Dissertation on the topic of

AN ANALYSIS OF RISK FACTORS IN OIL AND GAS CONSTRUCTION PROJECTS IN DEVELOPING COUNTRIES QUALITATIVE STUDY

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Executive summary

This study delves into a critical excursion to reveal insight into the diverse snare of risk factors encompassing oil and gas construction projects in non-industrial countries. By digging into the complexities of these endeavours, a squeezing need for fitted risk management strategies to address the exceptional difficulties faced in such settings is recognized. Through comprehensive qualitative examination, this investigation plans to give a nuanced comprehension of the complicated risk scene innate in oil and gas construction. By clarifying the essential drivers of risks as well as investigating partners' bits of knowledge and encounters, the review lays the preparation for more compelling risk management strategies. Also, this exploration holds huge ramifications for both the scholarly community and industry. By connecting basic information gaps and proposing moves up to current risk management rehearses, the discoveries can possibly drive positive change and improve project results in the oil and gas area. Eventually, this study highlights the basics of all-encompassing methodologies as well as key decision-production to handle the assorted difficulties intrinsic in oil and gas construction projects, especially in non-industrial countries.

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Chapter 1: Introduction

1.1 Introduction

In this context, the Introduction chapter gives a top-to-bottom examination of hazard factors intrinsic to oil and gas construction projects inside emerging countries. It outlines an extensive foundation study, clarifying the intricacies and difficulties related to such undertakings. Furthermore, this chapter explains the research aim, objectives, and focal research questions, directing the insightful cycle. In addition, it outlines the rationale behind the exploration, underlining its importance in tending to the basic gap in understanding. The section briefly frames the problem statement as well as the thesis statement, establishing the foundation for ensuing conversations. At last, it typifies key findings as well as bits of knowledge in the discussions, offering a durable outline of the section's substance and making way for the resulting investigation of risk mitigation strategies.

1.2 Background study

Oil and gas assume a significant part in the worldwide energy supply, taking special care of over half of the world's transportation, heating, power, and different necessities (Van de Graaf and Sovacool, 2020). Past simple energy arrangements, altogether add to government tax revenues and support a large number of occupations around the world. Additionally, various fundamental items, including drugs, manures, solvents, and polymers, depend on oil and gas as essential fixings, supporting the usefulness of present-day culture and economy. Nonetheless, close to their evident advantages, oil and gas tasks involve a range of ecological effects, going from useful to impeding. Decidedly, they fuel plenty of human exercises and products, while likewise diminishing reliance on imported powers. On the other hand, their adverse consequences include contamination, greenhouse gas emissions, habitat destruction, biodiversity loss, and the risk of oil spills (Romasheva and Dmitrieva, 2021). The diverse idea of oil and gas projects, involving specialized, monetary, natural, and social contemplations, renders them intrinsically complex and unsafe. Inside this intricacy lie internal and external dangers that can imperil the outcome of such endeavours. This report dives into the unstable condition of oil and gas construction projects, featuring the inevitable dangers they face and the expected outcomes thereof. By investigating these difficulties thoroughly, partners can acquire experiences in alleviating chances and upgrading project strength, accordingly protecting both natural and monetary interests.

1.3 Research Aim & Objective

1.2.1 Aim

In oil and gas development projects, risk management means recognizing, breaking down, assessing, and treating the potential dangers that might influence the task achievement and screening and controlling the risk performance all through the project life cycle.

1.2.2 Objectives

- To recognize the reason behind risk management in oil and gas construction projects.
- To assess the dangers that might influence the oil and gas construction project
- To decide the mitigation of dangers that hamper the oil and gas construction projects
- To evaluate the viability of current risk management practices and propose upgrades for improved project strength.

1.2.3 Research question

- What are the targets of risk management in oil and gas construction projects?
- What might help the management to accomplish the project goals in the project in regards to gas and oil?
- How could the moderation of risk that hampers construction tasks of oil not be entirely set in stone?
- How effective are current risk management practices in oil and gas projects?

1.4 Research Rationale

The rationale behind leading a subjective report on the examination of risk factors in oil and gas development projects in emerging nations comes from a few key contemplations (Lawal, 2022). Emerging nations frequently, firstly, display exceptional financial, political, and ecological settings that impact the elements of oil and gas projects. These settings might incorporate restricted framework, regulatory difficulties, political unsteadiness, and natural weaknesses, all of which can altogether affect project risk profiles. Furthermore, regardless of the basic significance of risk management in guaranteeing project achievement, there is a lack of thorough subjective examinations to study explicitly risk factors in oil and gas development projects in developing countries (Kraidi, 2020). Existing writing fundamentally comprises

quantitative examinations or contextual analyses from created nations, which may not satisfactorily catch the nuanced challenges faced in developing country contexts.

Besides, qualitative research takes into consideration a more profound investigation and comprehension of the perplexing communications and relevant variables that add to project risks (Wang *et al.* 2023). Through strategies, for example, interviews, focus groups, and report evaluation, subjective exploration can reveal partners' discernments, encounters, and fundamental drivers of risks in oil and gas projects. By leading qualitative research, this exploration plans to fill this hole in the writing by giving a nuanced comprehension of risk factors in oil and gas development projects in developing countries (Putri, 2023). The experiences acquired from this study can illuminate more viable risk management techniques custom-fitted to the particular difficulties and settings experienced in these settings, eventually upgrading project strength and adding to sustainable improvement endeavours.

1.5 Research Significance

The importance of conducting a qualitative study on the analysis of oil and gas construction projects in developing countries is diverse and significant (Halog and Anieke, 2021). Such exploration, first and foremost, holds central significance in tending to basic information gaps inside the field of project management, especially with regard to developing nations where framework advancement is prospering. By extensively understanding the complexities of risk factors intended for these districts, partners can devise designated procedures to moderate possible dangers and upgrade project versatility. Also, the discoveries of this study can fundamentally add to the progression of best practices in risk management in the oil and gas industry (AlNoaimi and Mazzuchi, 2021). By explaining the viability of flow risk management rehearses and proposing upgrades, the evaluation can catalyze the reception of additional hearty and proactive methodologies, subsequently limiting undertaking delays, cost overwhelms, and other unfriendly results.

Moreover, the results of this study have expansive ramifications for sustainable development and financial development in developing nations (Samour *et al.* 2022). Powerful risk management in oil and gas construction projects is imperative for guaranteeing the opportune fruition of framework projects fundamental for monetary advancement. By recognizing and moderating dangers, the exploration can work with smoother project execution, draw in speculation, and encourage financial advancement in these areas. Generally speaking, the

exploration holds huge importance in adding to scholastic information, illuminating industry rehearses, and advancing manageable improvement plans in developing nations (Aston *et al.* 2023). Its insights can possibly drive positive change, improve project results, and at last advantage both stakeholders and the broader society.

1.6 Problem Statement

The problem statement for the topic focuses on the unavoidable difficulties and vulnerabilities that block the effective execution of such projects (Battina, 2021). Emerging nations, described by fast urbanization and industrialization, frequently face critical obstacles in dealing with the intricacies innate in oil and gas development adventures. One significant issue is the absence of complete comprehension and viable administration of hazard factors well-defined for these districts. Restricted foundations, deficient administrative systems, and financial weaknesses worsen the dangers related to project execution (David *et al.* 2020). Moreover, social and international variables might present further vulnerabilities, obstructing project progress and sustainability.

Moreover, there is a lack of observational exploration focused on qualitative research on hazard factors in oil and gas construction projects in developing nations (Ukpong-Udo, 2022). Existing writing dominatingly depends on quantitative procedures, ignoring the nuanced socio-political and social settings that significantly impact project results. The shortfall of fitted risk management procedures customized to the exceptional difficulties of non-industrial nations fuels project weaknesses, prompting delays, cost invades, and even project relinquishment (Hundloe, 2021). Subsequently, there is an earnest requirement for a subjective report to extensively break down and address the complex risk scene in oil and gas construction projects in developing nations. Such exploration is fundamental for illuminating designated risk moderation procedures, improving venture versatility, and advancing sustainable improvement plans in these areas.

1.7 Thesis Structure

Figure 1: Thesis Structure

(Sources: Self-made)

1.8 Summary

It is summarized that this study leaves on a pivotal excursion to reveal insight into the multifaceted trap of risk factors encompassing oil and gas construction projects in developing nations. By digging into the intricacies of these ventures, we have distinguished a pressing need for fitted risk management methodologies to address the special difficulties faced in such settings. Through complete qualitative research, this exploration means to give a nuanced comprehension of the complex risk scene innate in oil and gas construction adventures. By clarifying the fundamental drivers of risks and investigating partners' insights and encounters, we can make ready for more viable risk management techniques. Besides, this study holds huge ramifications for both the scholarly world and industry. By filling basic information gaps and proposing upgrades to current risk management rehearses, our discoveries can possibly drive positive change and improve project results in the oil and gas sector.

Chapter 2: Literature Review

2.1 Introduction

This chapter fills in as a comprehensive investigation of existing literature concerning risk factors inside oil and gas construction projects, with a specific study on their importance to developing nations. Through a fastidious blend and critical examination of earlier investigations, the chapter intends to lay out a theoretical framework and context-oriented understanding crucial for the qualitative request directed inside this exploration. At its center, the literature review dives into a comprehensive investigation of current research, examining possible causes, impacts, and mitigation methodologies relating to different risks that could impact the result of oil and gas construction tries. By examining these components, the survey attempts to give bits of knowledge into the intricacies and nuances of hazard management inside this industry, laying the basis for ensuing experimental examinations as well as theoretical progressions.

2.2 Theory and Module

Stakeholder Theory provides an important framework for analyzing risk factors in oil and gas construction projects in non-industrial nations, as explained in the qualitative review of the topic (Okafor, 2022). This theory places that associations are interconnected with different stakeholders whose interests, assumptions, and activities can essentially influence project results. By applying the Stakeholder Theory to the review's discoveries, a few key experiences arise regarding the distinguishing proof, evaluation, and management of risks inside the setting of oil and gas construction projects (Kraidi *et al.* 2021). Stakeholder Theory, first and foremost, stresses the significance of recognizing and focusing on stakeholders given their impact and interests in the venture (Ocasio *et al.* 2023). With regards to oil and gas construction projects in emerging nations, partners might incorporate "government agencies, local communities, environmental organizations, investors, contractors, and regulatory bodies". Every stakeholder group has exceptional points of view and goals that can shape project elements and present explicit dangers. By completely mapping stakeholder and understanding their interests, project groups can proactively address likely contentions, moderate stakeholder-related dangers, and encourage cooperative connections helpful for project achievement (Wood *et al.* 2021).

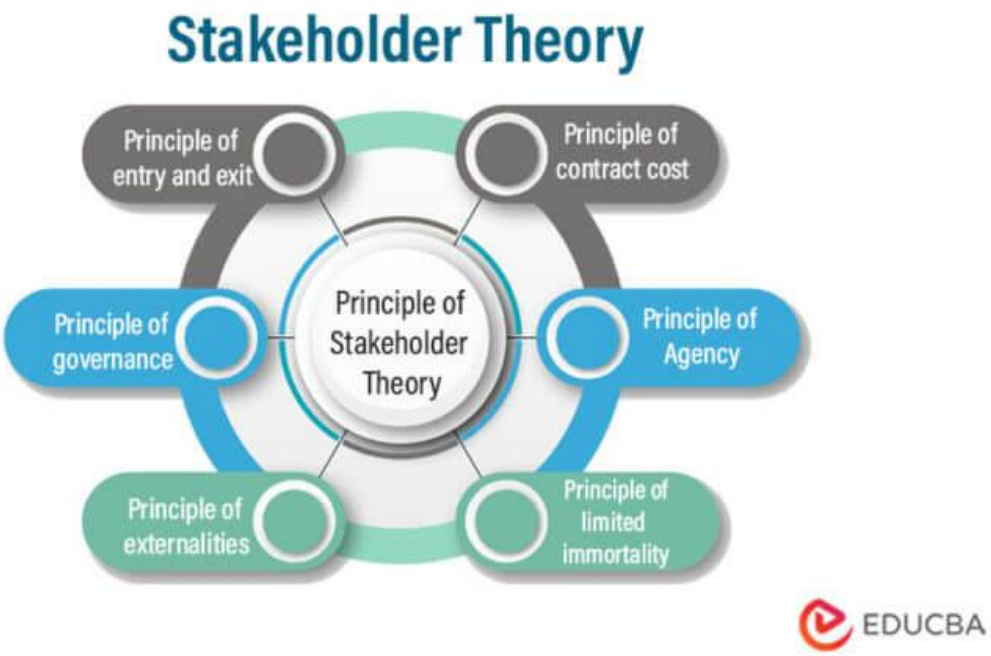


Figure 2: Stakeholder Theory

(Sources: https://www.educba.com/stakeholder-theory/)

Besides, the Stakeholder Theory highlights the meaning of Stakeholder commitment and communication in risk management (Mahajan *et al.* 2023). Compelling communication channels and systems for Stakeholder criticism work with the trading of data, arrangement of assumptions, and goal of contentions. By drawing in Stakeholders early and including them in dynamic cycles, project groups can use Stakeholders' skills, experiences, and support to recognize chances, foster relief systems, and improve project versatility. Additionally, straightforward and comprehensive communication fabricates trust, upgrades believability, and mitigates reputational risk related to project vulnerabilities and difficulties (Jorquera *et al.* 2022). Thirdly, Stakeholder Theory underscores the requirement for Stakeholder risk management to move toward addressing Stakeholders' interests and needs (Mahajan *et al.* 2023). With regards to oil and gas development projects in agricultural nations, Stakeholders might communicate concerns in regard to ecological effects, social removal, work privileges, local area advancement, and administrative consistency. By coordinating Stakeholder points of view into risk evaluations and relief systems, project groups can tailor arrangements that offset Stakeholders' inclinations with project goals, consequently limiting opposition, clashes, and interruptions (Giffard, 2023).

