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Assessment of Accident Risks on Project Time Performance in The Ghanaian Upstream Oil and Gas Industry: The Role of Management

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Abstract

If Ghana's economy gets richer because of better project accident risk assessment, poverty and underdevelopment will go down. The purpose of this paper is to determine the impact of accident risk assessment on project time performance and management's role as a moderating factor in Ghana's upstream oil and gas industry as an emerging economy. The management theory of Henry Mintzberg serves as the foundation for the study's theory and hypothesis. Purposive sampling was used to select employees and managers preoccupied with project management and risk assessment roles as respondents, and quantitative data were collected from 589 Ghanaian upstream oil and gas industry employees in the Western Region of Ghana. These voluntary informants have worked in the industry for more than six months. The study reveals a significant relationship between accident risk assessment and project time performance, with management roles as a moderating factor in the Ghanaian upstream oil and gas industry.

Keywords: *Accident risk assessment, Project Time Performance, Upstream Oil, Gas Industry, Management*

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1.0 Introduction

The oil and gas (O&G) sector play a significant role in contributing to the gross domestic product (GDP) of oil-producing nations, wielding enormous influence on their economies (Burclaff, 2021). In the upstream oil and gas sector, accidents resulting from inadequate management oversight can substantially impact industrial operations and, consequently, a nation's economic activity (Olusegun et al., 2011). Prior to Ghana's upstream oil and gas production, the IMF and World Bank projected a $20 billion cash flow from the Jubilee field over twenty years, estimating an average annual revenue of $1 billion. This prospect raises a crucial question: does Ghana have competent management staff prepared to effectively execute their roles in project accident risk assessment within the upstream oil and gas industry? The success of Ghana's upstream oil and gas industry could be compromised if frequent accidents occur due to inadequate management supervision. Moreover, developing countries like Ghana may experience stunted growth in their upstream oil and gas industry if management inefficiency results in insufficient attention to occupational health, safety, and accident risk assessment (Meswani, 2008).

The Ghanaian Labor Department reported a workman's compensation payment of GH6.7 million to formal government sector employees as of September 2017, attributed to management's failure to proactively monitor accident risk assessments (Ampofo, 2017). The International Labor Organization (2017) documented 317,000,000 registered occupational accidents worldwide, resulting in 2,300,000 fatalities. A stark example is the October 1998 pipeline explosion and fire in Warri, Nigeria, which claimed over 700 lives - 500 immediately and 200 in the following week - an incident that might have been prevented with proper management oversight of accident risk assessment. Poor workplace safety and health practices stemming from managerial oversight contribute to approximately 4% loss in global gross domestic product (ILO, 2017). Ghana's oil and gas industry has recently experienced work-related deaths, injuries, and loss claims due to inadequate accident risk assessment practices (Ocloo, 2017; Tetteh, 2017).

Employees in the oil and gas sector work in highly risky environments that present numerous technological, human, and environmental challenges, potentially impacting their lives and leading to significant losses (Amorin & Broni-Bediako, 2013). The oil and gas sector face constantly evolving risks and hazards that could trigger catastrophic accidents, with worker fatality rates historically exceeding those in other sectors (Mason et al., 2015). This high rate of occupational fatalities can be attributed to inadequate management supervision, particularly in accident risk assessment (Witter et al., 2014). Corporate executives often overlook these dangers, prioritizing productivity over safety concerns, as any delay in drilling operations can result in substantial income losses (Stride et al., 2013). In upstream oil and gas enterprises, managers play a pivotal role in accident risk assessment by connecting team tasks and priorities to corporate objectives (Gallup, 2015b). Workplace accidents can stem from various factors, including poor leadership, weak safety culture, insufficient management oversight, defective equipment, resistance to change, and inappropriate safety behavior by employees (McBride & Collinson, 2011). While numerous procedures and strategies have been developed globally for management to prevent, regulate, minimize, or eliminate occupational accidents, hazards persist, particularly in Africa, where occupational safety standards and accident risk assessment levels remain low (Eyayo, 2014).

Accident risk assessment encompasses all measures taken to reduce or eliminate the possibility of accidents or their adverse effects on upstream oil and gas organizations (Pálinkás, 2011). Various assessment techniques exist, including deterministic approaches (qualitative, quantitative, and hybrid methods) and stochastic approaches (classic statistical and accident forecasting modeling).

