

Gender Effect and the Mediating Role of Work Ethics on the Relationship between Leadership Style and Organizational Culture towards Supply Chain Managerial Efficiency (Study on Yemeni Oil and Gas Industry).

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Abstract: The link between leadership styles and managerial efficiency is well established in literature. However, the role of work ethics, particularly as a mediator, is not well explored in sufficient depth. The objective of this research is therefore to study the effects of both gender, and whether work ethics play a mediating role, on the relationships connecting leadership style, organisational culture and managerial efficiency within the oil and gas industry in Yemen. The study utilised a cross-sectional survey design, sampling 297 middle managers from 13 oil and gas firms in Yemen. Data was collected using a structured questionnaire, and results were analysed statistically using the Partial-Least-Squares technique, utilising Smart-PLS 3 software. Empirical results indicated that leadership styles have both positive and direct effects on managerial efficiency. Furthermore, work ethics were found to significantly mediate the relationships between transactional and participative leadership styles, organisational culture, and managerial efficiency. However, the results also showed that work ethics does not significantly mediate between transformational leadership styles (TRL) and managerial efficiency. The study has implications for top management in the oil and gas industry, offering an opportunity to capitalise on enhancing managerial efficiency by encouraging good leadership styles and management practices that would positively enhance efficiency. Such practices should be made part of the organizational culture, with the goal of creating a harmonious working environment that enables and improves the performance of the firm as a whole.

Keywords— *Leadership Styles, Managerial efficiency, Oil and Gas, Organisational culture, Work ethics.*

1.0 Introduction

In the modern, era, for each country to survive, its core areas of concern should be the sustainable exploitation of its unique competitive advantages. For any oil and gas reliant country, the hydrocarbon industry is the kernel of its economy, and holds the key to the country's survival and future competitiveness. Such concerns are highly

dependent on effective governance and management practices within the oil and gas sectors, as they contribute substantially to the country's economic growth. Effective governance and management are fundamental values in such vital industries, and are themselves built by the extent to which the organisation is effectively run by the management, the culture of the organisation, and the embracing of work ethics.

The modern challenges of globalisation have called for a significant enhancement of the services offered by the oil and gas sector to improve competitive advantage.[1]. As put forward by [2], the phenomenon of globalisation has compelled this sector to strive to attain the highest standards of practice, in order to successfully compete for and attract global investment at the highest levels. As such, the oil and gas sector ought to have been, and should aim to be, among the very best in the world if it is to recover and sustainably revitalise the sector and national economy as a whole. Moreover, the sector depends on the effectiveness of management in allocating resources in a changing and unstable environment, amid the backdrop of economic uncertainty and insecurity.

In the globalised and challenging contemporary economy, international competition is a fact of life, and a country is dependent on its ability to leverage and make the most of its social and geographical dynamics to achieve the most satisfactory outcome. Some of the principle significant issues affecting competitiveness are managerial factors, especially in terms of skills [3].[4]opined that functional managerial effectiveness is a derivative of the cumulative synergy of three elements: the manager, the organisation, and the environment. As such, the issue of efficiency in management is primarily centred on the growth and continued existence of the organisation[5].

There is increasing consideration of managerial efficiency as an organizational competitive advantage, and its central conception is pivoted on the capacity of management to oversee itself, its subordinates, the delegation of roles, managing change, and decision-making. This informs the appreciation of the operational organizational environment [6]. The constructs of managerial efficiency are more often defined using the output/achievements of the management. As a result, the definitions for success based on the outcome, factors that lead to the achieve desired outcomes. Therefore, management's efficiency has a significant role to play in the achievement of the preferred results [7].

Several factors are assumed to affect managerial efficiency. Among these factors is the leadership construct, which is shown to have effects on the provision of managerial efficiency [3]. In line with this thinking, [8] pointed out that leaders considerably serve as role models to showcase much-needed standards of behaviour to their subordinates and more often they are the one to supervise every segment of the business operations. They further advanced by saying that decision making is generally centralized, and the overall authority and control rests within the gambit of the leaders, thus, consequently affects the efficiency of the managerial practice. Besides the styles of leadership and its effects on the management practices, organizational culture has its own significant role in affecting management efficiency, taking into consideration that an organization is a group of people sharing knowledge and information as it affects their day- to- day activities [9].

As leadership styles have an effect on the effectiveness of management, organizational culture plays a key role in influencing management efficiency, while considering that organizations are a group of individuals using knowledge and information, as part of their daily lives. Simultaneously, organizational culture and leadership style are interlinked as organizational culture is heavily shaped and influenced by the character and viewpoints of the owner-manager [10] due to their dominating influence throughout the company. Hence, the relationship between leadership structure, organizational culture, and administrative efficiency seems to be deeply interconnected [11].

