standardized path estimate coefficient represents the strength and direction of the relationship between variables. A positive value corresponds to a positive influence. The p-values < 0.001 are considered significant and indicates the significance of each variable in influencing environmental sustainability. Additional parameters that were included in the evaluation of the results are the Standard Error (S.E.) and the Confidence Interval (C.I.). A smaller S.E. means the estimate is less likely to deviate significantly from the true population value. A smaller S.E. leads to a narrower confidence interval, indicating a higher degree of certainty about the estimate.

2.6. Ethical Considerations

This study on the influence of managers' environmental values, leadership style, and stakeholder engagement in promoting environmental sustainability and corporate financial performance in the Philippines' oil and gas industry adheres to rigorous ethical standards to protect the rights and well-being of participants. Participants will be provided with detailed information about the study's purpose, procedures, potential risks, and benefits.

Informed consent will be obtained before data collection, ensuring that participants voluntarily agree to participate (American Psychological Association, 2017). Participation in the study will be entirely voluntary, and participants will have

the right to withdraw at any stage without facing any consequences. This will be communicated through an informed consent form. The participants' confidentiality was strictly maintained.

Personal identifiers were removed. Confidentiality measures will be explicitly outlined in the informed consent form. Participants' privacy was safeguarded throughout the research process. Data will be stored securely, and only authorized researchers will have access to this information. The researchers disclose any potential conflicts of interest that could influence the objectivity of the study. Transparency in reporting financial or personal connections related to the research topic was maintained. The research protocol, including ethical considerations, will be submitted to and approved by an ethics committee prior to data collection.

3. RESULTS AND DISCUSSIONS

3.1. Descriptive Statistics

Table 5 describes the average scores of all variables, except Financial Performance, were above 6.1, suggesting that the respondents moderately to highly agrees to the statements. This indicates a shared understanding of the items within the variables and their impacts on Environmental Sustainability. The standard deviation for these variables was relatively low, indicating that most respondents' answers were close to the average and clustered together. In contrast, the mean value of Financial Performance was 4.76, with a standard deviation of 1.360. This suggests that the respondents slightly agree to the statements and has diverse opinions on how Financial Performance affects Environmental Sustainability. This finding indicates that managers perceive environmental sustainability more as a non-financial benefit. The Cronbach's values of the main variables of the study were above 0.7, indicating strong internal consistency.

Table 5: Descriptive Statistics

Factors and Items	Mean	SD	Interpretation
Environmental Sustainability ($\alpha = 0.920$)	6.137	0.925	Moderately agrees to the statements
Financial Performance ($\alpha = 0.962$)	4.76	1.433	Slightly agrees to the statements
Non-Financial Performance ($\alpha = 0.874$)	6.145	0.927	Moderately agrees to the statements
Environmental Values ($\alpha = 0.954$)	6.549	0.778	Highly agrees to the statements
Environmental Leadership ($\alpha = 0.946$)	6.521	0.769	Highly agrees to the statements
Stakeholder Engagement ($\alpha = 0.950$)	6.437	0.840	Highly agrees to the statements

3.2. SEM Model and Hypothesis Tests

The resulting SEM modelling in Figure 3 confirms the satisfactory model fit of the research framework ($X^2 / dF = 2.086$; CFI = 0.902; IFI = 0.903; RMSEA = 0.074). The resulting structural model shows that environmental values positively influence stakeholder engagement, environmental leadership and environmental sustainability. Stakeholder engagement positively influences Environmental Sustainability. These factors result to a positive effect on both financial and non-financial performance. Surprisingly, environmental leadership, does not have a direct influence on environmental sustainability.