The upstream oil and gas operations, spanning from exploration through crude oil and gas production, require comprehensive risk assessment strategies (Wright & Gallun, 2008). This research examines the impact of accident risk assessment on project time performance and management's moderating role in Ghana's emerging upstream oil and gas industry, drawing from Henry Mintzberg's management theory and management-based theory to analyze management roles in project accident risk assessment.

1.1 Research Question

Does management in Ghana's upstream oil and gas industry perform their role well in the assessment of accident risks?

2.1 Literature review

2.1.1 Concept of Accident Risk Assessment

Nieto-Morote and Ruz-Vila (2011) claim that even though accident risk may be properly managed to lessen its impacts on the project's goal accomplishment, accident risk is inherent in all project activities since it can never be totally eradicated. The literature has many definitions of accident risk, such as "the underlying state that, from the point of view of decision-making, might create a potential accident risk event at some future time" and "the conventional view of risk is negative, signifying loss, risks, harm, and unpleasant consequences" (Jannadi & Almishari, 2003). According to Zeng et al. (2005), the likelihood of a given unpleasant accident event and any associated losses or bad impacts may be used to estimate how much accident risk there is. Accident risk management for the sector is becoming increasingly important since projects contain unpredictability and complexity (Aminbakhsh et al., 2013). Accident risk identification, risk assessment, accident risk response, accident risk monitoring, and accident risk reviewing are the four stages of the accident risk management process that are generally followed, according to the consensus in the literature (Mills, 2001). Also, Winch (2010) says that accident risk management can be broken down into four stages: recognizing and classifying the accident risk, assessing the accident risk, responding to the accident risk, and controlling the accident risk.

2.1.2 Management of Projects

A project is a temporary activity or undertaking with the goal of producing a unique item, service, or result (PMI, 2014). The complexity of modern projects has increased substantially, driven by challenging performance targets, intricate interdependencies between companies, advanced technology implementation, and diverse task requirements (Fitsili, 2009). Projects are typically broken down into smaller, manageable subprojects through work breakdown structures (WBS), with work packages ideally not exceeding 10 days of completion time (Slack et al., 2016). Project complexity often leads to delays, cost overruns, and decreased stakeholder satisfaction in the upstream oil and gas industry (Ham & Lee, 2019). Organizations are heavily influenced by what happens in the middle of the organization rather than the top (Currie & Procter, 2005). Management's information distribution culture plays a significant role in the performance of business accident risk assessments (Denison, 1990). The effectiveness of business accident risk assessment and management's information dissemination culture are strongly positively correlated (Uddin et al., 2013). Participative management and perceived organizational accident risk assessment performance are positively correlated with each other (Park et al., 2016). Internal accident risk assessment performance and company results are positively correlated with the

management's information dissemination culture strength (Polychroniou & Trivellas, 2018). There is a correlation between the effectiveness of accident risk assessment and the management's interpersonal role culture (Unger et al., 2014). The efficacy of organizational culture has an impact on 46% of company profitability (Flamholtz & Randle, 2012). Management's interpersonal culture may have an impact on accident risk assessment performance, although the shift is more pronounced over a longer time period (Berg & Wilderom, 2012). Some recent empirical data has suggested that there is no correlation between the effectiveness of the organization's organizational accident risk assessment and the management's interpersonal connection culture (Rashid & Shah, 2016). The structural equation model appeared to eliminate the relationship between management's interpersonal culture and organizational accident risk assessment performance (Leithy, 2017).

2.2 Research Model

2.2.1 Henry Mintzberg's Management Theory

In order to satisfy the many demands of carrying out their responsibilities, managers take on different roles. A preset set of behaviors is referred to as a "role." Mintzberg (1973) outlined ten positions that are essential to every manager's job. The 10 roles, in his perspective, can be categorized into three groups: interpersonal, informational, and decisional. The execution of managerial roles and the responsibilities associated with these positions can be carried out by the same manager at various times and to varying degrees, depending on the level and function of management (Mintzberg, 1973). The 10 roles, despite each being defined separately, function as a single unit.

2.2.2 The 'Swiss Cheese' Model

James Reason (1970–1977) created the "Swiss Cheese" accident causation model as a linear accident causation model. The idea is presently frequently utilized since it simply proposes that businesses aim to prevent accidents through defenses in order to avoid losses from risks and hazards (see Figure 5). These organizational defenses are classified into two categories (Kanki et al., 2010): Hard defenses, which include automated alerting systems, physical impediments, manufactured safety appliances, and vulnerable places built into the main system for protection, such as fuses. Personnel- and procedure-based soft defenses include restrictions on necessary performance, investigation, checking, regular performance processes, education and training, supervision, and working authorization. Supervisors and operators are also pioneering in soft defense. The possible repercussions of taking risks in an organization include losses to people, equipment, and assets.