There is concordance among scholars and experts of organizational behavior that managerial efficiency strongly correlates with organizational performances [7], [12]. But, prior to the application of management efficiency principles, scholars posited that countries' cultural differences need to be considered. In line with this, [13], opined that management efficiency is wholly dependent on specific culture and by implication every country should develop its own managerial efficiency system.

The concept of culture and cultural differences across national borders is used widely in international management, human resource development and organizational behavior [14]. As managerial efficiency is culture specific, in order to develop managerial efficiency, every individual nation and cultural society would need to change their individual model [8]. Thus, this study is an effort to contribute an understanding of how the three variables of styles of leadership, managerial efficiency and Organizational culture interact in the cultural context of Yemen [15].

Within the managerial efficiency literature, there is the emergence of an important concept that is believed to have a mediating effect on the relationship connecting the style of leadership and the culture of the organization from one side, and the management efficiency of organizational performance [16] on the other side; this is called work ethics. In general, studying individuals' comprehension of what constitutes 'correct'. As adduced by [17], ethics is related to doing what is right and fair, more so than what laws say is right and needed. [14] averred that ethics refers to good or right in peoples' interactions and centred on three main concepts; self, good, and other. When people consider not only what is good for them but also what is good for others, then that is ethical behavior [18]. Ethics in an organization is seen as a standard of conduct for the organization as ethics are established and applied in the organization with a view to safeguard the respect and interests of everybody involved. Therefore, consider organizational ethics as those values and standards that can be observed in the business interaction and those that are involved in it.

However, notwithstanding some considerable research into styles of leadership, and the culture of organisations, as well as their relationships with

managerial efficiency, such studies have rarely been conducted in the context of the Arabian region, and are particularly rare in Yemen [19]. More so, no study was reported to have been carried out in the oil and gas environment that examines these relationships, especially with the mediating effect of work ethics. Hence, the motive of the present research is to fill this gap by examining this concept, so as to contribute empirically and to the extant theory concerning managerial efficiency. Furthermore, the results of this paper will provide insights into the current happenings in the oil and gas environment, especially among the Arab business population [20].

2.0 Literature Review

Leaders who are effective can play a vital part in the successful performance of their organisations [21]. Such a leader will typically nurture and facilitate progress-oriented culture within the organisation. This is often done by focusing on employee motivation and satisfaction, setting a clear vision and goals for subordinates to aim for, and generally working to usher individual efforts towards the collective outcome [22]. All these tasks are difficult to accomplish, and they highlight the critical roles a leader must take on to protect the organisation's progress towards its goals. This includes identifying and satisfying employee needs, while incorporating and consolidating all the required resources in order to achieve the desired outcomes [23].

Previous studies have highlighted that modern leaders cannot just issue orders and expect results from their subordinates. Rather, modern leadership requires collective thinking from individual team members to safeguard their organisational interests, by identifying the required actions for each individual, and incorporate the required resources at the correct moment, to achieve the desired collective objective [24].

According to [7]- [25] managerial efficiency is "the full measure of the combined effect of management, teaming, and leadership skills on corporate productivity". [26] defined managerial efficiency as "the act, manner, or practice, of managing and controlling organizational resources to achieve the required objectives" They explained it as a social process intended to foster coordination, interaction, and innovation in order to achieve the output required. [27] refer to managerial efficiency as the

formation of desired socio-economic environment for organizational activity, to enhance the achievement of targets and objectives set by leadership. Goals are also expected to be achieved within a set time period, within a certain range of quantifiable outcomes, at a high quality, and with the greatest efficiency of resources.

Various academic studies have often considered the changing nature of work ethics within dynamic socio-economic and religious environments within the West. Such studies, as discussed below, often highlight that the economic growth and prosperity in the Anglosphere and European markets gave rise to novel styles of entrepreneurship, which consequently altered the very nature and concept of 'work'. [1] suggested that since the industrial revolution took place in the late 18th century, workers have questioned why they would want to engage in the demanding and novel jobs that arose.

[28] suggest that the response to this question may have come from the employer rather than the employee himself. Employers often pointed to various theories of 'productivity', and offered employees working environments that they promised would engage mind, body and spirit. [29] therefore suggests that the conceptualisation of 'work ethic' was essential to easing the transition into the new and innovative, highly social workplaces of industrialisation [29].

It may be the case that widespread research and interest around work ethic arose out of the religious and economic circumstances in the 19th century. Before industrialisation, work was not regarded as something of high esteem. Certainly, prevailing social and religious attitudes towards work were not over whelming positive, as noted by Adam Smith himself, in his seminal work "The Wealth of Nations". [30] wrote about businessmen disparagingly, saying that they are "men whose interests are never the same as the general public, who generally seek to deceive and even oppress the public, and who often succeed in doing so". [21].