Figure 3: SEM Modelling Result ($X^2 / dF = 2.086$; CFI = 0.902; IFI = 0.903; RMSEA = 0.074)

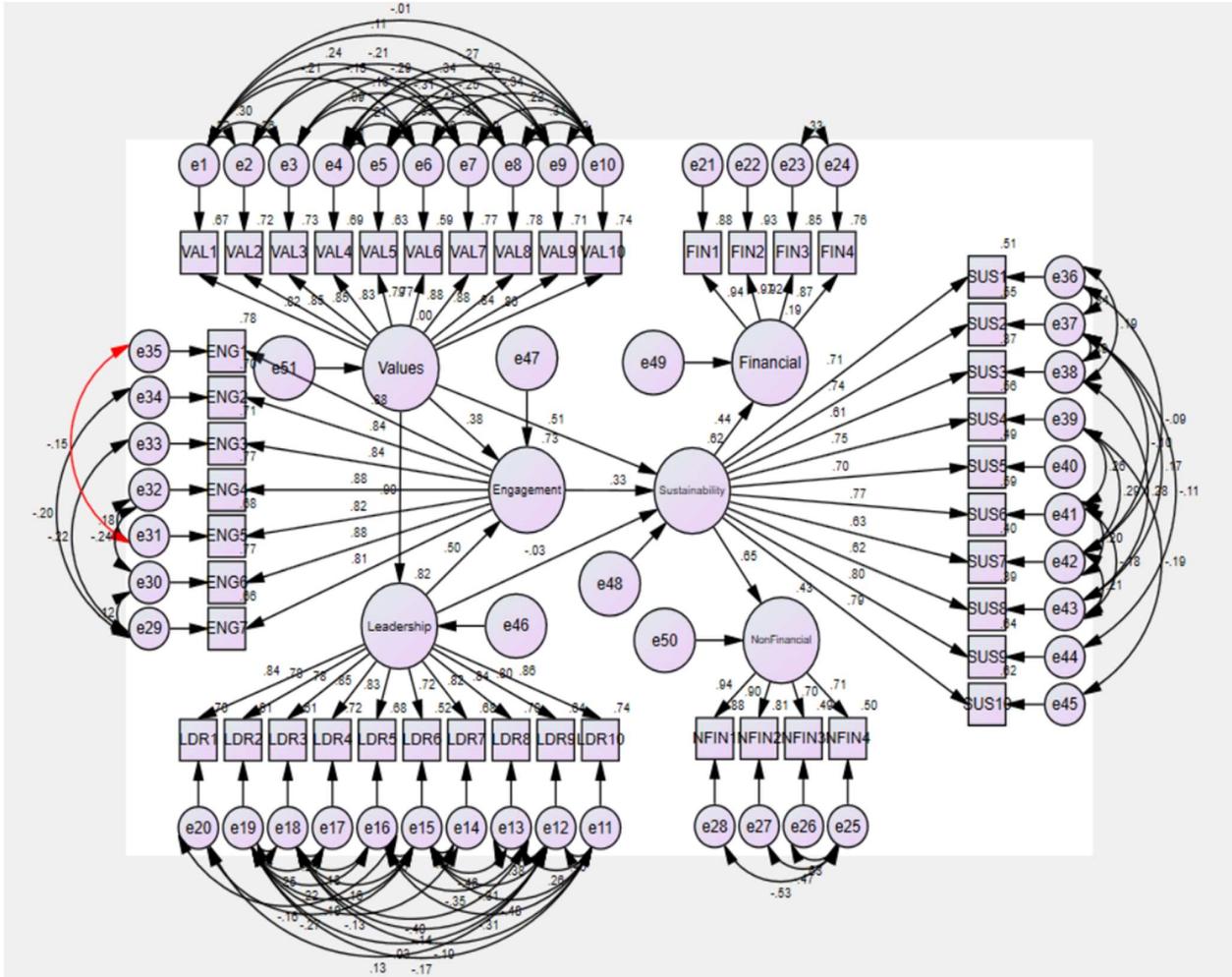


Table 6 describes the Regression Analysis results of the SEM Model. Environmental leadership is significantly and positively influenced by environmental values (Est = 0.88, S.E = 0.066, C.R = 13.34, $p < 0.001$), which rejects the null hypothesis H_{01} . This finding indicates that managers’ environmental values have a positive influence on their leadership, leading to positive changes for a sustainable future. This is supported by the study of Spash (2022), wherein environmental values play a significant role in shaping the mindset, actions, and impacts of environmental leaders