Reason asserts that there is a trade-off between the level of protection provided for the product and the level of protection provided for the production; the risks included in any product should be defended by the organization for the well-being of customers, but the level of safety and protection should be equivalent to the risks associated with the work (Abdelhamid & Everett, 2000). If the amount of protection is more than necessary, the corporation will not be economically lucrative; if the level of protection is lower than the related risks, an accident is likely, and the organization will lose business opportunities. Because the production process is visible, the product can be checked to make sure it does what it's supposed to do. However, the level of protection can't be measured until the problem is known (Reason, 2008).

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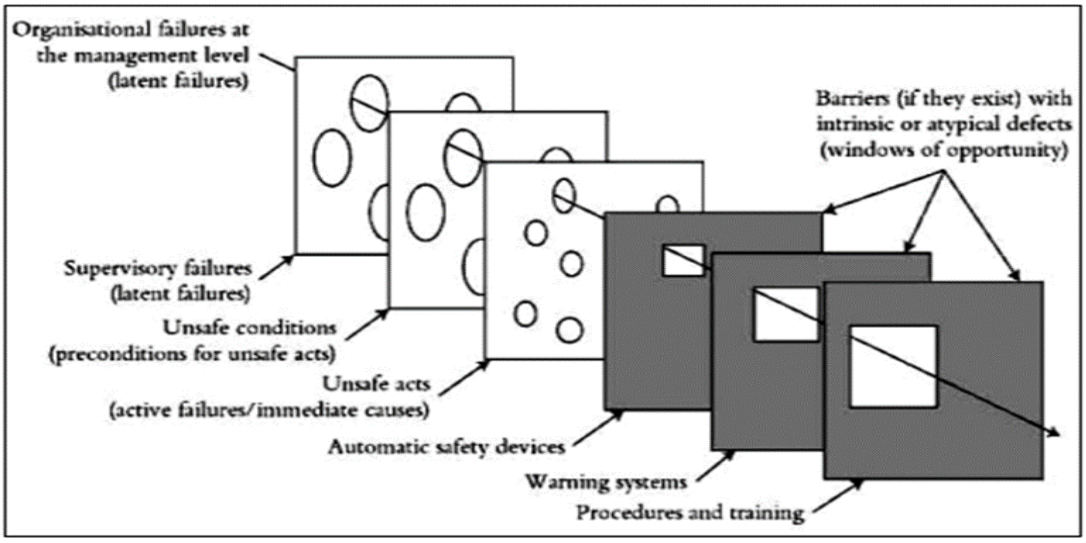

Figure 1: Swiss Cheese Accident Causation Model (James Reason, 1970 -77)

Although organizational accident defenses are viewed as impediments that prevent hazards from transforming into losses, the obstacles and barriers have holes in them similar to slices of Swiss cheese; Reason named his model Swiss cheese because of these flaws in organizational defenses (Anca, 2007). The sharp-end processes, which represent the "unsafe activities" slice of cheese in the model, are overseen by an organization's foremen. Human mistakes or dangerous acts are represented by the gaps in the unsafe act slice. Accidents are considered to be caused by active failures and direct causes such as blunders, slips, and breaches of norms. As immediate causes of accidents, accidents can be caused by a single human error or a mixture of them; the combination of violation and mistake is a common cause of accidents (Abdelhamid & Everett, 2000). Because technological and engineering advancements have resulted in an attempt to avoid technical failures, human mistakes are frequently cited as the primary cause of accidents. On the other hand, as technology and engineering have advanced, the frequency of accidents caused by human mistakes has increased. Unsafe conditions are depicted as holes in the next slice of the Reason Swiss cheese model; risky conditions and psychological risk factors are contributing factors to workers engaging in unsafe behavior. Unlike the preceding slice's active failures and immediate causes, the holes in this slice are the accident's hidden contributing reasons. The connection between an unsafe situation and unsafe behavior is one-to-many; an unsafe condition can lead to a variety of dangers and dangerous activities (Anca, 2007).