[21] seem to agree that work ethic is a phenomenon linked to the 19th century. Such researchers, and others, conclude that work ethic was produced out of necessity at the dawn of industrialisation and contemporary capitalism.

According to [31], management or leadership style is a method that allows managers to use their authority

in the workplace to achieve their goals. It includes information on how managers plan and organize work in their areas of responsibility, especially how they interact and relate to colleagues and team members. This construct is vital towards the efforts of any managerial field [27], therefore argues that the presence or absence of leaders who are effective may be responsible for the success or failure of groups, organizations and even entire countries.

The concept of leadership has been extensively discussed in literature. It is regarded as the means through which an individual uses to lead others [11]. Most leadership research has concentrated only on the leader's past personality and actions. New leadership research has differently approached the orientation of leadership styles [22]. The leadership has several meanings and more often the various connotations are regarded to be synonymous, hence, are by the same token complex in nature. These include power, authority, management, administration and supervision [24]-[28].

[32] consider 'Leadership' as a process of social effectiveness which a leader uses to explore, seek, and mobilize the follower's intentional participation with a view to attain the interest and goal of an organization. In line with this thinking, an effective leader influences his followers in a desirable manner to attain organizational goals efficiently [11], [32]. Leadership is a vital management function that supports maximization of efficient achievement of set goals in organizations. Broadly speaking, leadership is therefore seen as a relationship between an individual and a group anchored on certain mutual interest in which the group acts in a way controlled or determined by the leader [7].

A leader can inspire the conduct of their subordinate using several styles, or approaches of leadership. While many styles of leadership exist, the researchers of this study have chosen to focus on three, namely transformational, transactional and participative. This is because of the recommendations of previous researchers, for instance [33] who suggested that supplementary studies ought to investigate the effect leaders have during other transitional crises, as they investigate them during natural crises. Additionally, [34] suggest future researchers should examine the efficiency of every aspect of transformational leadership during a crisis as a guide for leaders to respond to crises.

Furthermore, [35] found that during a period of

uncertainty, transactional leadership styles have the appropriate characteristics to aid organizations in overcoming crises. Moreover, [36] argues that it is considered that transformational leadership emerges in crisis situations, and proposes new research into this field of study. Hence, this study chose to focus on leadership styles that are transformational, transactional and participative, which are explained in detail to justify the study, making them the independent variables in this study. Other leadership styles were given serious consideration among researchers prior to the selection of these three variables.

[37]-[16] found high intensity of leadership styles and their influence on sustainability and managerial efficiency of supply chain in the oil and gas sector in India. Their findings revealed that leadership styles predict managerial efficiency and can be useful on a wider scale, as oil and gas industries are vital to the global economy. [37] also found that there is a connection between supply chain professionals and transformational leaders. Their study utilized the inductive survey approach, analyzing empirical data to conceptualize a model of middle and top level supply chain management participants, and found that it has a considerable effect on managerial efficiency.

[37] found lower performance of Bahraini supply chain companies, in comparison to Kuwait and UAE, therefore, they performed an empirical study that found workplace ethics to be a useful instrument to expedite efficient performance in supply chain. Furthermore, organizational cultures with strong ethics show more positive influence in the operational efficiency of the supply chains. [37] surveyed 150 managers in supply chain companies based in the UK. The findings support that transformational and transactional leadership have a positive influence on job performance furthermore the direct relationship between transformational leadership and supply chain performance is greater than transactional leadership.

2.1 Conceptual Framework

Literature dedicated to organizational behaviour highlights the dependence of efficiency on the relationship or alignment of the organisation, with external factors stemming from the environment [38]. The role-motivation theory of managerial efficiency/effectiveness, as well as contingency theory, helped to form the basis for this research project. The following conceptual framework in Fig.1 was created by incorporating both theories while attempting to understand the nature of the relationships between leadership style and

organizational culture (independent variables) and managerial efficiency (dependent variable). The framework further details the effect of work ethics as the mediator and gender as the moderator in the relationship.