Moreover, Stakeholder Theory features the unique idea of Stakeholder connections and the significance of continuous partner commitment through the venture lifecycle (He *et al.* 2020). As task settings develop and Stakeholders' needs shift, project groups should adjust their risk management systems likewise. Ordinary Stakeholder meetings, influence appraisals, and Stakeholder input systems empower project groups to expect to arise risk, address Stakeholder complaints, and keep up with Stakeholder support over the long run (Kuruppu *et al.* 2022). All in all, Stakeholder Theory offers important experiences in the examination of chance elements in oil and gas development projects in non-industrial nations. By perceiving the interconnectedness of task Stakeholders and coordinating Stakeholder viewpoints into risk management processes, project groups can upgrade project versatility, encourage partner cooperation, and accomplish manageable venture results in the midst of mind-boggling and dynamic undertaking conditions.

2.3 Risks Associated with Oil and Gas Construction Projects in Developing Countries

The exploration led by Davies, (2022) reveals insight into the myriad perils related to gas and oil building projects in financially distraught nations like Yemen. These ventures frequently face critical difficulties, including delays and budget overruns, which heighten monetary dangers for organizations operating in such settings. Kiani *et al.* (2021) confirm this idea by featuring exhaustion as a pervasive danger in oil and gas construction operations, especially in nations like Iran. Moreover, the examination highlights the basic job of labour supply, which is every now and again disregarded by workers for hire and development firms in Iran and comparative locales. Neglecting the significance of gifted work can prompt specialist absences, disrupting project progress and delaying finishing timetables (Sarfo, 2021). Thus, the absence of ability among workers for hire presents significant dangers to oil and energy-building projects in devastated countries like Yemen, where deferrals and failures can obstruct economic development. A huge contributing variable to these difficulties is the determination of contractors for hire during the offering system (Tafazzoli *et al.* 2020). Regardless of the proprietor's efforts to vet workers for hire, there is a likelihood that chosen contractors for hire miss the mark on essential abilities and experience to effectively manage oil and gas worksites and guarantee ideal venture completion. The repercussions of poor worker-for-hire choice stretch out past task delays, possibly discolouring the organization's standing and sabotaging its competitive remaining in the business (Thompson, 2022).

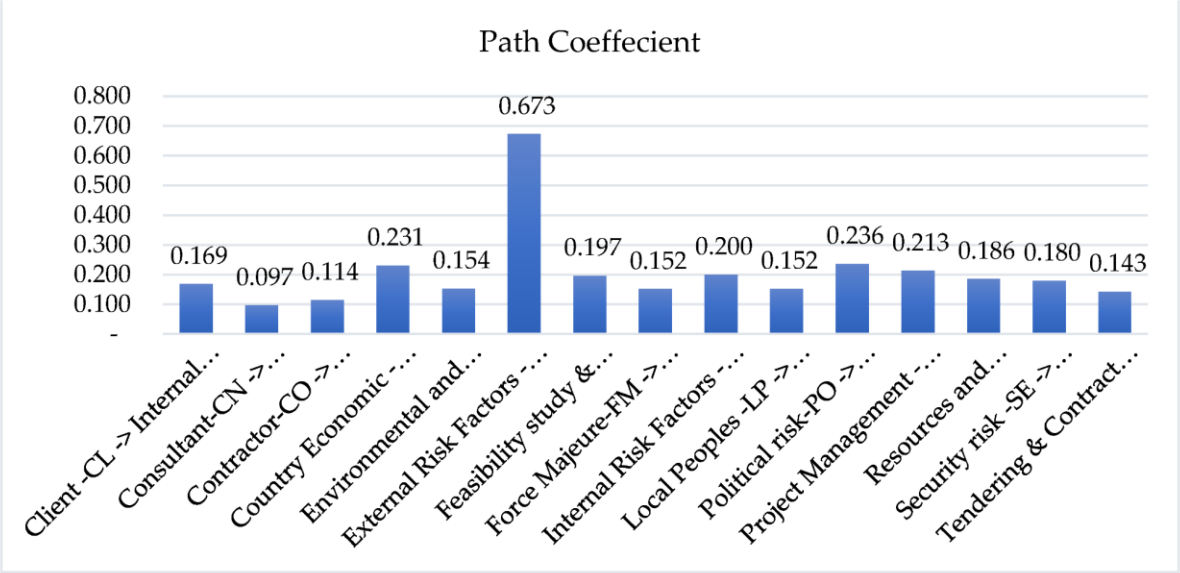


Figure 3: Risk management assessment

(Sources: https://www.mdpi.com/2673-5628/2/2/3)

Notwithstanding project-specific dangers, the exploration features the approaching danger of cybercrimes to the competitive advantage of organizations inside the oil and gas area, especially in the UK. Alawida *et al.* (2022) caution against the impending impacts of cyberattacks, which can think twice about organization data and award unapproved admittance to competitors. Such breaks can disclose exclusive techniques and progress, empowering rival associations to devise countermeasures and disintegrate the competitive edge of designated organizations. Subsequently, the need to sustain network protection measures is principal to shielding organization resources, safeguarding competitive advantage, and guaranteeing continuous help delivery to clients (Omotunde and Ahmed, 2023). All in all, the research highlights the complex risks innate in gas and oil building projects in financially challenged nations, underlining the significance of vital worker-for-hire determination and vigorous online protection conventions. By tending to these weaknesses, organizations can relieve monetary dangers, defend their reputations, and keep a competitive edge in the powerful oil and gas industry scene.

2.4 Proposals that will improve the operations in the industry of gas and oil

The examination illustrated above highlights a few critical techniques to improve operations inside the oil and gas area, especially intending to work deficiencies and propelling production

proficiency. A key proposal featured in the concentrate by Al-Zuheri, *et al.* (2023) stresses the use of lean production standards, especially in emerging countries with thriving oil and gas industries (Touriki *et al.* 2021). By carrying out lean procedures, these countries can reinforce process effectiveness, limit construction waste, and upgrade the value stream. Besides, the research advocates for the enhancement of energy portfolios in developing nations through the use of sustainable assets, for example, solar, wind, hydro, and biomass (Strielkowski *et al.* 2021). This reduces dependence on petroleum derivatives as well as addresses greenhouse gas emissions. The joining of environmentally friendly power cultivates energy security and versatility as well as catalyzes financial development by setting out new position opportunities and giving power admittance to remote and rural districts.

Figure 4: Effective management

(Sources: https://www.trindent.com/7-factors-for-effective-management)

Besides, the order of investor-friendly laws as well as regulations is proposed to boost private capital flood into renewable energy endeavour. By offering consistency, straightforwardness, and risk alleviation components, governments can draw in more investment speculation, accordingly speeding up the change toward sustainable energy (Yang *et al.* 2024). Moreover, the consolidation of accuracy technology, especially AI, inside dynamic cycles is upheld by

Richey *et al.* (2023). Utilizing ML abilities improves information management effectiveness, working with the extraction of noteworthy experiences from immense datasets. Nonetheless, close to technological integration, hearty cybersecurity measures are basic to defend delicate data and moderate the dangers presented by cybercrimes. In this way, the definition of far-reaching approaches addressing information security and online protection is crucial for sustaining versatility against possible dangers (Yaseen, 2023). In synopsis, the blend of lean production standards, renewable energy mix, investor-friendly policies, as well as accuracy technology reception addresses a multi-layered way to deal with upgrading functional productivity and strength inside the oil and gas area. By embracing these methodologies, both developed and developing countries can explore difficulties, profit from potential opportunities, and steer towards a sustainable energy future.

2.5 Challenges in Developing Countries

Oil and gas construction projects in emerging nations are laden with unmistakable difficulties, originating from a conjunction of variables like lacking infrastructure, technological limitations, as well as regulatory ambiguities (El-Hibri, 2021). These moves present huge obstacles to project achievement, requiring purposeful endeavours to conquer them. An exhaustive survey of the current literature uncovers an agreement on the basics of tending to these difficulties through diverse methodologies revolving around limit building, information transfer, and vital joint efforts among key stakeholders. One of the essential difficulties going up against oil and gas construction projects in developing nations is the deficiency of infrastructure (Sharma and Shrestha, 2023). Restricted transportation organizations, insufficient power supply, and inadequate logistical offices frequently prevent the effective execution of undertakings, prompting delays and cost invaders. Moreover, the shortfall of the hearty framework worsens functional dangers and subverts the general intensity of these undertakings. Thus, researchers advocate for designated mediations pointed toward improving framework development coupled with project execution (Nhlapo, 2020). Interests in transportation, energy, and media communications framework are considered fundamental to ease bottlenecks and improve project proficiency. Additionally, developing countries wrestle with restricted technological capacities, presenting critical barriers to development and productivity improvement inside the oil and gas area. The literature highlights the significance of innovation moves and limits building drives to overcome this issue (Verganti *et al.* 2020). Cooperative game plans between global firms and neighbourhood elements work with the

exchange of state-of-the-art innovations, ability, and best practices, in this manner engaging nearby partners to use progressed apparatuses and strategies. Furthermore, interests in R&D (Research and Development) cultivate native technological capacities, empowering non-industrial nations to find answers for their one-of-a-kind settings and difficulties.

Regulatory vulnerabilities address another basic challenge blocking oil and gas construction projects in non-industrial nations (Andreoni and Tregenna, 2020). Conflicting regulatory systems, regulatory formality, and political insecurity frequently sabotage financial backer certainty and obstruct project progress. To address these difficulties, researchers advocate for proactive administrative changes pointed toward improving straightforwardness, smoothing out endorsement processes, and advancing speculation assurance. Legislatures assume a crucial part in establishing an empowering administrative climate helpful for private area support and unfamiliar ventures (Mushitsi and San, 2024). Also, cooperative stages including government offices, industry affiliations, and global associations work with exchange, agreement building, and information sharing, along these lines encouraging administrative intelligence and consistency. Limit building arises as a focal subject in the literature, supporting endeavours to address the diverse difficulties defying oil and gas construction projects in non-industrial nations (Mangqalaza, 2020). Limit-building drives include preparing training, expertise advancement studios, and instructive associations pointed toward furnishing neighbourhood stakeholders with the imperative information, abilities, and skills. By putting resources into human resources improvement, governments and industry players upgrade the strength and versatility of the labour force, consequently reinforcing project performance as well as sustainability.

Besides, strategic partnerships between governments, sector partners, and worldwide associations are underlined as crucial drivers of progress in the oil and gas area (ERIC, 2023). Cooperative drives work with resource sharing, risk-sharing, and information trade, cultivating development, and improving task results. Public-private partnerships (PPPs) offer a reasonable system for utilizing private area skills and monetary assets to address foundation holes and advance sustainable development (Mansilla and Vassallo, 2020). Essentially, commitment with multilateral foundations and improvement organizations works with admittance to specialized help, funding, and limit building support, expanding the abilities of neighbourhood partners and upgrading project flexibility. All in all, the literature highlights the diverse ideas of difficulties confronting oil and gas construction projects in non-industrial nations, stressing the

significance of comprehensive and cooperative ways to address these difficulties. Limit building, innovation move, administrative change, and vital organizations arise as key systems to improve project execution, cultivate advancement, and advance economic advancement in the oil and gas area. By utilizing these systems, non-industrial nations can open their immense energy potential, drive financial development, and accomplish comprehensive as well as sustainable development goals.

2.6 Risk Management Practices

In the dynamic and high-stakes domain of oil and gas construction projects, viable risk management rehearses are vital for exploring the myriad difficulties and vulnerabilities inborn in the business (Ali, 2022). An exhaustive survey of the literature highlights the basic significance of proactive risk for the executives in moderating the different clusters of dangers that might possibly endanger project achievement. This involves a precise methodology incorporating risk identification, evaluation, mitigation, possibility arranging, and partner commitment. At the very front of effective risk management is the proactive ID of likely dangers. This includes a careful assessment of project boundaries, environmental elements, regulatory necessities, and partner elements to recognize expected dangers and weaknesses (Rovida *et al.* 2021). By embracing a proactive position towards risk distinguishing proof, project groups can expect difficulties right off the bat and execute precautionary measures to relieve their effect. Besides, including partners from different disciplines and hierarchical levels in the risk ID process cultivates a comprehensive comprehension of project dangers and improves the probability of recognizing neglected or latent dangers. Whenever chances have been recognized, the literature underscores the significance of directing extensive risk appraisals to assess their probability and expected influence (Albreiki *et al.* 2024). This implies evaluating risk as far as likelihood and size, considering variables like project, intricacy, technical feasibility, and market elements. Through rigorous risk appraisal philosophies, project groups can focus on taking a chance in light of their severity as well as develop designated relief procedures to really address them. Moreover, coordinating qualitative and quantitative risk appraisal strategies upgrades the strength of chance assessments, empowering project groups to pursue informed choices and apportion assets wisely (Vidalis, 2022).