Table 6: Regression Analysis Results

	Causal Relationship Paths		Std Estimate	S.E.	C.R.	p	Influence
H01	Values	Leadership	0.881	0.066	13.34	***	Significant
H02	Values	Engagement	0.474	0.14	3.382	***	Significant
H03	Values	Sustainability	0.599	0.168	3.563	***	Significant
H04	Leadership	Engagement	0.636	0.147	4.319	***	Significant
H05	Leadership	Sustainability	-0.032	0.171	-0.187	0.852	Not Significant
H06	Engagement	Sustainability	0.314	0.102	3.076	0.002	Significant
H07	Sustainability	Financial Performance	0.855	0.148	5.772	***	Significant
H08	Sustainability	Non-Financial Performance	0.728	0.105	6.93	***	Significant

Note: *** $p < 0.001$

Environmental values have a substantial and statistically significant impact on stakeholder engagement (Est = 0.474, S.E. = 0.14, C.R. = 3.382, $p < 0.001$), which rejects the null hypothesis H_{02} . This finding suggests that managers' environmental values positively influence stakeholders by fostering and promoting environmentally sustainable practices through cooperation and alliances. This is supported by Su et al. (2020), leaders who prioritize environmental values can significantly impact green culture, stakeholder engagement, environmental management, strategic corporate social responsibility (CSR), and environmental behavior.

Environmental values have a substantial and statistically significant effect on environmental sustainability (Est = 0.599, S.E. = 0.168, C.R. = 3.563, $p < 0.001$), leading to rejection of the null hypothesis H_{03} . These indicate that a manager's ethical environmental values can influence environmental sustainability by directing people's actions towards the environment. Shien et al. (2022) says that sustainability awareness and moral values can influence the implementation of environmental laws, thereby leading to improved environmental sustainability performance.

The impact of environmental leadership on stakeholder engagement is significant and positive (Est = 0.636, S.E.=0.147, C.R.=4.319, $p < 0.001$), leading to rejection of the null hypothesis H_{04} . This finding suggests that environmental leadership can effectively define objectives and set specific goals to achieve and promote environmentally sustainable practices through collaboration between internal and external stakeholders. This supports the claim of Wells et al. (2021) wherein they said that when stakeholders are engaged and their interests considered, it leads to improved decision-making, enhanced project outcomes, and greater social and environmental sustainability.

Environmental leadership is found to have a negligible impact on environmental sustainability (Est = -0.032, S.E. = 0.171, C.R.= -0.187, $p = 0.852$) thus null hypothesis H_{05} is accepted, indicating that managers' environmental leadership does not have a direct influence on promoting environmental sustainability. This contradicts previous studies; however, this result affirms other studies. According to Boeske (2023), environmental leadership can negatively influence environmental sustainability by some key factors like lack of vision and strategy, inadequate stakeholder engagement, short-term focus, insufficient resource allocation, and resistance to change. In the context of Filipino leadership and sustainability practices, Charoensukmongkol and Puyod (2021) asserts that the cultural value of high-power distance in Filipino society, where individuals expect and respect hierarchical authority, may hinder the open communication and collaboration necessary for effective sustainability initiatives.

Stakeholder engagement has a statistically significant influence on environmental sustainability (Est = 0.314, S.E. = 0.102, C.R. = 3.076, $p = 0.002$), thus rejecting the null hypothesis H_{06} . This finding underscores the pivotal role of managers who engage stakeholders in shaping environmental sustainability by fostering cooperation between internal and external stakeholders, thereby enabling a combination of diverse viewpoints and resources for constructive change. This is supporting the study of Lee (2019) wherein the author stipulates that achieving successful environmental sustainability in the oil and gas means effectively managing resources and stakeholders.