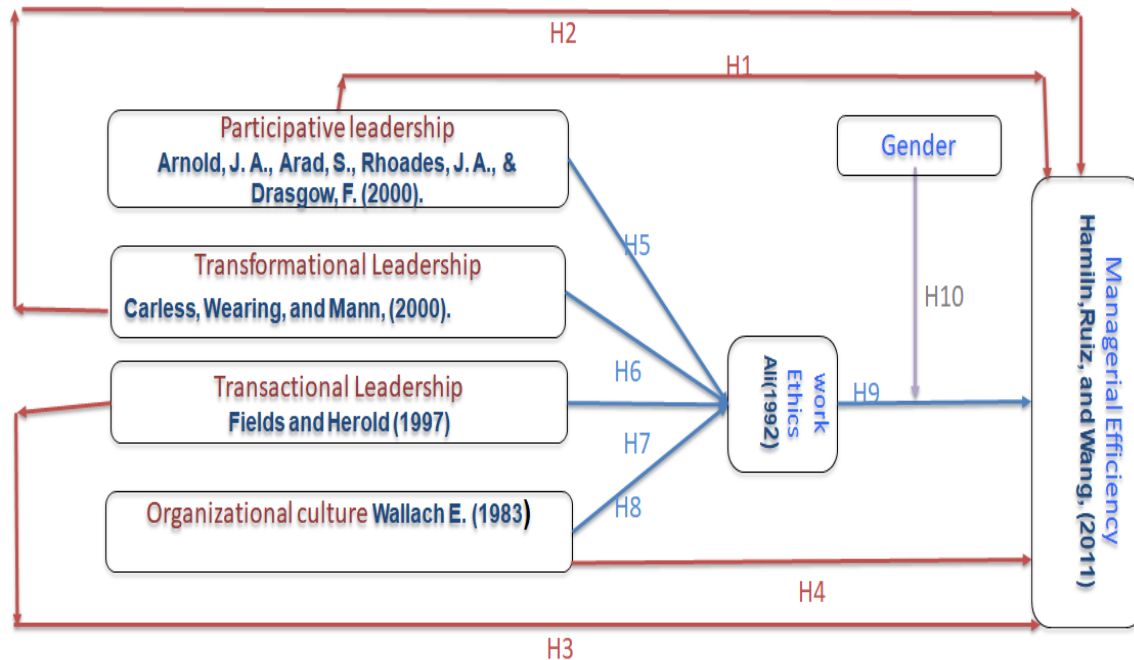


Figure 1. Conceptual Framework

3.0 Methodology

The design of this research study is quantitative approach, with survey technique as means of data collection. Primary data was used for the study through a structured questionnaire. The reason for this is to implement a quantitative approach to empirically study how strongly the reference model can measure the study construct in oil and gas environment

3.1 Population and Sampling Design

The population is the representation of the entire study subjects, including all individuals as explained by [38]. The study's population included intermediate managers who worked in gas and oil companies in Yemen. It is worth noting that from the 24 hydrocarbon companies in Yemen, only thirteen (13) gas and oil companies voluntarily agree to participate in the survey, due to security and confidentiality policies. Therefore, the total number of mid-level managers (section heads) working in the thirteen (13) gas and oil companies in Yemen is 1299 (Yemen Statistics department, 2014).

On the basis of the above population, [38] criteria for determining the size of the sample was employed for this. As there are 1299 managers forming the target population, the size of sample selected was 297 to be representative of the study population. More so, a review of the literature regarding sampling methods has revealed two dominant sampling techniques, which are either probabilistic, or non-probabilistic [39]. In this study, a non-probabilistic technique of using multi-stage sampling approach was employed.

In the first stage, the oil and gas industry in Yemen was clustered according to companies. Thirteen clusters were identified. In the second stage, a stratified technique was employed to ensure equal distribution of the samples among the mid managers in the oil and gas firms. Specifically, the present research project adopts disproportionate stratified random sampling to make sure of having a fair and equivalent participant distribution representing each section head. The table that follows (Table 1) displays the distribution of middle level managers employed by Yemeni hydrocarbon companies. Yemeni statistics department doesn't gotten any update since 2014.

Table 1. Distribution of Middle Managers in the oil and gas firms in Yemen

S/No.	Names of the firms	BLOCK	No. middle mangers
1	Safer E&P operation Co.	Marab 14	200
2	Safer E&P operation Co.	MARAB 18	
3	Safer E&P operation Co.	JANNAH 5	68
4	PetroMasilh	Masila14	190
5	PetroMasilh	East ALHAJR 51	58
6	PetroMasilh	East Saar 53	82
7	PetroMasilh	East SHABWAH 10	186
8	DNO	HWARIM 32	59
9	OCCIDENTAL	DAMIS S1	43
10	Calvally	MALIK (9)	72
11	KNOC	Wayad 4	55
12	OMV	AL-Uqlah-S2	73
13	YLNG	MARAB 18	213
	Total		1299
Source: Yemeni Statistics Department (2014)			

3.2 Instrumentation and Data Collection

As transformational, transactional and participative leadership as well as organizational culture were used as the independent variables of the present study, managerial efficiency as dependent, whereas Work Ethics as mediator, gender was used as moderator. These are the seven (7) major variables in this research project. The measurement of each of these variables is detailed as follows. The measurement for transformational leadership was adapted from [38], who established the Multifactor Leadership Questionnaire (MLQ) which is conventionally utilized in measuring transformational leadership. For transactional leadership, twelve items established by [38] for Leadership Practices Inventory were employed to measure transactional leadership. The Empowering Leadership Questionnaire developed by [40] was utilized in measuring participative leadership with six items.