Mitigation procedures comprise a focal mainstay of powerful risk management, intending to decrease the probability and severity of distinguished chances (Ab *et al.* 2024). The literature

advocates for a complex way to deal with risk mitigation, enveloping proactive measures, for example, risk evasion, risk move, risk decrease, and hazard acceptance. By differentiating risk mitigation methodologies and executing various layers of security, project groups can upgrade their strength to unexpected occasions and limit the probability of venture interruptions (Sumitra, 2022). Besides, encouraging a culture of chance mindfulness and responsibility inside project groups develops a proactive outlook towards risk the board, empowering quick reactions to arising dangers and potential opportunities. Contingency planning assumes a vital part in successful risk management, giving an organized structure to answering unanticipated occasions and deviations from arranged results (Adieme and Subramanian, 2020). The writing features the significance of developing strong emergency courses of action that diagram foreordained reactions to different risk situations, including financial plan invades, plan delays, store network interruptions, and specialized disappointments. By expecting possible possibilities and laying out clear heightening strategies, project groups can limit the effect of unfriendly occasions and assist recuperation endeavours, consequently defending undertaking goals and partner interests. Stakeholder engagement arises as a basic empowering influence of viable risk management, cultivating joint effort, straightforwardness, and responsibility all through the undertaking lifecycle (Waris *et al.* 2022). Drawing in partners early and frequently works with the trading of important bits of knowledge, viewpoints, and skill, improving risk mindfulness and adjusting risk the executives endeavours to organizational objectives and needs. Moreover, implying partners in risk dynamic cycles improves purchase and obligation to take a chance with relief systems, cultivating an aggregate feeling of pride and obligation regarding project results (Aston *et al.* 2023). All in all, the literature highlights the vital significance of successful risk management rehearses in oil and gas development projects. By taking on a proactive way to deal with risk distinguishing proof, evaluation, relief, possibility arranging, and partner commitment, project groups can upgrade their versatility to vulnerabilities, improve asset designation, and protect project achievement. Besides, encouraging a culture of persistent learning and improvement empowers associations to adjust to developing risk scenes and seize chances for innovation and development in the powerful oil and gas industry.

2.7 Impact of Global Trends

In the steadily developing scene of oil and gas construction projects, worldwide patterns have a huge impact, reshaping the risk climate and necessitating versatile reactions from industry

partners (Gupta and Shah, 2022). A careful assessment of the literature features the transformative effect of key worldwide patterns, including technological progressions, international elements, and environmental change, on the risk sense of oil and gas development projects. Specifically, the literature explains how rising advancements, like digitalization, robotization, and AI, are upsetting project management practices and hazard mitigation techniques, offering two amazing opportunities and difficulties for industry players (Nagireddy, 2023).

Technological advancements stand at the front of worldwide trends moulding the risk scene of oil and gas construction projects (Duggal *et al.* 2022). The literature highlights the transformative capability of digitalization, automation, and AI in upgrading project proficiency, efficiency, and security. Digitalization drives, for example, Building Information Modeling (BIM) and Integrated Project Delivery (IPD), empowering constant joint effort, information coordination, and representation, working with informed direction and proactively risk management (Ashworth, 2021). Essentially, the multiplication of automation technologies, like robotics and unmanned aerial vehicles (UAVs), smoothes out construction processes, decreases human blunder, and further develops project consistency, in this manner moderating functional dangers and improving venture results (Kumar, 2020). Besides, the mix of AI-controlled investigation and prescient demonstrating empowers proactive risk recognizable proof, situation examination, and improvement, enabling undertaking groups to expect and take a chance before they grow into expensive disturbances. Geopolitical dynamics likewise apply a significant effect on the risk perception of oil and gas development projects, forming regulatory systems, economic situations, and venture environments (Sergeevna, 2023). The literature explains how international strains, exchange questions, and administrative vulnerabilities can bring unpredictability and intricacy into project conditions, increasing international dangers, for example, supply chain disruptions, resource patriotism, and political precariousness. Subsequently, industry partners should explore international dangers by encouraging international knowledge capacities, broadening supply chains, and participating in situation planning to expect and alleviate potential disturbances (Baldwin and Freeman, 2022).

Climate change arises as another basic element affecting the risk perception of oil and gas construction projects, enhancing natural dangers like extreme weather occasions, regulatory pressures, as well as partner activism (Lodh *et al.* 2024). The literature features the basics of

environmental flexibility and sustainability in a project arranging and execution, encouraging industry partners to take on environment shrewd practices, put resources into sustainable power advances, and improve natural stewardship to relieve environment-related chances and benefit from arising opportunities in the change to a low-carbon economy (Iacobuţă *et al.* 2021). In rundown, worldwide trends like technological advancements, international elements, and environmental change apply significant impacts on the risk scene of oil and gas construction projects. Arising technologies like digitalization, robotization, and AI offer transformative potential in upgrading project management practices and hazard moderation techniques, empowering industry partners to explore complex difficulties and benefit from arising opportunities in a quickly developing industry scene. Additionally, proactive commitment to international dangers and environmental change is vital for building strength, guaranteeing project achievement, and progressing sustainable advancement goals in the dynamic and interconnected universe of oil and gas construction projects.

2.8 Conclusion

It can be concluded that the comprehensive investigation of literature concerning risk factors inside oil and gas construction projects, especially in developing nations, gives significant experiences into the intricacies of hazards for the executives in this industry. By blending earlier examinations and applying Stakeholder Theory, this exploration lays out a vigorous hypothetical structure fundamental for understanding and tending to the complex difficulties intrinsic in oil and gas development projects. Stakeholder Theory underscores the interconnectedness of associations with different partners, featuring the significance of partner commitment, communication, and responsiveness in viable risk management. Also, the examination of worldwide patterns, including technological progressions, international elements, and environmental change, highlights the powerful idea of the risk scene in oil and gas construction projects. Arising advances offer extraordinary potential in improving undertaking productivity and strength, while international pressures and environment-related risks present extra intricacies that should be tended to proactively. By embracing proactive risk management rehearses, like risk recognizable proof, evaluation, alleviation, and partner commitment, industry partners can explore these difficulties, benefit from valuable opportunities, and accomplish sustainable project results.

Chapter 3: Methodology

3.1 Introduction

In this dissertation, the chapter in as a complete guide for the examination approach utilized and it explains the complicated layers of the exploration onion model, digging into the research philosophy, approach, and technique used in this imminent way. Also, the part fastidiously frames the data collection process including the assurance of sample size as well as the choice of proper data gather strategies and it stresses the principal significance of moral contemplations in the examination attempt in this period. Subsequently, through a deliberate composition the technique section orchestrates different components, giving a sound structure to perceiving the examination strategy utilized in the concentrate by clarifying every part exhaustively, from philosophical underpinnings to useful execution, the part guarantees lucidity and straightforwardness in the exploration cycle in this period. Ultimately, it finishes in a brief rundown, exemplifying the critical bits of knowledge as well as strategic choices made and consequently working with an exhaustive comprehension for the readership in this perspective.

3.2 Research Onion

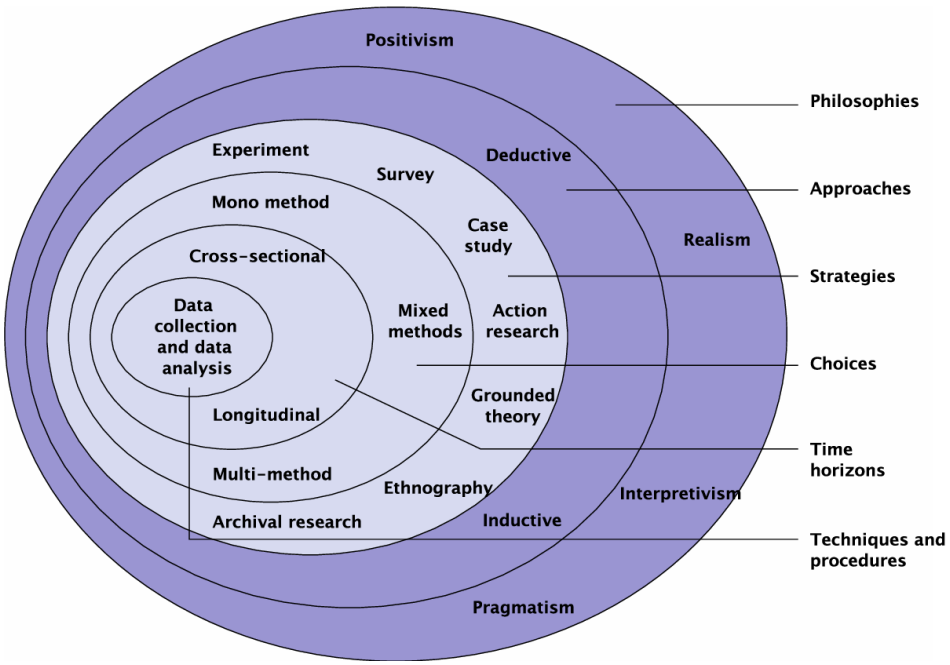


Figure 5: Research Onion

(Sources: Self-made)

3.3 Research Approach

In this context, choosing the right philosophical approach is fundamental in research, as it significantly shapes the review's results and discoveries too philosophical systems like interpretivism, positivism, and realism stand as support points in research technique, each giving exceptional qualities and utility and the decision of philosophy should line up with the substance of the concentrate in this time (Heston, 2023). In the ebb and flow viewpoint, a nuanced comprehension of hazard factors, as well as the complexities of oil and gas improvement projects in non-industrial countries, is fundamental too and interpretivist philosophical arises as the most philosophical decision and this philosophical position focuses on emotional understanding and setting and permitting specialists to dive profoundly into the intricacies of human encounters and social peculiarities in this period. Basak, (2020), expressed that by executing an interpretive methodology, the exploration expects to catch the multi-layered nature of hazard factors in oil and gas projects, explicitly in emerging nations and this strategy enables scientists to explore the subtleties of these conditions, working with an extensive comprehension of the topic as well as embracing interpretivism guarantees the review is exceptional to satisfy its examination targets by embracing the extravagance of subjective bits of knowledge and context oriented grasping in this time.

3.4 Research Philosophy

In this unique circumstance, the exploration approach fills in as a foundation in the building of examination, essential for guaranteeing the exploration design is really accomplished by giving a make way for examination and two conspicuous philosophies, inductive and deductive, are used to dissect information and reach determinations in this imminent time (Bringsjord *et al*, 202). In terms of that, in the inductive approach, emphasis is placed on existing theories to illuminate the research's purpose as well as this method involves a bottom-up approach, where observations lead to the formation of theories and the deductive approach involves the creation of new ideas based on existing theories, employing a top-down approach in this manner. In a similar way, for the proposed study, an inductive research approach is selected to fulfil its purpose as well and this decision underscores the intention to deeply probe existing theories in order to shed light on the research question in this prosperous way (Carvajal and Sanchez, 2024). Along with that, by adopting an inductive stance, the research aims to extract meaningful insights from observed phenomena, permitting for a comprehensive understanding

of the subject matter and existing theories have been meticulously scrutinized and interpreted to guide the trajectory of the investigation in such a way.

3.5 Research Method

Researchers pick between qualitative and quantitative strategies in light of their review's necessities or targets. Quantitative exploration includes numerical information investigation to satisfy research objectives and purposes (Dawadi *et al.*, 2021). Alternatively, qualitative examination centres around non-numerical information, underlining unmistakable translation to concentrate on direct. In the impending examination, a qualitative methodology is considered proper. This choice emerges from the need for profound understanding, significant for completely tending to the examination targets. By social occasion and dissecting engaging information, the review means to dig into the mind-boggling subtleties of the topic. Through qualitative strategies, the scientist expects to unwind the view of creators, consequently acquiring significant experiences in the exploration region. The qualitative methodology adjusts consistently with the review's goals, considering a rich investigation of the point (George *et al.* 2023). By focusing on qualitative investigation, the examination attempts to uncover nuanced understandings and context-oriented experiences. In this manner, the qualitative technique is appropriately decided to guarantee the proposed study's motivation is entirely acknowledged through top-to-bottom translation and examination.

3.6 Data collection process

collection fills in as the foundation of examination, enveloping the approaches utilized by analysts to accumulate essential data, in this way satisfying the exploration targets. The picked data collection strategy altogether impacts the direction of the examination attempt. In the domain of data collection, primary and secondary methodologies rule, with blended strategies likewise getting momentum for their mix of qualitative and quantitative procedures (Aisyah and Afrizal, 2022). For the proposed study, a secondary data-gathering approach is considered suitable. This involves the aggregation and understanding of existing data promptly accessible in the public space. In particular, the specialist expects to accumulate secondary data from different legitimate sources, for example, government sites, true diaries and articles, industry reports, and news articles. These sources are rich archives of important data relevant to the examination subject. By utilizing secondary data, the review means to take advantage of an

abundance of existing information and experiences, considering a far-reaching investigation of the topic. The choice to utilize a secondary data collection technique line up with the review's targets and guarantees the productive use of existing assets (Aryan *et al.* 2021). By fastidiously choosing legitimate sources, the specialist tries to accumulate great information that will contribute fundamentally to the review's results. In this manner, through the prudent utilization of secondary data assortment, the proposed research tries to propel understanding and shed light on the designated research region.

3.7 Sample size

In this segment of the sample size, it can be found that a random sampling technique is employed, ensuring that every individual within the population has an equal chance of being selected for the study and the survey targets a sample size of 80 participants, encompassing both male and female individuals in this era (Mweshi and Sakyi, 2020). Hence, the review centers around participants aged 18 to 45 years and by using random sampling, the review expects to acquire a delegate sample that reflects the variety of the populace being scrutinized from this perspective. Alongside that, this approach helps address predispositions as well as guarantees that the discoveries should be summed up to the more extensive populace too by including members across different segment qualities, the overview plans to catch an exhaustive scope of points of view and encounters in this period.