Environmental sustainability has a noteworthy and statistically significant impact on both the financial and non-financial performance of companies, according to the results of the study (Est. = 0.855, S.E. = 0.148, C.R. = 5.722, $p < 0.001$) and (Est. = 0.728, S.E. = 0.105, C.R. 6.93; $p < 0.001$), respectively. This evidence rejects null hypotheses H_{07} and H_{08} , indicating that environmental sustainability can drive companies' financial performance. This supports the studies of Doni et al. (2021), Pham et al. (2021) and Kujala et al. (2022) that reducing expenses, increasing revenue, and minimizing risks, taking responsibility for the environment can provide a competitive edge and contribute to long-term financial success. Moreover, non-financial gains can be observed in employee and customer relationships, as employees tend to be more enthusiastic about their work and customer satisfaction is heightened, leading to retention.

Based on the established causal relationship paths, all null hypothesis except H_{05} is rejected. Table 7 below describes the summary of the hypothesis test of this research.

Table 7: Hypotheses Test Results

	Hypotheses Statements of the Study	Result	Action
H01	The environmental values of oil and gas industry managers do not significantly influence environmental leadership	Significant	Rejected
H02	The environmental values of oil and gas industry managers do not significantly influence stakeholder engagement.	Significant	Rejected
H03	The environmental values of oil and gas industry managers do not significantly influence environmental sustainability.	Significant	Rejected
H04	The environmental leadership of oil and gas industry managers do not significantly influence stakeholder engagement.	Significant	Rejected
H05	The environmental leadership of oil and gas industry managers do not significantly influence environmental sustainability.	Not Significant	Failed to Reject
H06	Stakeholder Engagement of oil and gas industry managers do not significantly influence environmental sustainability	Significant	Rejected
H07	Environmental sustainability in the oil and gas industry do not significantly influence financial performance.	Significant	Rejected
H08	Environmental sustainability in the oil and gas industry do not significantly influence non-financial performance.	Significant	Rejected

3.3. Mediation Analysis

Mediation analysis is crucial for uncovering the mechanisms through which independent variables affect the dependent variables through mediator variables (Hayes, 2018). This technique enables researchers to distinguish between direct and indirect effects. Understanding the underlying mechanisms involves examining the indirect effects on the outcome variable during mediation analysis (Turns & Ernst, 2019).

Bootstrap testing was performed to evaluate the mediation effect as suggested by Preacher and Hayes (2008). Bootstrapping is a widely used statistical method in mediation analysis that estimates the indirect effect of an independent variable on a dependent variable by using a proposed mediator variable. This technique is essential for understanding the pathway through which an independent variable affects a dependent variable. The indirect effect represents the influence of the independent variable on the dependent variable operating via the mediator variable. Bootstrapping is a critical technique in mediation analysis because of its robustness and flexibility in estimating indirect effects and their confidence intervals. Researchers often employ bootstrapping methods to estimate indirect effects and their confidence intervals in mediation models to determine their significance of indirect effects (Bolin, 2014).

In Table 7, The indirect effects of environmental values on the promotion of environmental sustainability (Est. = 0.297, C.I. = -0.035 – 0.609, $p = 0.064$) is not significant. Environmental values have a significant indirect effect on non-financial performance and financial Performance, mediated through environmental sustainability. This suggests that organizations with stronger environmental values are more likely to achieve better performance outcomes by adopting sustainable practices. The direct effect of environmental leadership on promoting environmental sustainability was not as significant as established in this research, however, environmental leadership has an indirect effect on environmental sustainability (Est. = 0.2, C.I. = 0.058 – 0.4, $p = 0.003$) and is significant. This means that managers' environmental leadership do not directly translate into better sustainability practices but is likely influenced by stakeholder engagement. Stakeholder Engagement has a significant indirect effect on both non-financial performance (Est. = 0.229, C.I. = 0.079 - 0.401, $p = 0.003$) and financial performance (Est. = 0.269, C.I. = 0.084 - 0.496, $p = 0.003$), mediated through Environmental Sustainability.