For organizational culture, several measures are available for evaluating organizational culture among employees. However, a shorter version (9 items) of [41] Organizational Culture Index was utilized by this research to measure organizational culture, which has three dimensions; namely the bureaucratic, innovative, and supportive, organizational culture. For the dependent variable (managerial efficiency), eight items instrument for assess managerial efficiency developed by Hamlin et al., (2011) was used in this study. Lastly the

mediating variable was measured using a shortened variant of Work Ethics Scale created by [42] which has seventeen items assessed using a 5-point likert scale.

3.3 Data collection and Analysis

Prior to conducting the present research, permission was sought from each of the Yemeni Gas and Oil firms to carry out this research through a letter requesting the managers to give whatever assistance would be needed to facilitate this research project. The researcher went to the selected Oil and Gas firms in person with the help of other enumerators to conduct the data collection via self-administered survey method. The self-administered method is applied within this research project, where survey forms are distributed in person to the respondents and collected immediately once they are filled. As argued by [43] this helps in avoidance of procrastination in responding to the questionnaire being the local norm in Yemen, known as polychronic.

Before the commencement of the main data collection, a pilot study was performed using a sample of 35 managers currently working in the Yemeni gas and oil sector from 3 randomly selected firms. The purpose of the pilot study was to ensure the clarity of the questions and determining how relevant the questions are in yielding the relevant information. The 35 sampled middle managers

constitute 10% of the targeted sample of 297 middle managers, as recommended by Anderson, Kelley, and Maxwell, (2017), who posit that 10% of the final study size is appropriate for pilot study. These 35 managers who participated in pilot study were not included in the main data collections to ensure that no manager was selected twice. For data analysis, this research study employed descriptive and inferential statistics which were aided with computer statistical software (SPSS version 23 and Smart Partial Least Square (PLS) version 3.0).

To ensure the ethical considerations, prior consent is sought from the participants of the study and their personal freedom was assured to be greatly respected throughout the research study's duration. Moreover, the respondents were prompted with regards to their liberties and freedoms to withdraw from participation in the research at any point if they wished. Respondents were also assured that their personal information would remain confidential. In addition to this, the contact information of the researcher was provided (and those of the enumerators) to discuss any concerns respondents may raise about the project.

3.4 Profile Demographics of the Respondents

Table 2. Demographic Characteristics of the Respondents

		Frequency	%
Gender	Male	244	82%
	Female	53	18%
Age	< 30 years	9	3%
	30-39 years	125	42%
	40-49 years	151	51%
	>50 years	12	4%
Marital Status	Married	184	62%
	Single	113	38%
Education	Bachelor Degree	122	41%
	Masters	157	53%
	Others	18	6%
Income	<USD 2,000	3	1%
	USD 2,001-3,000	39	13%
	USD 3,001-4,000	68	23%
	USD 4,001-5,000	104	35%
	> USD 5,001	83	28%

4.0 Assessment of Significance of the Structural Model

Following the establishment of the measuring model's validity and reliability, the findings for the structuring model are offered next. This research project applied the method of bootstrap re-sampling using 5000 replicates and 297 cases to evaluate the

This section details the demographic profiles of the sample's participants, including age, gender, marital status, level of education, as well as income. As shown in Table 2, out of the 297 (100%) total sample respondents, 82% were male and 18% were female. Regarding age, 3% of respondents were under 30 years old, with 4% being greater than 50 years in age. The 30-39-year age bracket represented 42. % of the sample, with 155 respondents, while the largest age group ranged between 40 and 49 years, which accounted for 51 %. The result also highlights that the bulk of respondents were married (62%), while the remaining 38.0% were single. Additionally, result also highlights that a significant percentage of respondents held Master's degrees, accounting for 52.9%, followed by Bachelor degrees at 41.0, with the remaining, 6% holding other qualifications. Finally, with regards to income, Table 2. shows that 35% of the participants had salaries from USD 4,001 to USD 5,000, with the next highest group being those whose income was above USD 5,001 (28%); USD 3,001-4,000 (23%); next 13% for income between USD 2,001 and 3,000. Finally, 1% respondents were whose income was less than USD 2,000.

path coefficients significance (Hair et al., 2014; Hair et al., 2011; Hair et al., 2012b; Henseler et al., 2009). Table 3 shows the estimates for the full structural model, which integrated a mediator variable (i.e., Work Ethics). Figure 1 shows the structural model depicting the relationship among the variables.