3.8 Data analysis technique

In this specific circumstance, quantitative data examination has been directed utilizing SPSS application, a broadly used device for factual examination and through SPSS, different measurable strategies like correlation, regression, and frequency tests were utilized to examine the factual data gathered from the review in this perspective (Alem, 2020). In this period correlation analysis dives into the correlation between various factors, making sense of the degree of their association and Regression investigation digs further, examining the prescient force of at least one free factor on a reliant variable, Frequency tests, then again, give experiences into the dissemination and event of various factors inside the dataset in this time. Then again, subjective information examination was completed utilizing topical investigation, a deliberate technique for distinguishing examples, topics, and implications inside qualitative data and through topical examination, diaries, articles sites, or other subjective sources were

carefully inspected in this perspective (Peel, 2020). At the same time, this approach permits researchers to uncover recurring themes, insights, and perspectives embedded within the qualitative data, offering valuable context as well as depth to complement the quantitative findings as well as by using both quantitative and qualitative analyses, the study aimed for a comprehensive understanding of the research topic, enriching the interpretation of results in this era.

3.9 Ethical Consideration

In this context, Ethical principles structure the foundation of each and every examination attempt, defending its pertinence and realness (Sætra and Danaher, 2022). Also, moral considerations significantly impact the propriety of examination discoveries. In the proposed study, the specialist maintains the best expectations of exploration morals. In particular, the scientist keeps a fair-minded and unbiased position, guaranteeing that translations are grounded exclusively in authentic proof. Appropriate credit is agreed to the separate creators through fastidious ***in-text reference***s, recognizing their commitments to the assemblage of information (Kala, 2022). Moreover, the scientist is focused on the individual convictions and upsides of people, networks, and gatherings engaged with the review. Care is made to stay away from any moves or explanations that might inflict any kind of damage or offence. Besides, every work is made to direct the concentration as per laid out moral standards, guaranteeing straightforwardness, honesty, and regard for all members included (Aston *et al.* 2023). By adhering to thorough moral principles, the proposed concentrates on attempts to maintain the trust and uprightness fundamental for significant exploration results.

3.10 Summary

It is summaries that this technique section fills in as an extensive guide, directing the reader through the many-sided layers of the examination approach utilized. By carefully clarifying every part, from philosophical underpinnings to viable execution, this section guarantees lucidity and straightforwardness in the examination cycle. The reception of interpretive research reasoning, inductive examination approach, subjective examination technique, and optional information assortment approach is painstakingly legitimate, lining up with the review's goals and working with a nuanced investigation of the exploration point. Besides, the careful thought of moral standards highlights the obligation to trustworthiness and regard for

all members. By sticking to thorough moral principles and utilizing a wise mix of quantitative and qualitative examinations, the proposed concentration tries to create significant experiences and add to the collection of information in the field.

Chapter 4: Data analysis

4.1 Introduction

In this chapter, both qualitative and quantitative data analyses are investigated to give an exhaustive comprehension of the exploration point. Qualitative data analysis includes distinguishing topics in light of codes or keywords extricated from the information. In this review, 102 relevant codes were recognized, from which 12 codes were chosen to frame 4 codes: Technical Risks and Challenges, Financial Uncertainties and Budgetary Limitations, Natural Effect and Regulatory Consistence, and Socio-Political Elements and Partner Commitment. These themes epitomize the significant parts of the examination point and deal with experiences in the intricacies of oil and gas construction projects. Then again, quantitative information investigation techniques like correlation, regression, and frequency tests were utilized to analyze relationships, foresee results, and survey the meaning of different variables inside the examination setting. These quantitative examinations supplement the qualitative discoveries, giving a far-reaching point of view on the exploration subject.

4.2 Qualitative data analysis

Theme 1: Technical Risks and Challenges

In the qualitative review investigating risk factors in oil and gas construction projects, thematic examination revealed a pervasive subject underlining the horde of specialized dangers and difficulties inborn in such endeavours (Medeiros and Guzmán, 2023). Through interviews with industry specialists, project managers, as well as partners straightforwardly engaged with oil and gas projects, a rich embroidery of specialized intricacies arose, revealing insight into the complex idea of dangers experienced during project execution. One of the primary specialized difficulties highlighted by members was the impressive errand of exploring complex topographical circumstances (Aseh *et al.* 2020). In many emerging nations where oil and gas investigation and creation are growing, the geographical scene presents critical obstacles. For example, in districts described by tough landscapes or seismic action, boring activities become intrinsically less secure and more perplexing.

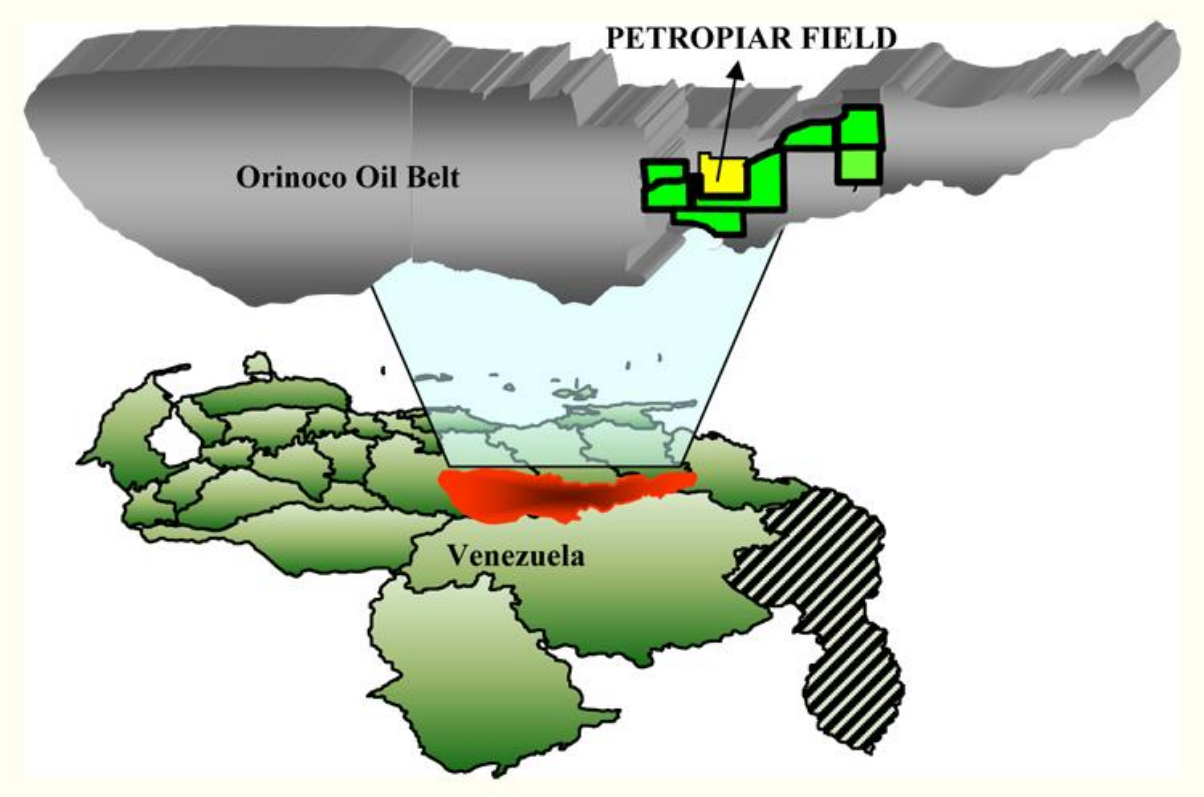


Figure 6: Orinoco Oil Belt

(Sources:
https://www.searchanddiscovery.com/documents/2009/50228sanchez/images/fig01.htm)

An illustrative model is the Orinoco Belt in Venezuela, where the extraction of weighty unrefined petroleum from immense supplies underneath layers of sandstone and shale presents impressive land difficulties (Yin, 2021). Here, organizations like Petroamazonas should convey progress and utilize specific strategies to alleviate land gambles and guarantee functional effectiveness. In this context, a deficient framework arose as an unavoidable issue worsening specialised gambles in oil and gas projects. Members featured the absence of strong transportation organizations, storage spaces, and energy foundations in many agricultural nations, obstructing project coordinated factors and expanding weakness to disturbances.

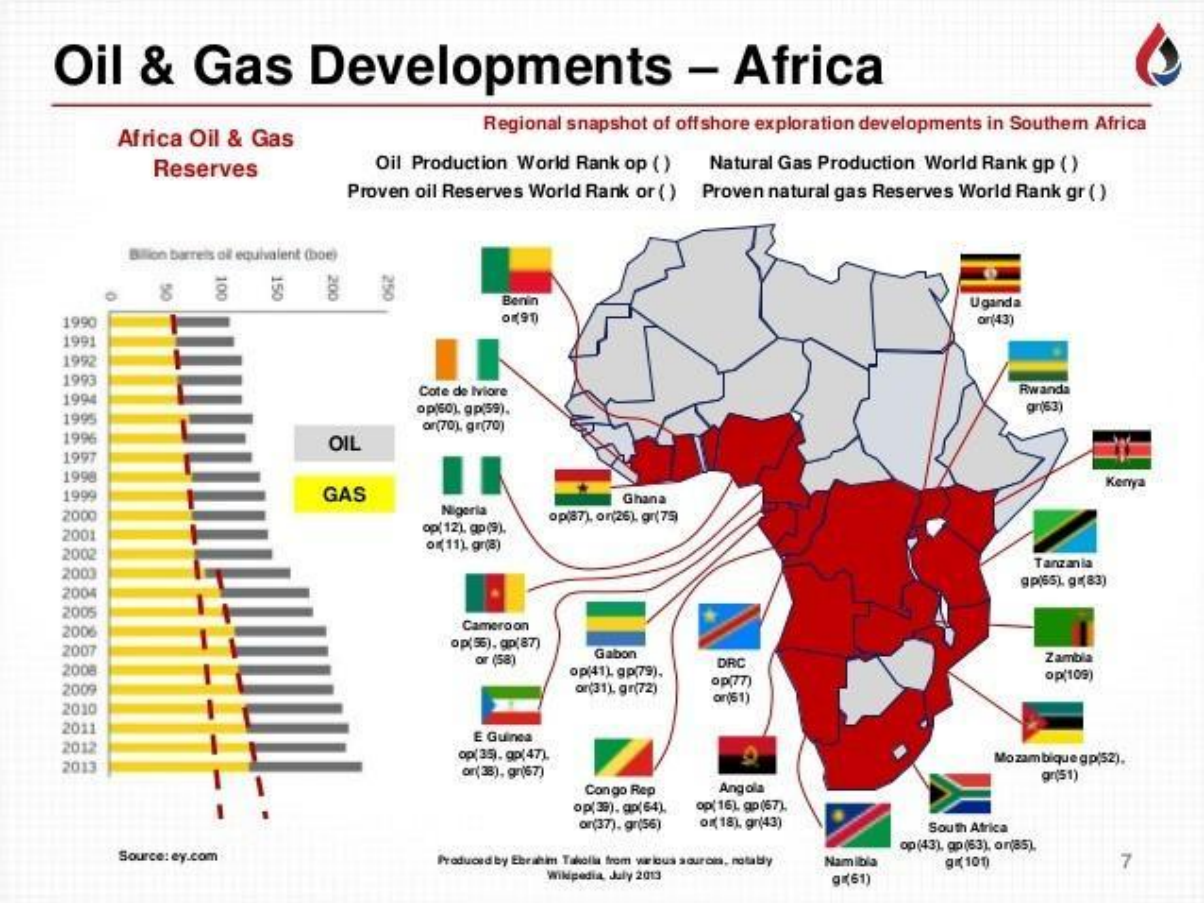


Figure 7: sub-Saharan Africa oil and gas company map

(Sources: chrome-extension://fheoggkfdfchfphceeifdbepaooicaho/html/site_status_block_page.html)

For example, in sub-Saharan Africa, where oil and gas investigation is extending quickly, deficient pipeline organizations and storerooms present calculated difficulties for organizations like Total Energies (Nwankwo *et al.* 2023). Such lacks hamper project effectiveness as well as raise the gamble of mishaps and natural episodes, highlighting the basic requirement for framework advancement to help the oil and gas area's development economically. Mechanical restrictions further intensified the specialized dangers faced by oil and gas projects, especially in non-industrial nation settings. Members referred to challenges related to obsolete hardware, lacking innovative ability, and restricted admittance to state-of-the-art advancements.