2.2.3 Interpersonal Roles

All facets of managerial work are intertwined with interpersonal roles. The three interpersonal roles all revolve around interpersonal relationships. function as the organization's leader: In all official affairs, the manager represents the company. The top management represents the corporation legally and socially from the perspective of individuals outside the organization. The supervisor acts as a conduit and a representative when speaking on behalf of the workgroup with higher management. The figurehead serves as a symbol in society or law enforcement. For all social, incarceration, and ceremonial obligations, the manager is considered in this setting as a representation of power and repute (Schwarz, 2015). Liaison role: The manager communicates with both internal and external parties. While the supervisor utilizes the liaison role to ensure a

smooth daily flow of work, the top management uses it to ask for information and favors. The work unit continues to acquire data from networks of contacts and stakeholders. outlines a manager's responsibilities for verbal and written information. One needs to interact with others and participate in commerce in order to access knowledge bases (Laud et al., 2016). What the leader does: The relationships between the management and the workers are described. The manager establishes relationships with the team, motivates them, and offers guidance. The relationship between a manager and subordinate is centered on duties, which include motivating subordinates to improve, planning for and overseeing their development, and balancing effectiveness (Peaucelle & Guthrie, 2012).

H_1: The interpersonal role of management is positively related to accident risk assessment

According to Henry Mintzberg (1973), there are four decisional roles that significantly rely on information. Entrepreneur Role: Change and new initiatives are initiated by the manager, and new ideas are generated and delegated to others. The contractor may also be a creator, an inventor, or a change-maker. Roles urge managers to work to delegate and produce development initiatives in order to empower and manage groups through the improvement process (Mintzberg, 1973). Disturbance Handler Role: The management responds to threats to the company. The manager resolves conflict amongst subordinates, reacts effectively to conflicts or emergencies, and adapts to environmental catastrophes (Mintzberg, 1973). Resource Allocator Role: The manager chooses who receives resources, organizes priorities and timelines, sets budgets, and decides which areas the business will concentrate its efforts. Negotiator Role: The manager negotiates on behalf of the organization. The negotiator represents the company in an assigned task during early discussions, impacting the supervisor's areas of responsibility as the firm's public face and in its beneficial resource allocation duties (Laud et al., 2016).

H_2: The decisional role of management is positively related to accident risk assessment.

The distribution of information is ensured through informational roles. According to Mintzberg (1973), the three informational positions are primarily focused on the information-related facets of management activity. The manager's role as a monitor entails receiving and compiling information on an enterprise's activities. Concerning matters that might hurt the company, the manager seeks information from stakeholders and from within the organization. A department's progress must be monitored, issues and opportunities must be identified, and prospective internal operations must be evaluated. All information received on this capability must be kept on file and updated (Oliveira et al., 2015). Disseminator Role: The management notifies the company of any special information. The top-level manager engages in more external communication than the supervisor does (Mintzberg, 1973).

H_3: The informational role of management is positively related to accident risk assessment.

The performance of a project is directly related to the assessment of accident risk. Aarthipriya et al. (2020) said that there is a relationship between accident risk identification and accident risk assessment that affects a project's ability to be completed on schedule, within budget, and in accordance with technical requirements. According to Lawrence (2015), there is a significant correlation between project time performance and accident risk assessment management. He discovered that the effectiveness of project timelines was impacted by accident risk assessment management approaches at the planning stage. The effect of accident risk assessment management on project time performance was examined by Adeleke et al. (2018). Their research's main goal is to gauge how widely accident risk assessment management is used in businesses. The outcomes

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show that implementing accident risk assessment management procedures has a considerably favorable effect on project timeline performance. Additionally, they show that having an accident risk manager on staff has a beneficial effect on how quickly projects are completed. Project time will be more productive if accident risks are kept to a minimum. According to Chang et al. (2018), the probability of an accident has a big effect on how quickly a project is completed. A key component of avoiding unfavorable outcomes as project size and complexity have grown is the ability to control accident risks at every stage of the project.