The Hypothesis 1 stated that Participative leadership

is positively related to managerial efficiency. Table 3 displays a significant positive relationship between participative leadership and managerial efficiency ($\beta = 0.266$, $SE = 0.065$, $t = 1.969$, $p < 0.01$). This finding delivers strong support for the acceptance of hypothesis 1. For the hypothesis 2, it states that transformational leadership is positively related to managerial efficiency. As shown in Table 3, a significant positive relationship was discovered linking transformational leadership and managerial efficiency ($\beta = 0.274$, $SE = 0.274$, $t = 5.60$, $p < 0.00$). This outcome strongly supports the acceptance of hypothesis 2 and therefore concluded that Transformational leadership positively impact upon managerial efficiency.

Also, as postulated by Hypothesis 3, that Transactional leadership is positively related to

Table 3. Structural Model Assessment (Full Model)

Hypothesis	Beta	t- value	p-value	Findings
H1: Participative leadership has positive effects on managerial efficiency.	.266	1.969	0.000	Supported
H2: Transformational leadership has positive effects on managerial efficiency.	.274	5.604	0.000	Supported
H3: Transactional leadership has positive effects on managerial efficiency.	.222	5.765	0.0000	Supported
H4: Organizational culture has positive effects on managerial efficiency.	.185	3.112	0.000	Supported
H5: Work Ethics (WE) has positive impact on managerial efficiency.	0.183	3.819	0.000	Supported

4.1 Testing Mediating Effect of Work Ethics

The study assessed indirect significance effect by running a mediation analysis, utilizing the bootstrapping function of Smart PLS as recommended by [45] Bootstrapping does not make assumptions about the statistics' sampling distribution, or the variables' distribution shape, and furthermore can be utilized with confidence for a small sample size. Hence this bootstrapping approach for assessing indirect effect is perfectly appropriate for the PLS SEM method [46].

The indirect effect of transactional, participative, organizational culture was significant on managerial efficiency through Work Ethics as shown in Table 4. According to [46] if both direct and indirect effects are substantial and pointing in a common direction; the mediation type would be complementary, hence 'WE' can be said to have a complementary mediating effect on transactional leadership (TSL), participative leadership, organizational culture- and managerial efficiency linkages. With regard to the association between Transformational leadership style (TRL) and Managerial efficiency (ME), the direct effect was substantial, while the indirect effect

managerial efficiency, result in Table 3, indicated that transactional leadership had a significant positive relationship with managerial efficiency ($\beta = 0.222$, $t = 5.765$, $p < 0.00$). Hence, this hypothesis was supported. Furthermore, hypothesis 4 stated that Organizational culture is positively related to managerial efficiency. As expected, Table 3 shows the presence of strongly and positive relationship connecting organizational culture and managerial efficiency ($\beta = 0.185$, $t = 3.112$, $p < 0.00$) thus, hypothesis 4 was accepted. Lastly, Hypothesis 5 stated that Work Ethics (WE) has a positive impact on managerial efficiency (ME). The results shown in the Table 3 revealed that Work Ethics directly affects managerial efficiency (ME) significantly and positively ($\beta = 0.183$, $t = 3.819$, $p < 0.00$). So, this hypothesis was accepted.

was not. This study can therefore conclude that 'WE' does not have a mediation effect of on TRL-ME linkages.

Hypothesis 6 predicted that Work Ethics has a mediating effect on the relationship between participative leadership & managerial efficiency. As hypothesized, the results presented in Table 4 established a significant interaction terms representing participative leadership and Work Ethics). Therefore, Hypothesis 6 was fully supported. Also, Hypothesis 7 predicted that Work Ethics (WE) has a mediating effect on the relationships linking transformational leadership and managerial efficiency. However, the hypothesis was rejected as Work Ethics was not found to have any mediating effect on the relationships between transformational leadership and managerial efficiency. For the relationship between transactional leadership and work ethics, Hypothesis 8 predicted that Work Ethics (WE) has a mediating effect on the relationship between transactional leadership and managerial efficiency. As seen earlier in the result, Hypothesis 8 was supported and hence, Work Ethics mediates the relationship

between transactional leadership and managerial efficiency. Lastly, Hypothesis 9 posited that Work Ethics has a mediating effect on the relationship between organizational culture and managerial

efficiency. The hypothesis was supported fully as the mediation between organizational culture and Work Ethics in predicting managerial efficiency was significant.