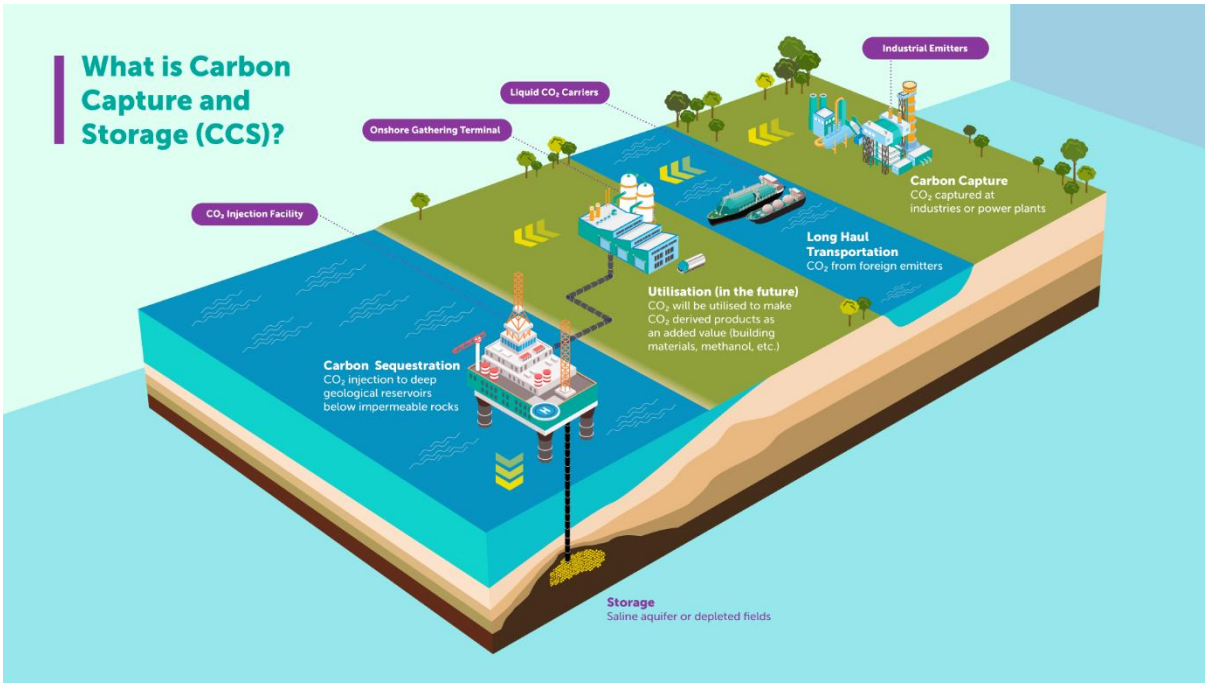


Figure 8: Petronas frequently wrestles

(Sources: https://www.petronas.com/flow/technology/unlocking-new-opportunities-through-carbon-capture-storage)

For instance, in Southeast Asia, where seaward penetrating is pervasive, organizations like Petronas frequently wrestle with the maturing framework and hardware unwavering quality issues. The dependence on obsolete innovation improves the probability of gear disappointment and functional disturbances, featuring the basis for continuous mechanical advancement and interest in labor force preparation and advancement (Yaseen, 2021). In the midst of these specialized difficulties, repetitive subjects of hardware disappointment, store network disturbances, and development postponement arose, further emphasizing the many-sided nature of specialized takes a chance in project execution. Factual information from industry reports confirms these discoveries, uncovering that hardware disappointments represent a huge extent of venture personal time and cost invades. For example, as per a report by Deloitte, advancement disappointments add to roughly 42% of spontaneous free time in the oil and gas area, addressing a significant monetary weight for organizations (Rozenthuler, 2020). Additionally, inventory network disturbances, whether because of international insecurity, catastrophic events, or calculated bottlenecks, can have extensive ramifications for project timetables and expenses. The Coronavirus pandemic highlighted the weakness of worldwide

stockpile chains, prompting postponements in project conveyances and asset deficiencies for oil and gas organizations around the world.

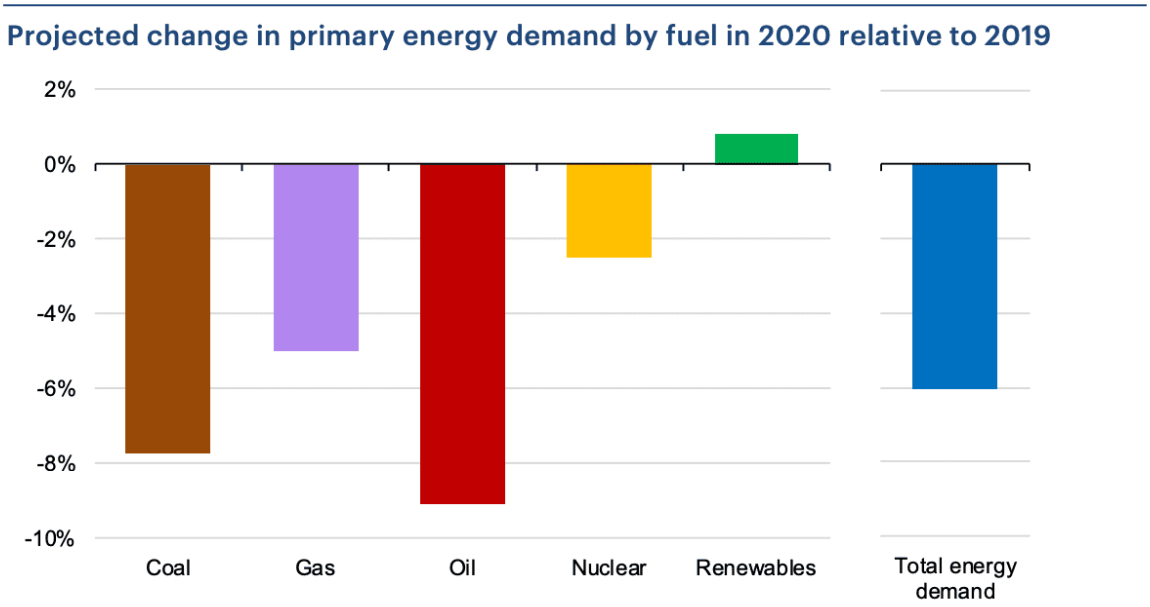


Figure 10: projected change in primary energy demand by fuel in 2020

(Sources: https://www.investopedia.com/global-energy-demand-to-plunge-6-this-year-iea-4843727)

As per the Worldwide Energy Organization (IEA), the pandemic-actuated production network disturbances brought about an expected 12% decrease in worldwide oil and gas interests in 2020, featuring the significant effect of store network gambles on project financial matters. Development delays, one more repetitive topic recognized in the topical examination, can have flowing consequences for project timetables, financial plans, and partner certainty. According to Maoeng, (2020), Information from industry benchmarks shows that development delays are unavoidable in the oil and gas area, with around 64% of tasks encountering plan overwhelms.

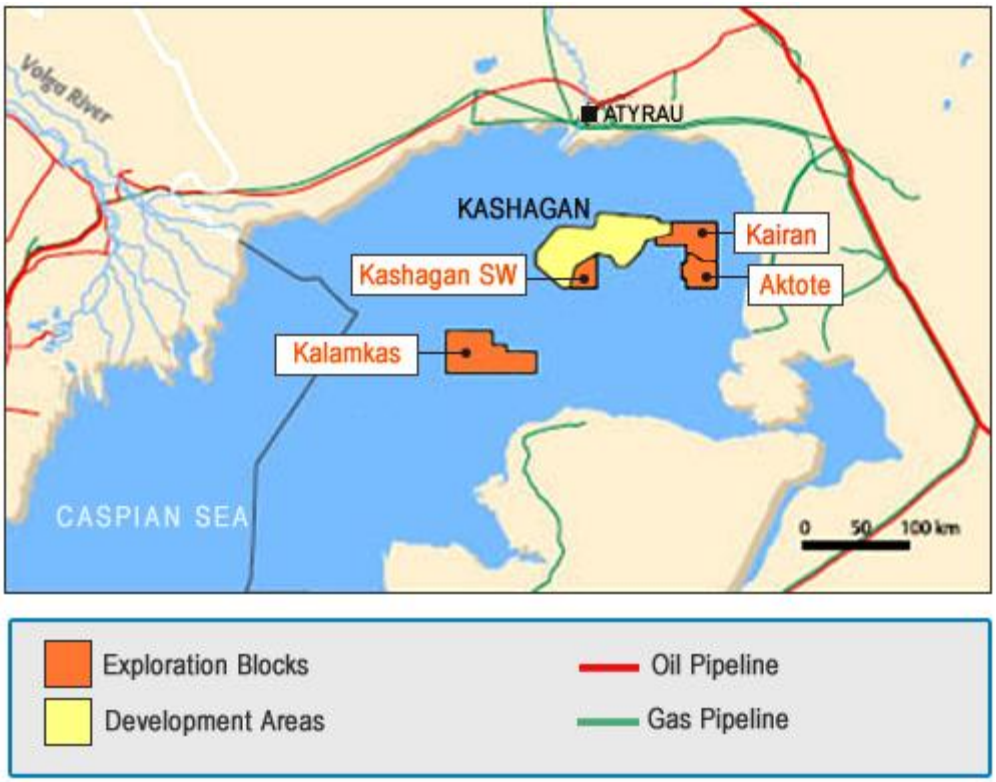


Figure 11: The Kashagan oil field project

(Sources: https://www.greencarcongress.com/2013/09/20130913-eni.html)

For instance, The Kashagan oil field project in Kazakhstan, worked by the North Caspian Working Organization (NCOC), is one of the most aggressive oil and gas improvements worldwide. Arranged roughly 80km seaward Atyrau in the North Caspian Ocean, Kashagan stage one addresses a fantastic venture of £45bn ($55bn) and is viewed as one of the world's most in fact provoking undertakings to date (The Kashagan oil field project, 2024). In spite of its huge potential, the task experienced various mishaps, including designing difficulties, natural worries, and debates with project workers, prompting broad deferrals and cost overwhelms. At first, planned for culmination in 2005, Kashagan's work started business creation in October 2016, almost 10 years bogged down. The undertaking included the development of artificial islands, seaward boring exercises, and the advancement of coastal handling offices to help oil and gas production. Notwithstanding its difficulties, Kashagan Stage One arrived at its most extreme plan limit of 380,000 barrels each day (bopd) in 2019, denoting a critical achievement in Kazakhstan's oil and gas industry (The Kashagan oil field project, 2024). With plans for additional extension and full field improvement, Kashagan stays

a point of convergence for the locale's energy goals, but with illustrations gained from its turbulent excursion.

Theme 2: Financial Uncertainties and Budgetary Constraints

Monetary vulnerabilities arose as a predominant topic in the qualitative examination of hazard factors in oil and gas development projects in emerging nations. Members reliably voiced concerns in regards to project subsidizing, cost overwhelms, and income projections, mirroring the complicated monetary scene inborn in such endeavours. This subject highlights the basic significance of monetary security and foreknowledge in exploring the intricacies of undertaking execution and manageability.

Figure 12: Bonga oil field project in Nigeria

(Sources: https://insidebusinessafricang.com/2020/07/01/oil-production-resumes-on-bonga-as-operator-concludes-maintenance/)

One genuine model that epitomizes the difficulties presented by monetary vulnerabilities is the Bonga oil field project in Nigeria. The Bonga field, worked by Shell Nigeria Investigation and Creation Organization (SNEPCo), is one of Nigeria's biggest oil discoveries and addresses a huge interest in the nation's oil and gas area (Ossai, 2020). Notwithstanding its gigantic potential, the undertaking confronted significant monetary obstacles, including cost invades

and subsidizing deficiencies, which fundamentally affected its encouragement and productivity. The Bonga project at first experienced deferrals and cost accelerations during its improvement stage, credited to a blend of specialized difficulties, administrative intricacies, and fluctuating economic situations (Olujobi *et al.* 2022). As a deepwater project, Bonga required significant forthright interest in framework and innovation, including subsea hardware, penetrating apparatuses, and creation offices.

Be that as it may, unanticipated specialized issues and strategic imperatives prompted defers in project courses of events and expanded capital use, compounding monetary tensions among project partners. Besides, the instability of worldwide oil costs and cash trade rates additionally intensified the monetary vulnerabilities encompassing the Bonga project. Nigeria's economy, vigorously dependent on oil incomes, is helpless to variances in raw petroleum costs, which straightforwardly influence the productivity and monetary suitability of oil and gas projects in the country (Tauhid, 2021). The sharp decrease in oil costs lately, combined with money deterioration and monetary precariousness, made huge difficulties for project supporting and income age, driving venture administrators to rethink their monetary procedures and hazard the executives rehearses.

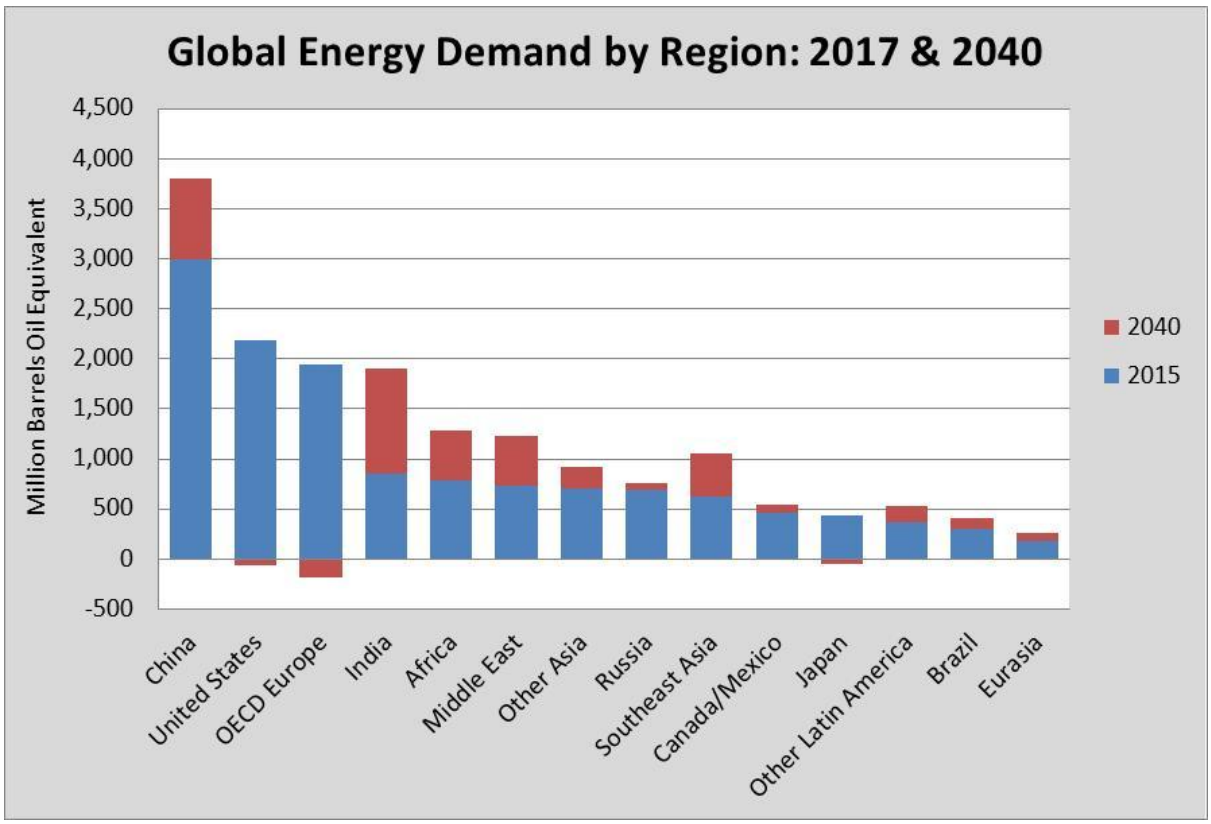


Figure 13: Global energy demand

(Sources: https://www.globalenergyinstitute.org/international-energy-agency-releases-its-world-energy-outlook)

Notwithstanding outer market influences, monetary requirements and insufficient asset designation arose as inward difficulties influencing the monetary manageability of oil and gas development projects (Abushrenta, 2022). Deficient subsidizing for project advancement and functional costs frequently brought about postpones in obtainment, development, and charging exercises, prompting cost overwhelms and plan slippages. Also, restricted admittance to capital and funding choices obliged the capacity of task partners to alleviate monetary dangers and seek amazing learning experiences, hampering the general outcome of oil and gas adventures in agricultural nations. Measurable information further backs the meaning of monetary vulnerabilities in oil and gas development projects. As per a concentration by the International Energy Organization (IEA), more than 60% of oil and gas projects internationally experience cost overwhelms, with delays averaging 30% past the first task timetable (Flouros, 2022). Besides, research by Deloitte demonstrates that deficient subsidizing and monetary bungle are among the top explanations behind project disappointments in the oil and gas industry, featuring the unavoidable effect of monetary dangers on project results.