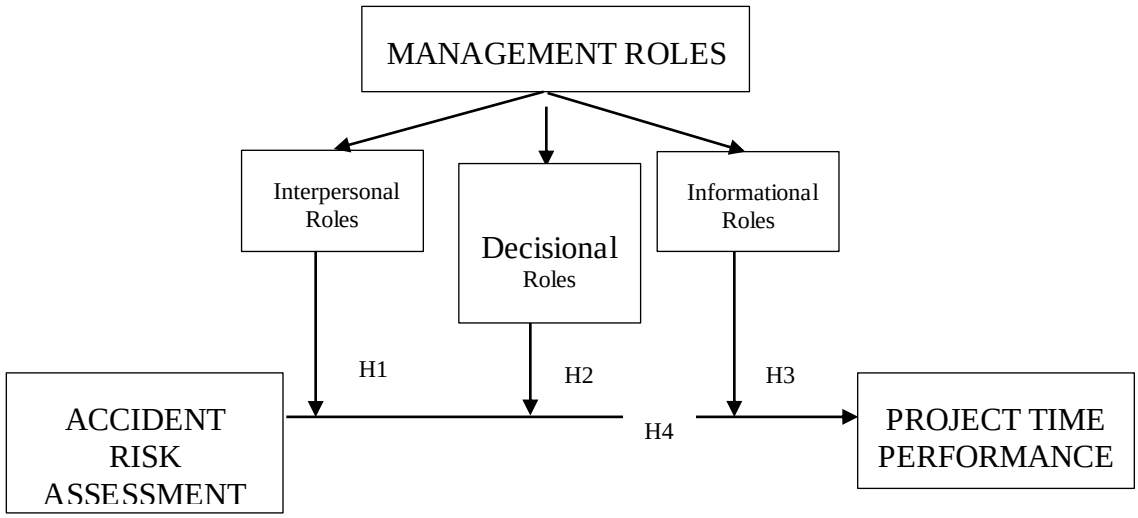

Figure 2: Research Model

3.0 Methodology

Quantitative data was obtained from 589 employees in the Ghanaian upstream oil and gas industry operating within Jubilee Field in Takoradi, Western Region of Ghana, between January and June 2021. Respondents were purposely sampled (Patton, 2002) to reflect upstream oil and gas employees' preoccupation with project roles and risk assessment insight. Respondents were asked to indicate the extent of disagreement and agreement with the aid of a five-point Likert scale ranging from 1 to 5 (strongly disagree to strongly agree). With the aid of multi-scales, constructs of accident risk assessment and management roles were adapted from Narver and Slater's (1990) intelligence generation and dissemination and Henry Mintzberg's model (Mintzberg, 1973). To ensure validity, the questionnaire was pre-tested for smooth answers to research statements (Saunders et al., 2009). Pilot testing involved 20 respondents from the Takoradi oil and gas industry, which shares many characteristics with Takoradi due to their close proximity and the fact that both are hubs of the oil and gas industry.

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4.0 Findings and discussions

4.1 Management's Project Accident Risk Assessment Informational Role

Table 1: Descriptive Statistics and Normality Analysis for Management's Informational Roles in Project Accident Risk Assessment

Item	Mean	Std. D	Skewness	Kurtosis
SBINFR 1	3.87	0.68	-0.67	0.98
SBINFR 2	4.12	0.58	-0.66	1.57
SBINFR 3	3.93	0.7	-0.87	1.96
SBINFR 4	3.71	0.79	-0.59	0.54
SBINFR 5	3.75	0.77	-0.8	1.22

The analysis shown in Table 1 displays the results for the management informational role. As evidenced by the results, five items (SBInfR 1 to SBInfR 5) formed the constructs, and the estimated means and deviations for the items ranged from (mean = 3.71 to 4.12; SD = 0.58 to 0.79), which depicts a high level of agreement. As shown in the result, SBInfR 1 had an estimated mean and deviation of (mean = 3.87, SD = 0.68). (SBInfR 2) had an estimated mean and deviation of (Mean = 4.12, SD = 0.58), both above neutral, to suggest that there is a high level of agreement (refer to Appendix I for a detailed description of scales used). The result obtained suggests that there is normality, which indicates that the data acquired under management's informational role on accident risk assessment is sufficiently close to normal to allow the use of statistical tools without hesitation in the responses provided since all the skewness and kurtosis were within the recommended range of -2.00 to 2.00.

4.2 Management's Accident Risk Assessment Decisional Role

Table 2: Descriptive Statistics and Normality Analysis for Management's Decisional Roles in Project Accident Risk Assessment.