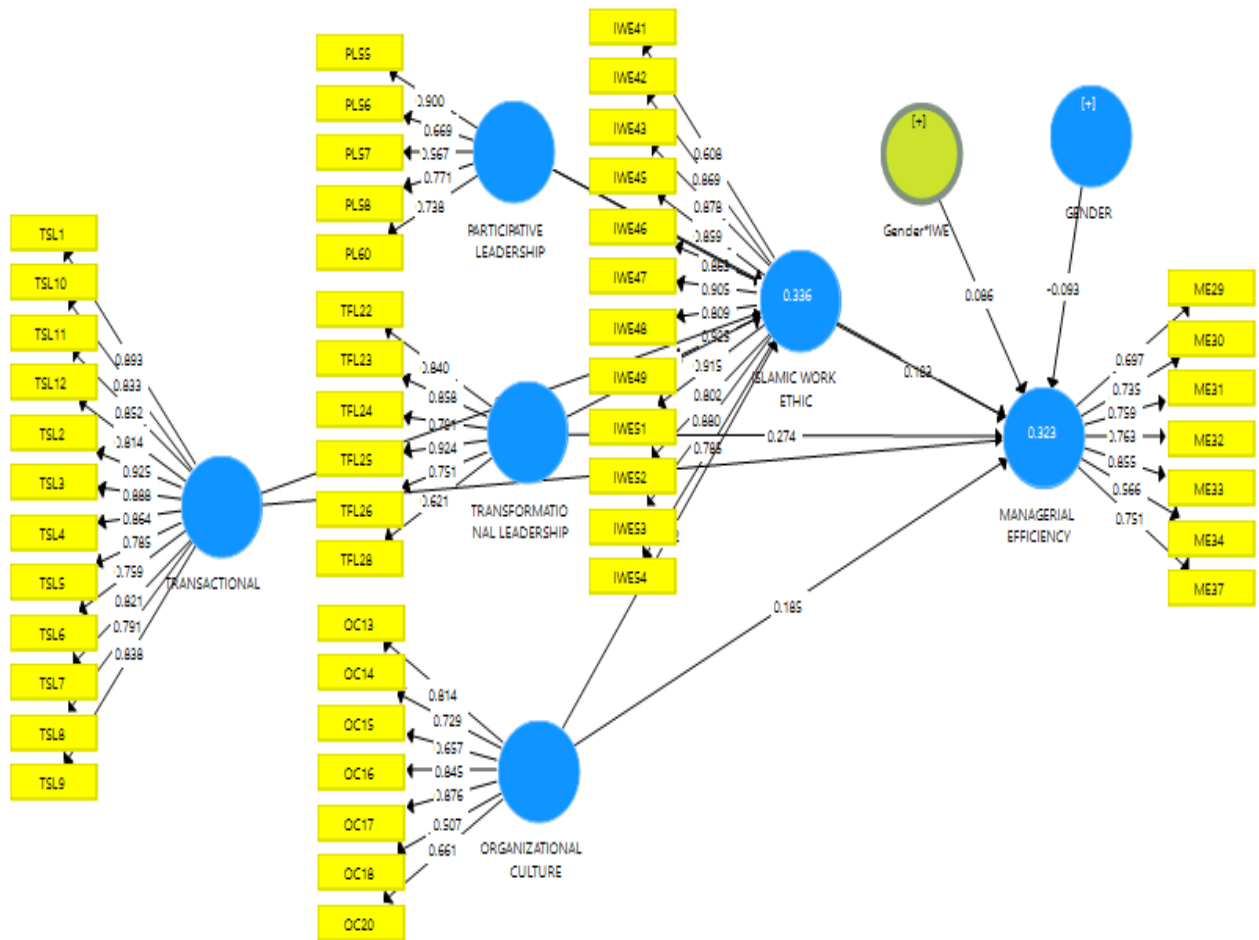


Figure 2. The structural Model

Table 4: Summary of Mediation Results

	Direct effect	95% confidence interval of	T value of direct effect	Significance?	Indirect effect	95% confidence interval of	T value of indirect effect	Significance?
H5: Work Ethics (WE) mediates the relationship between participative leadership and managerial efficiency.	.266	[0.211-0.466]	.969	Yes	.243	[0.231-0.366]	3.55	Yes
H6: Work Ethics (WE) mediates the relationship between transformational leadership and managerial efficiency.	.274	[0.191-0.335]	.604	Yes	0.102	[-0.073-0.021]	0.971	NON
H7: Work Ethics (WE) mediates the relationship between transactional leadership and managerial efficiency.	.765	[0.193-0.333]	.180	Yes	.199	[0.131-0.433]	6.56	Yes
H8: Work Ethics (WE) mediates the relationship between organizational culture and managerial efficiency.	0.185	[0.101-0.105]	.112	Yes	.212	[0.054-0.029]	.50	Yes
Note: TRL = Transformational Leadership; TSL = Transactional Leadership; OC = Organizational Culture; WE = Work Ethics; ME=Managerial Efficiency. ***Significant at 0.01 (1-tailed), **significant at 0.05 (1-tailed), *significant at 0.1 (1-tailed).								