Theme 3: Environmental Impact and Regulatory Compliance

The thematic examination highlighted the urgent job of natural effect and regulatory consistency in oil and gas development projects, revealing insight into the mind complex interplay between industry activities, ecological preservation, and administrative structures (Syaban and Appiah-Opoku, 2024). Members in the concentrate reliably featured the basics of complying with severe ecological guidelines, alleviating contamination gambles, and advancing manageable practices all through the undertaking lifecycle. This topical accentuation mirrors a developing familiarity with the ecological difficulties presented by oil and gas exercises and the squeezing need for the mindful undertaking of the executives to protect environments and networks. A relevant genuine model that represents the meaning of natural contemplations in oil and gas projects is the Exxon Valdez oil slick, perhaps the biggest ecological calamity ever. In Walk 1989, the Exxon Valdez oil big hauler steered into the rocks off the shoreline of Gold Country, delivering more than 11 million gallons of raw petroleum into Ruler William Sound (Ayoo, 2020). The spill crushed marine biological systems,

dispensing with many seabirds, marine well-evolved creatures, and fish, and causing long-term environmental harm to the district.

The Exxon Valdez fiasco featured the disastrous results of lacking natural protections and administrative oversight in the oil and gas industry (D'silva, 2020). The occurrence prodded critical administrative changes, including the execution of stricter natural guidelines, upgraded spill reaction conventions, and expanded oversight of oil big hauler activities. Besides, it filled in as a reminder for the business to focus on natural security and take on additional economical practices in project arranging and execution. The Thematic examination likewise enlightened key subjects connected with natural preservation and local area commitment to oil and gas development projects (Isallah, 2023). Members stressed the significance of protecting environments, monitoring biodiversity, and drawing in with nearby networks to guarantee maintainable task results. These subjects highlighted the requirement for proactive measures to limit biological aggravations, relieve natural surroundings fracture, and address the financial effects of oil and gas exercises on native people groups and underestimated networks.

Factual information further substantiates the meaning of natural contemplations in the oil and gas area. As per the Worldwide Energy Organization (IEA), the oil and gas industry represents a huge piece of worldwide ozone-depleting substance emanations, adding to environmental change and natural debasement (Sahoo *et al.* 2021). Besides, research by the Assembled Countries Climate Program (UNEP) features the ecological effects of oil and gas investigation and creation, including territory obliteration, water contamination, and air discharges. Regulatory consistency is likewise a basic part of ecological administration in oil and gas projects (Basile *et al.* 2021). State-run administrations and administrative organizations all over the planet have executed severe natural regulations and guidelines to relieve the antagonistic impacts of industry exercises on the climate and general well-being. Consistency with these guidelines is fundamental for project engineers to get grants, licences, and endorsements for investigation, boring, and creation exercises, guaranteeing legitimate and natural consistency all through the task lifecycle.

Theme 4: Socio-Political Dynamics and Stakeholder Engagement

The thematic examination disclosed the significant effect of socio-political dynamics as well as partner commitment on oil and gas construction projects, featuring the perplexing interchange between regulatory environments, partner interests, and undertaking results.

Participants in the review underlined the significance of exploring complex government systems, and local communities and encouraging cooperative organizations with government organizations, neighbourhood networks, and native gatherings to guarantee project achievement and relieve chances (Sakapaji *et al.* 2024). Themes like political precariousness, social distress, and community obstruction highlighted the basic job of proactive partner commitment and compelling communication techniques in upgrading project flexibility and sustainability.

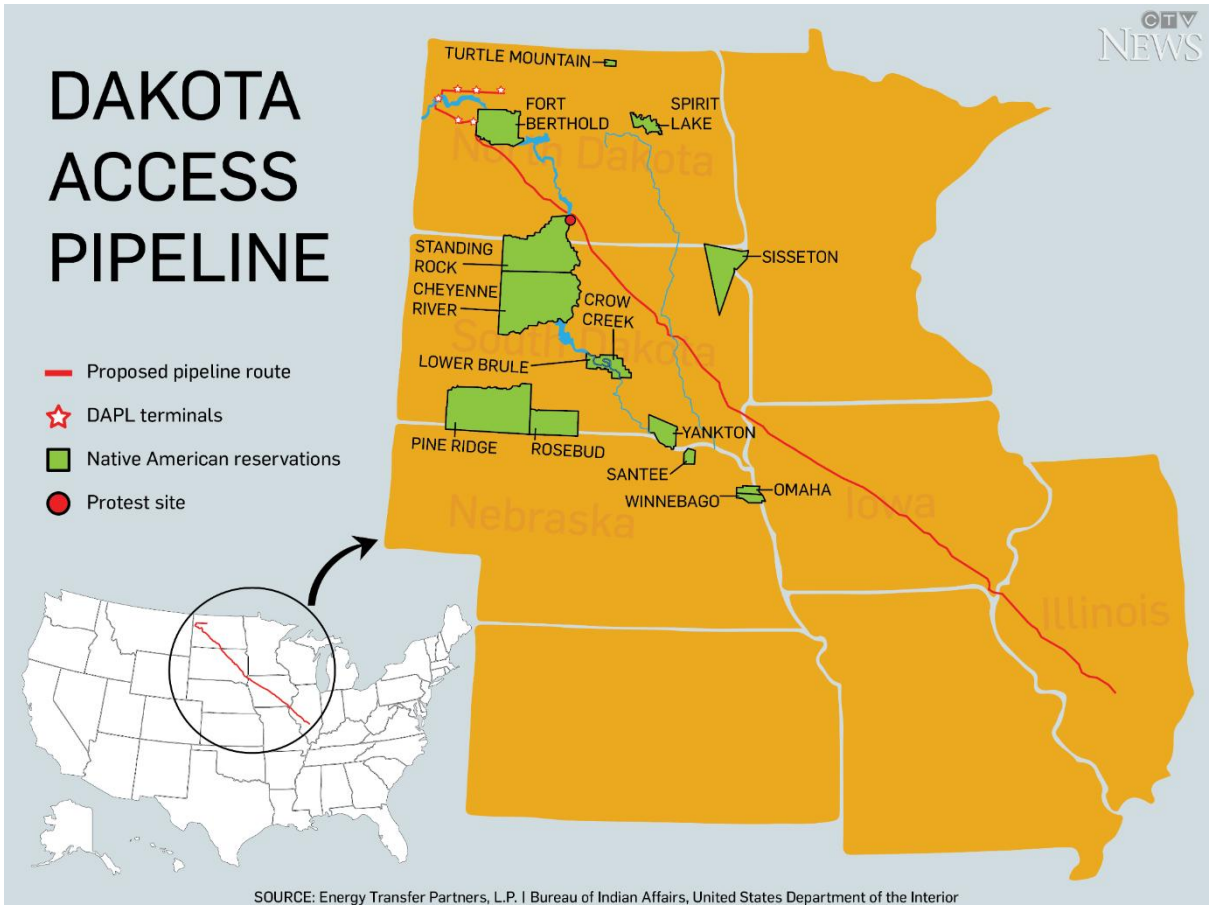


Figure 14: Dakota Access Pipeline

(Sources: https://www.ctvnews.ca/world/dakota-access-pipeline-explained-what-you-need-to-know-1.3143020)

A real-life example that clearly represents the meaning of socio-political elements in oil and gas projects is the contention encompassing the Dakota Access Pipeline (DAPL) in the US (Johnston, 2024). The DAPL project, a 1,172-mile unrefined petroleum pipeline, pulled in broad protests and lawful difficulties from native networks, natural activists, and nearby

occupants worried about its expected effect on water assets, sacred destinations, and ancestral sway (Sherwood, 2020). The protests, which earned global consideration, featured firmly established socio-political strains, ecological equity issues, and the requirement for significant meetings and assent with impacted partners. The DAPL debate represents the intricacies of partner commitment and the difficulties of adjusting contending interests in oil and gas projects (Laurent, 2021). It highlights the significance of integrating partner viewpoints, tending to community concerns, and encouraging comprehensive dynamic cycles to construct trust, moderate struggles, and elevate social permits to operate.

Statistical information further clarifies the meaning of socio-political elements and partner commitment in the oil and gas industry. As per research by the World Bank, socio-political dangers, including political flimsiness, social turmoil, and regulatory vulnerability, can altogether affect speculation choices and undertaking results in the extractive area. Also, concentrates on by the Worldwide Association for Impact Assessment (IAIA) features the significance of partner commitment in guaranteeing the social worthiness and sustainability of energy projects, including oil and gas improvements (Munge and Nicko, 2023). Successful partner commitment isn't just pivotal for overseeing project gambles yet in addition for upgrading social and financial improvement results. Research by the "United Nations Development Programme (UNDP)" stresses the job of comprehensive partner commitment in advancing sustainable development and encouraging positive social effects in asset-rich networks (Weinlich *et al.* 2022). By drawing in with nearby partners, regarding native privileges, and supporting community improvement drives, oil and gas organizations can add to poverty decrease, work creation, and limit working in have districts.

4.3 Quantitative data analysis

Correlation

In this context, the complex dynamics of the environment of the oil sector are clarified by the relationships among different elements and there is a little positive correlation (0.251) indicating that strict restrictions ought to reduce risks between the perceived significance of governmental laws and the biggest risk factor in oil production in this viewpoint (Ali *et al.* 2020). On the other hand, a substantial correlation (0.352) highlighting the critical significance of technical innovation in promoting sector resilience is demonstrated between it as well as risk reduction and the significant influence of stakeholder cooperation on risk assessment (0.371)

focus on the requirement of cooperative involvement in reducing uncertainty as well as a strong correlation (0.520) between financial limitations as well as technical innovation highlights the crucial role that investment plays in advancing technology in this era.