Item	Mean	Std. D	Skewness	Kurtosis
SBDR 1	3.88	0.73	- 0.98	1.21
SBDR 2	3.88	0.75	- 0.71	1.30
SBDR 3	3.75	0.77	- 0.79	1.19
SBDR 4	3.75	0.73	- 0.75	1.32
SBDR 5	3.91	0.82	- 0.78	0.84

There were five items under the management decisional role as a construct. They ranged from SBDR 1 to SBDR 5 (refer to Appendix 1 for a detailed description of the scales used). The result suggests that all items have a mean and a deviation within an acceptable range to represent agreement. The mean and standard deviation ranged from (mean = 3.75–3.88; SD = 0.73–0.82), as indicated in Table 2. Also, all the items have skewness and kurtosis values between - 2.00 and 2.00, suggesting that the responses provided were normally distributed. This signifies that the generated data under management's accident risk assessment decisional role was close enough to normal that the statistical tool can be utilized without fear.

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4.3 Management's Accident Risk Assessment Interpersonal Role

Table 3: Descriptive Statistics and Normality Analysis for Management's Interpersonal Roles in Project Accident Risk Assessment

Item	Mean	Std. D	Skewness	Kurtosis
SBIR 1	4.03	0.71	- 0.72	1.04
SBIR 2	3.99	0.70	- 0.73	1.41
SBIR 3	3.99	0.71	- 0.61	0.99
SBIR 4	3.98	0.69	- 0.61	1.18
SBIR 5	4.05	0.70	- 0.58	0.91

The management interpersonal role construct has five items ranging from SBIR 1 – SBIR 5 (refer to Appendix I for a detailed description of the scales used). For all items, the estimated mean and deviation ranged from (mean = 3.98 to 4.05; SD = 0.69 to 0.71), indicating agreement, while the skewness and kurtosis ranged from (skewness = - 0.73 to - 0.61; kurtosis = 0.99 to 1.41). This suggests that there is normality in the responses provided by the respondents. This suggests that the data obtained under management's accident risk assessment interpersonal role was close enough to normal that statistical tools may be utilized without fear.

Table 4: Descriptive Statistics and Normality Analysis for Project Accident Risk Assessment.

Item	Mean	Std. D	Skewness	Kurtosis
AccRA 1	3.75	0.77	- 0.79	1.19
AccRA 2	3.88	0.73	- 0.98	1.21
AccRA 3	3.88	0.75	- 0.71	1.30
AccRA 4	3.75	0.77	- 0.79	1.19
AccRA 5	3.75	0.73	- 0.75	1.32

This section presents the results of the descriptive statistics on the risk assignment items. The study used five items ranging from AccRA1 to AccRA5 (Appendix I gives a detailed description of AccRA 1 to AccRA 5). As evidenced in the results, the estimated mean and deviation for all the items ranged from (Mean = 3.75–3.88; SD = 0.73–0.77), as indicated in Table 4, suggesting a high level of agreement as the estimated mean values were above neutral. As shown, the estimated mean and deviation for item 1 (AccRA 1) are estimated to be (mean = 3.75; SD = 0.77). The results also display the skewness and kurtosis information, as all the estimated values were within the acceptable range of - 2.00 to 2.00.

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Table 5: Descriptive Statistics and Normality Analysis for Project Time Performance

Item	Mean	Std. D	Skewness	Kurtosis
Project Time Performance				
Prp 1	3.31	0.82	- 0.54	- 0.61
Prp 2	2.73	0.71	0.16	- 0.99
Prp 3	3.65	0.91	- 0.98	0.77
Prp 4	3.14	0.96	- 0.19	- 0.89
Prp 5	3.17	0.97	- 0.20	- 0.86

An overview of the project time performance data is given by the analysis, as shown in Table 5. As seen, there were five things in total, ranging from Prp 1 to 5. (Appendix I gives a detailed description of Prp 1–5). The determined means and standard deviations for the items were (mean = 2.73–3.65; SD = 0.71-0.97). This result suggests that the respondents mainly agreed on the items. Skewness and kurtosis were also used to determine normality. The results show that all of the items had skewness and kurtosis ranges between -0.98 and 0.16 and -0.99 and 0.77, indicating normalcy. As a result, the data acquired under project time performance was sufficiently close to normal, allowing for the confident use of the statistical tool.