Table 7: Mediation Test Results

Independent Variables	Dependent Variables	Indirect Effect	C.I.	p	Significance
Environmental Values	Environmental Sustainability	0.297	-0.035 - 0.609	0.064	not significant
	Non-Financial Performance	0.652	0.433 - 0.886	0.001	significant
	Financial Performance	0.766	0.486 - 1.08	0.001	significant
Environmental Leadership	Environmental Sustainability	0.200	0.058 - 0.4	0.003	significant
	Non-Financial Performance	0.122	-0.134 - 0.404	0.333	not significant
	Financial Performance	0.144	-0.16 - 0.473	0.333	not significant
Stakeholder Engagement	Environmental Sustainability	0	0	0	not significant
	Non-Financial Performance	0.229	0.079 - 0.401	0.003	significant
	Financial Performance	0.269	0.084 - 0.496	0.003	significant

4. CONCLUSION

The results of the SEM analysis demonstrate a strong model fit, confirming the validity of the research framework. The study reveals that environmental values significantly influence stakeholder engagement, environmental leadership, and environmental sustainability. Additionally, stakeholder engagement plays a crucial role in promoting environmental sustainability. These factors collectively contribute to positive impacts on both financial and non-financial performance. While environmental leadership does not directly influence environmental sustainability, it indirectly affects it through its impact on stakeholder engagement. Overall, the findings emphasize the importance of cultivating a strong environmental culture within organizations to achieve long-term success. In conclusion, cultivating environmental values among managers and building strong stakeholder engagement are crucial for the Philippine oil and gas industry to achieve environmental and financial success. Effective Corporate Social Responsibility (CSR) programs and continuous training and development for oil and gas managers on environmental sustainability can play a significant role in driving these initiatives.

5. RECOMMENDATIONS

To assert the findings of the study, three action items are recommended for the oil and gas industry. First, foster a culture of environmental stewardship, this requires the development and implementation of training programs for managers that emphasize the importance of environmental sustainability and its benefits to financial performance. Integrating environmental sustainability into existing performance metrics and a corresponding reward system for managers can support fostering environmental stewardship. Second, reinforce stakeholder engagement, this requires establishing clear channels of communication and collaboration between stakeholders and the oil and gas industry. Managers should conduct regular stakeholder engagement activities like workshops or open forums to gather feedback and address concerns. This will also require the implementation of robust Corporate Social Responsibility (CSR) programs to demonstrate the commitment for environmental responsibility and community well-being. Lastly, explore and implement long-term environmental sustainability strategies, the oil and gas sector should conduct a cost-benefit analysis of potential environmental sustainability investments to evaluate long-term financial benefits. Exploring opportunities like partnerships with suppliers and vendors who prioritize sustainable practices can also be done for long-term strategies.

For future researchers, it is recommended to investigate how cultural factors influence the relationship between environmental values, leadership, stakeholder engagement, and sustainability outcomes in different contexts. It is also recommended to consider collecting data from the same individuals or groups over an extended period. This allows researchers to observe how variables change over time, making it possible to identify trends, patterns, and causal relationships. Furthermore, investigate also the role of emerging technologies in driving environmental sustainability and the impact on managerial practices.

6. LIMITATIONS OF THE STUDY

The study's findings on financial and non-financial performance relied solely on self-reported data from entry to mid-level managers. To strengthen these conclusions, future research should incorporate objective financial and non-financial metrics from the industry. These self-reported responses may also introduce biases. Additionally, expanding the respondent pool to include higher-level executives from professional oil and gas associations could provide a more comprehensive understanding of the relationship between environmental sustainability and corporate financial performance. Despite these limitations, the study provides valuable insights into the factors influencing environmental sustainability in the Philippine oil and gas industry. Future research can build upon these findings to expand it to other industries and see which factors influence their environmental sustainability and corporate financial performance.

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