Correlations

		Whatisyourage	Whatisyourgender	Howwouldyouratetheimportanceofgovernmentalregulationsin	Inyouropinionwhatisthemostsignificantriskfactorinoil	Howdoyouperceivetheimpactoflocalworkforceskilllevelso	Towhatextentdoyoubelievefinancialconstraintscontributet	Howcrucialdoyouconsidertechnologicalinnovationinreducing	Howdoyouratetheroleofprojectmanagementpracticesinmini	Inyourexperiencehowinfluentialisstakeholdercollaboration	Howdoyouassesstheimpactofnaturaldisastersandclimatech
Whatisyourage	Pearson Correlation	1	-.026	.010	.251*	.024	.178	.352**	.298**	.104	.116
	Sig. (2-tailed)		.813	.926	.019	.822	.098	.001	.005	.339	.286
	N	87	87	87	87	87	87	87	87	87	87
Whatisyourgender	Pearson Correlation	-.026	1	.395**	.140	.109	.210*	.100	.119	.163	.234*
	Sig. (2-tailed)	.813		.000	.193	.313	.049	.353	.269	.129	.029
	N	87	88	88	88	88	88	88	88	88	88
Howwouldyouratetheimportanceofgovernmentalregulationsin	Pearson Correlation	.010	.395**	1	.310**	.226*	.323**	.286**	.092	.371**	.195
	Sig. (2-tailed)	.926	.000		.003	.034	.002	.007	.395	.000	.068
	N	87	88	88	88	88	88	88	88	88	88
Inyouropinionwhatisthemostsignificantriskfactorinoil	Pearson Correlation	.251*	.140	.310**	1	.379**	.310**	.187	.192	.306**	.280**
	Sig. (2-tailed)	.019	.193	.003		.000	.003	.081	.073	.004	.008
	N	87	88	88	88	88	88	88	88	88	88
Howdoyouperceivetheimpactoflocalworkforceskilllevelso	Pearson Correlation	.024	.109	.226*	.379**	1	.241*	.171	.275**	.258*	.143
	Sig. (2-tailed)	.822	.313	.034	.000		.024	.112	.009	.015	.185
	N	87	88	88	88	88	88	88	88	88	88
Towhatextentdoyoubelievefinancialconstraintscontributet	Pearson Correlation	.178	.210*	.323**	.310**	.241*	1	.520**	.325**	.350**	.309**
	Sig. (2-tailed)	.098	.049	.002	.003	.024		.000	.002	.001	.003
	N	87	88	88	88	88	88	88	88	88	88
Howcrucialdoyouconsidertechnologicalinnovationinreducing	Pearson Correlation	.352**	.100	.286**	.187	.171	.520**	1	.328**	.298**	.198
	Sig. (2-tailed)	.001	.353	.007	.081	.112	.000		.002	.005	.064
	N	87	88	88	88	88	88	88	88	88	88
Howdoyouratetheroleofprojectmanagementpracticesinmini	Pearson Correlation	.298**	.119	.092	.192	.275**	.325**	.328**	1	.240*	.214*
	Sig. (2-tailed)	.005	.269	.395	.073	.009	.002	.002		.024	.046
	N	87	88	88	88	88	88	88	88	88	88
Inyourexperiencehowinfluentialisstakeholdercollaboration	Pearson Correlation	.104	.163	.371**	.306**	.258*	.350**	.298**	.240*	1	.286**
	Sig. (2-tailed)	.339	.129	.000	.004	.015	.001	.005	.024		.007
	N	87	88	88	88	88	88	88	88	88	88
Howdoyouassesstheimpactofnaturaldisastersandclimatech	Pearson Correlation	.116	.234*	.195	.280**	.143	.309**	.198	.214*	.286**	1
	Sig. (2-tailed)	.286	.029	.068	.008	.185	.003	.064	.046	.007	
	N	87	88	88	88	88	88	88	88	88	88

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1: Correlation

(Sources: Self-made)

It was fascinating, that project management practices demonstrated a positive correlation (0.298) with stakeholder collaboration, showing the interdependence of efficient project management as well as collaborative engagement for effectiveness outcomes and local workforce skill levels correlate significantly (0.379) with the most significant risk factor, emphasizing the importance of skilled labor in risk management strategies in this era (Cantelmi *et al.* 2021). As a result, the correlations highlight the multifaceted nature of risk management in the oil sector, where regulatory compliance, technological innovation, stakeholder collaboration, as well as workforce skills intertwine to shape resilience and sustainability in this era.

Regression analysis

Descriptive Statistics

	Double-click to activate	. Deviation	N
Whatisyourgender		.3988	87
Whatisyourage	1.264	.5595	87
Howwouldyouratetheimportanceofgovernmentalregulationsin	1.724	.7102	87
Inyouropinionwhatisthemostsignificantriskfactorinoil	1.437	.6595	87
Howdoyouperceivetheimpactoflocalworkforceskilllevelso	1.529	.7127	87
Towhatextentdoyoubelievefinancialconstraintscontributet	1.816	.8426	87
Howcrucialdoyouconsidertechnologicalinnovationinreducing	1.782	.8272	87
Howdoyouratetheroleofprojectmanagementpracticesinmini	1.736	.8416	87
Inyourexperiencehowinfluentialisstakeholdercollaboration	1.805	.9001	87
Howdoyouassesstheimpactofnaturaldisastersandclimatech	1.621	.6689	87

Table 2: Descriptive statistics

(Sources: Self-made)

In this context, the descriptive statistics give views and evaluations from within the oil sector. While conceding the major influence of financial limitations (Mean = 1.816) and technical innovation (Mean = 1.782) in determining the course of the sector, participants on average evaluated government regulations as fairly essential (Mean = 1.724). Additionally judged important (Mean = 1.805) was stakeholder cooperation, emphasizing the acknowledgement of group efforts in resolving issues (Walsh *et al.* 2020). Moreover, participants considered that project management techniques (Mean = 1.736), as well as the skill levels of the local labour

(Mean = 1.529), were important factors influencing operations as well as risk management. Remarkably, respondents assessed the influence of natural catastrophes including climate change rather lower (Mean = 1.621) even though they acknowledged the significance of risk factors in oil production (Mean = 1.437). These figures highlight the many aspects and goals in the sector, which show a complicated interaction of elements influencing strategy development and decision-making.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.447[a]	.200	.106	.3771	.200	2.132	9	77	.036

a. Predictors: (Constant), Howdoyouassesstheimpactofnaturaldisastersandclimatech, Whatisyourage, Howdoyouperceivetheimpactoflocalworkforceskilllevelso, Howwouldyouratetheimportanceofgovernmentalregulationsin, Howdoyouratetheroleofprojectmanagementpracticesinmini, Inyourexperiencehowinfluentialisstakeholdercollaboration, Towhatextentdoyoubelievefinancialconstraintscontributet, Inyouropinionwhatisthemostsignificantriskfactorinoil, Howcrucialdoyouconsidertechnologicalinnovationinreducing

b. Dependent Variable: Whatisyourgender

Table 3: Model Summary

(Sources: Self-made)

In this context, Important information on the ability of several variables to predict gender attitudes in the oil sector is provided by the ***model summary.*** Considering an R-squared value of 0.200, the model shows a moderate degree of explanatory power; thereby, the predictors within the model can account for around 20% of the variation in gender perception (Abba *et al.* 2022). Amongst the predictors, age, local labour skill levels, governmental laws, and the effects of climate change as well as natural catastrophes seem to have a major role in the model's capacity to forecast. A statistically significant result (p = 0.036) from the F-test for overall significance indicates that the model is useful in describing gender perceptions within the setting of the oil sector. Considering an adjusted R-squared value of 0.106, further predictors or variable modification could, however, enhance the model's fit.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.729	9	.303	2.132	.036[b]
	Residual	10.949	77	.142		
	Total	13.678	86			

a. Dependent Variable: Whatisyourgender

b. Predictors: (Constant), Howdoyouassesstheimpactofnaturaldisastersandclimatech, Whatisyourage, Howdoyouperceivetheimpactoflocalworkforceskilllevelso, Howwouldyouratetheimportanceofgovernmentalregulationsin, Howdoyouratetheroleofprojectmanagementpracticesinmini, Inyourexperiencehowinfluentialisstakeholdercollaboration, Towhatextentdoyoubelievefinancialconstraintscontributet, Inyouropinionwhatisthemostsignificantriskfactorinoil, Howcrucialdoyouconsidertechnologicalinnovationinreducing

Table 4: ANOVA

(Sources: Self-made)

In this setting, further details on the importance of the regression model in determining gender attitudes in the oil sector are given by the ANOVA table. The regression model is shown in the table to explain a substantial amount of the variation in gender perception ($F = 2.132$, $p = 0.036$). This suggests that gender perception and at least among the predictor variables within the model are significantly correlated (Melaku *et al.* 2021). The significant sum of squares (2.729) attributable to the regression as compared to the residual sum of squares (10.949) further supports the regression model's capacity to explain variation. Furthermore implying that the variance described by the model is greater than that which would be anticipated by random chance only is the regression's mean square value of 0.303. All things considered, these data provide statistical support for the applicability of the predictor variables to comprehend gender views in the oil sector.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.693	.170		4.067	.000
	Whatisyourage	-.037	.083	-.051	-.443	.659
	Howwouldyouratetheimportanceofgovernmentalregulationsin	.207	.066	.368	3.145	.002
	Inyouropinionwhatisthemostsignificantriskfactorinoil	-.001	.073	-.002	-.019	.985
	Howdoyouperceivetheimpactoflocalworkforceskilllevelso	.002	.064	.004	.036	.972
	Towhatextentdoyoubelievefinancialconstraintscontributet	.040	.061	.084	.648	.519
	Howcrucialdoyouconsidertechnologicalinnovationinreducing	-.043	.063	-.089	-.683	.497
	Howdoyouratetheroleofprojectmanagementpracticesinmini	.037	.055	.077	.661	.510
	Inyourexperiencehowinfluentialisstakeholdercollaboration	-.010	.052	-.022	-.184	.855
	Howdoyouassesstheimpactofnaturaldisastersandclimatech	.092	.066	.154	1.388	.169

a. Dependent Variable: Whatisyourgender

Table 5: Ecoefficiency

(Sources: Self-made)

In this era, the coefficients table gives the estimated relationships between the predictor variables and gender perception within the oil industry as well as the intercept, represented through the constant term, is statistically significant ($t = 4.067$, $p < 0.001$), suggesting that when every predictor variables are zero, there is a baseline level of gender perception in this era (Karmaker *et al.* 2023). In this manner, among the predictor variables, the rating of governmental regulations exhibits a significant positive relationship with gender perception (Beta = 0.368, $t = 3.145$, $p = 0.002$), suggesting that individuals who rate governmental regulations as more important tend to have a certain gender perception as well as other variables such as age, perceived impact of local workforce skill levels, financial constraints, technological innovation, project management practices, stakeholder collaboration, and assessment of natural disasters and climate change do not show statistically significant

relationships with gender perception in such a way (Nguyen and Macchion, 2023). Along with that, these outcomes highlight the nuanced nature of gender perception within the oil industry as well as suggest that governmental regulations play a notable role in shaping such perceptions and further research ought to be needed to fully understand the multifaceted factors influencing gender dynamics in this setting.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.894	1.659	1.195	.1781	87
Std. Predicted Value	-1.694	2.603	.000	1.000	87
Standard Error of Predicted Value	.074	.269	.123	.037	87
Adjusted Predicted Value	.877	1.770	1.198	.1847	87
Residual	-.6590	.8896	.0000	.3568	87
Std. Residual	-1.748	2.359	.000	.946	87
Stud. Residual	-1.889	2.443	-.003	1.009	87
Deleted Residual	-.7702	.9544	-.0029	.4066	87
Stud. Deleted Residual	-1.922	2.527	.003	1.024	87
Mahal. Distance	2.324	42.866	8.897	6.535	87
Cook's Distance	.000	.082	.014	.020	87
Centered Leverage Value	.027	.498	.103	.076	87

a. Dependent Variable: Whatisyourgender

Table 6: Residuals Statistics

(Sources: Self-made)

In this setting, the residual statistics give valuable insights into the accuracy as well as reliability of the regression model predicting gender perceptions within the oil industry and the mean of the predicted values is 1.195, indicating that, on average, the model's predictions align closely with the actual gender perceptions reported by respondents in this era (Ma *et al.* 2020). In a similar way, the standard deviation of the residuals (0.3568) recommended that the model's predictions exhibit little variability around the mean, reflecting the inherent complexity of human perceptions and the standard error of the predicted values (0.123) gives an estimate of the variability of the model's predictions, with lower values indicating more precise predictions in this era. On top of that, metrics such as standardized residuals as well as Cook's distance assist in identifying potential outliers or influential data points that ought to significantly impact the model's performance in this era (Umar, 2022). In this era, the residuals statistics recommended that while the regression model gives reasonably accurate predictions of gender

perceptions within the oil sector, there ought to still be some variability as well as room for improvement in capturing the full range of factors influencing these perceptions as well as further analysis and refinement of the model ought to enhance its predictive power as well as reliability in this era.

In the context of the above diagram, it can be found that the maximum frequency value is 23 and the regression standardized residual value is 2.5. It can also be found that the mean value of the regression test is -1.65E-16 as well as std dev is 0.946 and the number of participants is 87 people (Akter *et al.* 2022). ***[Referred to Appendix 2]***

Frequency test

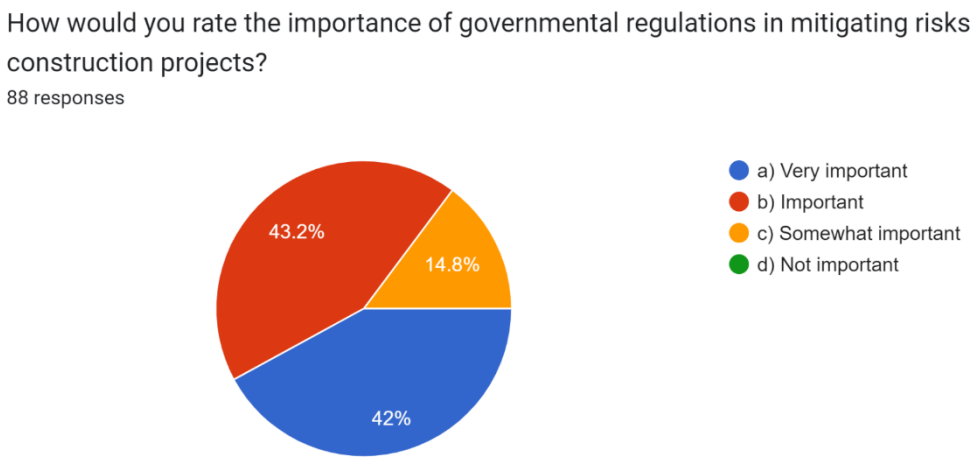


Figure 16: How would you rate the importance of governmental regulations in mitigating risks in oil and gas construction projects?