4.2 Test of Moderation

While testing how gender has a moderating effect on the WE-ME interaction, the study employed the Multi-Group Analysis (MGA) method, as proposed by [46]. Prior to conducting MGA, it is important to assess measurement invariance. The study adopted [47] suggestions and conducted a three-step measurement invariance of composite models (MICOM) procedure that included computing of configurable, compositional, and scale invariance. Hypothesis 7 states that Gender Difference (GD) moderates the relationship between Work Ethics (WE) and managerial efficiency.

The analyses highlighted how the variation in Factor Loading (FL) among both groups was insignificant. Therefore, configure invariance was recognized, and likewise, scalar and compositional invariances were also recognized. Thus, MGA was utilized in investigating the gender's moderating effects on the WE-ME interaction. The findings of these paired approaches, PLS-MGA and the permutation test, resulted in a substantial variance among males and

females with regard to how WE-ME is perceived, hence confirming the final research hypothesis which states that gender is moderating the relationship between Work Ethics and managerial efficiency. Table 5 shows the results of MGA analysis which also explain that the linkage between Work Ethics and managerial efficiency is moderated by female gender as compared to male respondents. The results of this research therefore provide a clearer picture regarding the impact of gender in WE-ME relationship [38].

Table 5. Result of Multi-Group Analysis Showing Moderation Effect

Relationship	Female	Male	Differences	Henseler's MGA Test (p-value)	Permutation Test (p-value)	Result

H10-WE-GD>ME	0.159 **	0.029 ns	0.1 3	0.00 1	0.00 0	Yes
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Notes: ** denotes significance at 5% level.
ns = not significant.

5.0 Conclusion and Recommendation

This study examines the interactions between leadership style, organizational culture, & managerial culture. It also explores the mediating impact of work ethics and the moderating role of gender in the relationships. The results obtained indicated that there is a positive and direct relationship between transactional, transformational and participative leadership styles as well as organizational culture with managerial efficiency [16]. Also, work ethics mediate the relationship between transactional, participative leadership as well as organizational culture. However, for transformational, it can be recalled that Hypothesis 6 states that Work Ethics has a mediating effect on the interaction linking transformational leadership and managerial efficiency. Surprisingly, the results (see Table 4) established no significant mediation[48]. Furthermore, the result of the present study also revealed that gender significantly moderates the relationship between work ethics and managerial efficiency.

As a conclusion, the outcome of the present study revealed that all the hypotheses were supported with the exception of hypothesis 6, which may not be unconnected with the fact that a leader or manager with transformational leadership style is already morally inclined, and thus, already has ethical principles. As such, work ethics may not have significant influence on their managerial efficiency since they are ethically inclined. Furthermore, the results of this research bear numerous inferences. These findings offer both theoretical and empirical studies of the impact that work ethic has, as there have not been many studies on this factor previously. As hypothesized, this research project highlighted the significance and effect of work ethics as a mediator in the relationship between leadership styles, organizational structure and managerial efficiency[48]. Thence, the research suggests a foundation for future studies in the field of employee-organization relationship.

Practically speaking, this study presents several recommended practices for the top management in the oil and gas industry. The result of the present study will aid them in articulating their HRM procedures &

approaches. Such a move would be welcomed among the workforce and industry, as it is essential to maintain strong organizational work ethics[49]. Furthermore, when aiming to boost managerial efficiency, the top management ought to empower the development of work ethics within organizational culture[15], by ensuring that all employees are regularly engaged in preparatory and informative courses that emphasize on applying ethical & moral ideals at work.

In conclusion, this study like many others has some limitations that need to be considered. Firstly, this study uses quantitative approach, it is therefore recommended that further study may examine these concepts qualitatively as it may uncover in-depth information that may not be explore quantitatively. Secondly, this study examines the factors influencing managerial efficiency in the oil and gas sector, and it may not be possible to generalize these results more widely. Doing so may be dubious because of the niche nature of the study sample. Future studies might examine the same concept but in different industries[50]. Finally, the restricted quantity of variables may have some effect on the results. This study recommends future projects to therefore, include other variables such as the role-related stresses, as well as other working objectives within the oil and gas industry in order to improve the model's fitness.

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