Table 6: Analysis of the Relationship Between Management's Roles and Project Accident Risk Assessment

Variable	Estimate(β)	S.E.	C.R.	p value	Remark
Management Role					
H1. Management Interpersonal Roles	0.327	0.035	9.360	0.000	Support
H2. Management Decision Role	0.396	0.039	10.117	0.000	Support
H3. Management Informational Roles	0.225	0.031	7.189	0.000	Support
H4. Accident risk assessment → Project Time Performance	-0.353	0.110	-4.196	0.000	Support

Hypothesis 1 suggests the role of management's interpersonal role in accident risk assessment. The result obtained suggests that management's interpersonal role has a positive and significant influence on accident risk assessment (β = 0.327, CR = 9.360, p-value = 0.000). Hence, hypothesis one is positive and supportive, as indicated in Table 6 above. This means that the kind of relationship that exists between management and staff plays an important role when it comes to accident risk assessment in the upstream oil and gas industry. The more cordial the relationship is, the better accident risk can be assessed; when there is no cordial relationship between management and staff, it may lead to a bad assessment of accident risk, which in turn leads to more accidents happening.

Hypothesis 2 seeks to examine the role of management's decisional role on accident risk assessment, and the results suggest that management's decisional role has a positive and significant influence on accident risk assessment (β = 0.396, CR = 10.117, p-value = 0.000). Hence, hypothesis two is positive and supportive, as shown in Table 6 above. This means that management's decisions on accident risk assessment determine how good or bad accidents can be assessed by staff in the upstream oil and gas industry. Hypothesis 3 seeks to examine the role of the management Informational Roles on accident risk assessment and the result obtained was

statistically significant and positive (β = 0.225, CR = 7.189, p-value = 0.000). Hence, hypothesis three is positive and supportive, as indicated in Table 6 above. The result shows that the information provided by management on accident risk assessment also determines how well or poorly staff will assess accident risks because information plays an important role in assessing accident risks. The findings in Table 6 demonstrate that Hypothesis 4 is correct, with an inverse connection between project time performance and accident risk assessment (*β = -0.353, CR = -4.196, p-value = 0.000*). This suggests that the hypothesis was supported at a 5% significance level and was statistically significant. This indicates that when accident risk assessment is properly carried out, there won't be any accidents, which results in projects being completed on schedule. However, inefficient accident risk assessment in the upstream oil and gas sector can cause project delays as a result of unintended events that might either halt or postpone the project. In summary, all formulated hypotheses were statistically significant, positive, and supported at a 5% significance level.

5.0 Conclusion

Informational, decisional, and informational roles of management contribute to the performance of project accident risk assessment in the Ghanaian upstream oil and gas industry. This means that the roles played by management in project accident risk assessment determine whether it can be performed well or not. This has clearly been emphasized by previous studies by various researchers. It has also been established after the research that the work culture of employees and management in the Ghanaian upstream oil and gas industry as an emerging economy is the same as the work culture of employees in developed countries. This study does have some limitations that highlight exciting opportunities for future research. Our sample was limited to Ghanaian upstream oil and gas industry employees within the Jubilee Field, Western Region, which, to some extent, could limit the full generalization of our findings. Notwithstanding its limitations, our study methodology and findings are worth considering by future researchers. Future researchers could consider investigating the role played by management in project accident risk assessment in two or more African emerging economies in the upstream oil and gas industry. The current study is a warning to managers of the upstream oil and gas industry that the lack of emphasis on project accident risk assessment in the Ghanaian upstream oil and gas industry could lead to a lot of accidents occurring in the industry.

Alternatively, a lack of management emphasis on accident risk assessment could lead to employees not cultivating the right attitude towards accident risk assessment, not being aware of the accident risks in the industry, and not complying with the project accident risk assessment procedure, which could result in a lot of accidents happening. From the perspective of policymakers, a number of important conclusions may be drawn, although these conclusions must necessarily be restricted to the context of a developing economy. Government laws can affect the upstream oil and gas industry's evaluation of accident risk in both positive and negative ways, depending on the circumstances of the developing economy. Regulations that restrict Ghana's upstream oil and gas business will harm developing upstream oil and gas economies' ability to estimate accident risk.

6.0 Recommendations

The study recommends that policymakers at all levels district, municipality, and head office create guidelines and policies that would standardize internal recognition at all scales. The study also recommends that policymakers should pay close attention to how current policies are set up and

how they affect management's duties in the workplace. Policymakers should tighten up current regulations or even create new regulations to improve levels of project accident risk assessment in the Ghanaian upstream oil and gas industry. These regulations should be balanced with the need to encourage growth and development in the industry. Ghanaian upstream oil and gas industry management should improve the work culture in the industry by encouraging a positive attitude towards project accident risk assessment, increasing awareness of accident risks, and promoting compliance with the project accident risk assessment procedure.

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