(Sources: Self-made)

In this context, it can be found that 42% participate in the rate of the very importance of governmental regulations in mitigating risks in oil and gas construction projects (Dvorak *et al.* 2020). It can also be found that 43.2% participate in the rate of the importance of governmental regulations in mitigating risks in oil and gas construction projects and 14.8% participate in the rate of the somewhat importance of governmental regulations in mitigating risks in oil and gas construction projects

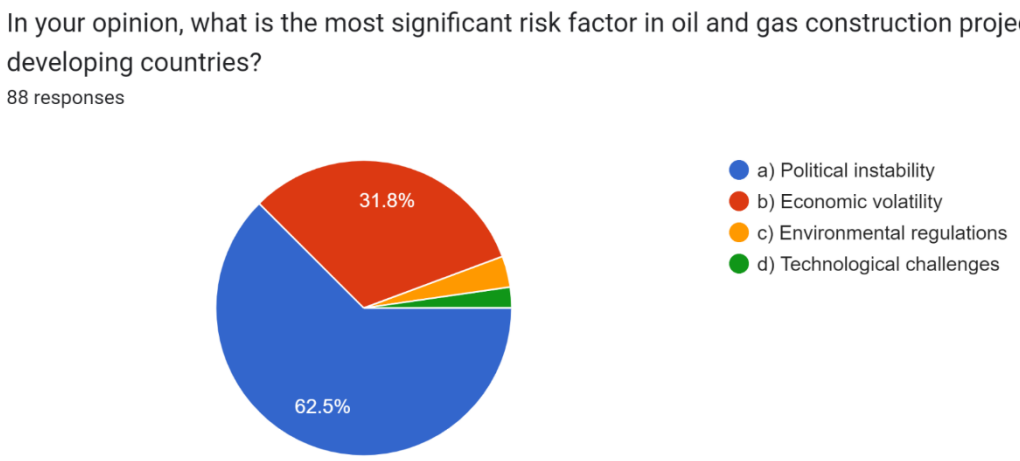


Figure 17: In your opinion, what is the most significant risk factor in oil and gas construction projects in developing countries?

(Sources: Self-made)

In the above figure, it can be found that 62.5% of participants believe that political instability is the most significant risk factor in oil and gas construction projects in developing countries (Banerjee *et al.* 2021). It can also be found that 31.8% of participants believe that political instability is the most significant risk factor in oil and gas construction projects in developing countries.

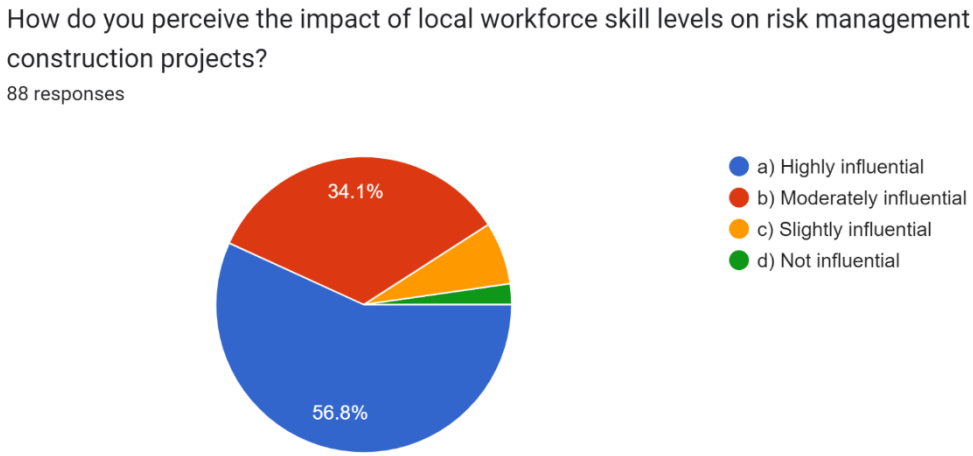


Figure 18: How do you perceive the impact of local workforce skill levels on risk management in oil and gas construction projects?

(Sources: Self-made)

In this above figure it can be found that 56.8% participate highly in influencing the impact of local workforce skill levels on risk management in oil and gas construction projects (Khalilzadeh *et al.* 2021). I can also find that 34.1% of participants are moderately influential on the impact of local workforce skill levels on risk management in oil and gas construction projects.

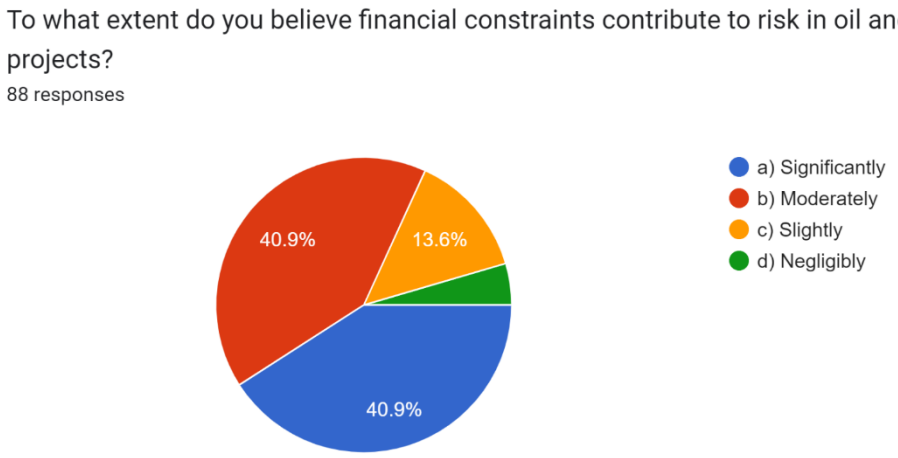


Figure 19: To what extent do you believe financial constraints contribute to risk in oil and gas construction projects?

(Sources: Self-made)

In this above figure, it can be found that 40.9% of people significantly believe financial constraints contribute to risk in oil and gas construction projects (Arena *et al.* 2023). It can also be found that 40.9% participate moderately believe financial constraints contribute to risk in oil and gas construction projects and 13.8% participate slightly believe financial constraints contribute to risk in oil and gas construction projects.

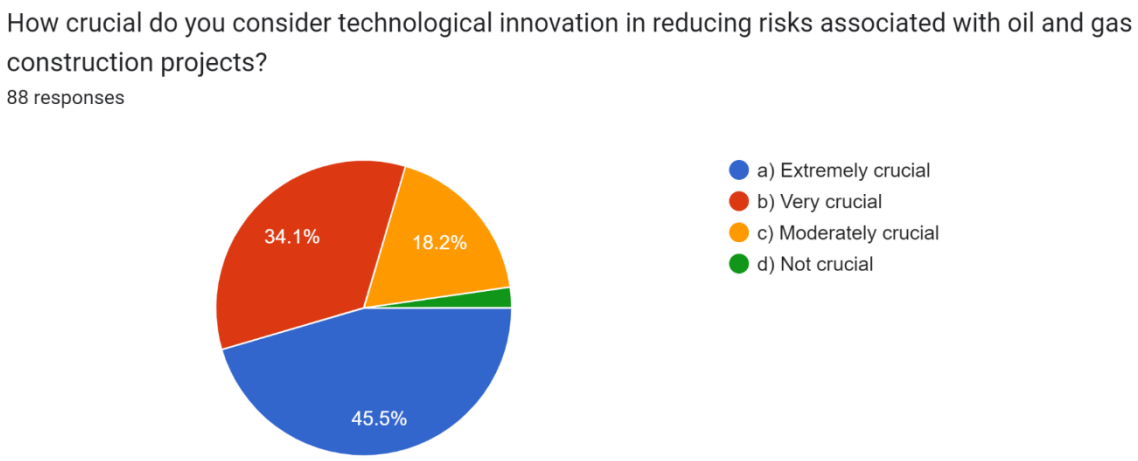


Figure 20: How crucial do you consider technological innovation in reducing risks associated with oil and gas construction projects?

(Sources: Self-made)

It can also be found that 45.5% participate extremely crucially they consider technological innovation in reducing risks associated with oil and gas construction projects and 34.1% participate very crucially they consider technological innovation in reducing risks associated with oil and gas construction projects (Wang *et al.* 2020). It can be found that 18.2% participate moderately crucial do they consider technological innovation in reducing risks associated with oil and gas construction projects.

4.4 Conclusion

It can be concluded that the qualitative and quantitative information examinations give important experiences into the multi-layered nature of hazard factors in oil and gas construction projects. The thematic assessment revealed unavoidable specialized difficulties, monetary vulnerabilities, environmental effects, and socio-political elements moulding project results. Real-life examples, such as the Bonga oil field project and the Dakota Access Pipeline discussion highlighted the intricacies and meaning of these risk factors in project executives.

Besides, statistical information, correlation investigations, regression models, and frequency tests featured the interconnectedness of different elements affecting undertaking versatility and sustainability. The discoveries underline the basic significance of proactive gambling the board methodologies, stakeholder commitment, regulatory consistency, and technological innovation

in relieving chances and advancing fruitful task results in the oil and gas industry. Generally, the exhaustive examination highlights the requirement for all-encompassing methodologies and key decision-making to address the different difficulties inherent in oil and gas construction projects.

Chapter 5: Conclusion

5.1 Linking with objective

Objective 1: To recognize the reason behind risk management in oil and gas construction projects.

In terms of that viewpoint, understanding the rationale behind risk management in oil and gas construction projects is crucial for guaranteeing project achievement and partner fulfilment as well by understanding the basic explanations behind carrying out management systems, stakeholders ought to successfully expect, survey, and alleviate the potential risk that might emerge during project execution in this dynamic way (Kassem *et al.* 2020). Perceiving these reasons cultivates a proactive way to deal with project arranging and execution, empowering groups to distinguish and address a chance before they grow into exorbitant issues or postponements. Additionally, understanding the need for chance administration improves project straightforwardness and responsibility, as it stresses the significance of deliberate gamble appraisal and moderation through all project stages (Barghi, 2020). At last, connecting the goal of perceiving the purpose for risk management in oil and gas development projects highlights the basic job of risk management in protecting undertaking targets, improving asset designation, and upgrading in general project execution and resilience in dynamic and challenging environments characteristic for the oil and gas industry (Animah and Shafiee, 2020).

Objective 2: To assess the dangers that might influence the oil and gas construction project

Perceiving the purposes for risk the executives in oil and gas development projects straightforwardly line up with the target of evaluating potential perils that could affect project results (Cui *et al.* 2020). By understanding the rationale for executing risk in the executive's systems, project partners can proactively recognize, assess, and moderate different dangers that

present dangers to project achievement. These perils incorporate a wide range, going from ecological dangers, for example, cataclysmic events or administrative consistency issues, to functional dangers, including gear disappointments or inventory network disturbances. Also, international dangers, for example, political unsteadiness or clashes in districts where activities are found, can altogether impact project timetables and expenses (Deakin *et al.* 2021). By connecting the target of surveying project risks with the acknowledgment of chance administration's significance, partners can foster extensive gamble profiles that envelop both known and expected dangers. This proactive methodology engages project groups to execute designated risk alleviation measures customized to explicit undertaking difficulties, accordingly improving venture strength and limiting the probability of expensive mishaps or interruptions (Allioui and Mourdi, 2023). Eventually, understanding the purposes behind risk the executives highlight the basics of deliberately assessing and addressing project threats to protect objectives and targets and guarantee effective project delivery in the oil and gas construction area.

Objective 3: To decide the mitigation of dangers that hamper the oil and gas construction projects

Perceiving the reasons for the risk the executives in oil and gas construction projects is innately connected to the target of deciding on alleviation systems for dangers that impede project progress. Understanding the reason why risk the executives is pivotal empowers partners to settle on educated choices with respect to the designation regarding assets and the execution of fitting alleviation measures (Esmaeili and Kashani, 2022). By fathoming the basic reasoning for risk the board, project groups can really focus on and address the most basic perils that present critical dangers to project goals. This understanding enables partners to go with key decisions in regard to risk management with reaction methodologies, whether through risk aversion, risk move, risk decrease, or acknowledgment (AlNoaimi and Mazzuchi, 2021). Also, connecting the goal of settling on alleviation measures with the acknowledgment of chance administration's significance underlines the proactive idea of risk management in moderating possible risks before they grow into project disturbances (Kraidi *et al.* 2020). At last, this incorporated methodology works with the advancement of powerful gamble relief plans tailored to the particular difficulties faced by oil and gas construction projects, accordingly improving venture strength and guaranteeing fruitful undertaking conveyance notwithstanding possible risks.

Objective 4: To evaluate the viability of current risk management practices and propose upgrades for improved project strength.

Perceiving the purposes for risk the board in oil and gas construction projects fills in as an essential move toward accomplishing the target of assessing the viability of the current gamble the executives rehearse and recommending upgrades to sustain project strength (Wahlers, 2021). By understanding the reason why risk management is fundamental, partners can basically evaluate existing practices to distinguish strengths, weaknesses, and regions for development. This cognizance empowers a careful assessment of the reasonability of current risk management structures in moderating venture risks and difficulties (Faulks *et al.* 2021). Moreover, connecting the goal of surveying current gambles the executives rehearse with the acknowledgment of chance administration's importance highlights the significance of constantly refining systems to adjust to advancing venture scenes and arising chances. Through this incorporated methodology, partners can propose designated overhauls and improvements to existing risk management processes, utilizing bits of knowledge acquired from grasping the basic rationale for risk the board (Rezvani *et al.* 2023). At last, this works with the advancement of more powerful and responsive gamma- the executives' systems custom-fitted to the exceptional necessities of oil and gas construction projects, subsequently improving undertaking strength and resilience despite vulnerabilities.

5.2 Limitation

Recognizing the explanations for the risk of the executives in oil and gas construction projects shapes a foundation for accomplishing the target of assessing the viability of the current gamble the board rehearses and recommending improvements for project flexibility. In any case, it's fundamental to recognize the principal impediments of the postulation, eminently the example size and specialist predispositions. The sample size could confine the generalizability of discoveries, possibly restricting the more extensive relevance of proposed overhauls (Opatrny *et al.* 2023). Furthermore, researcher biases, like assumptions or inclinations, may unintentionally impact the assessment interaction, possibly slanting outcomes or proposals (Kozanitis and Nenciovici, 2023). Notwithstanding these impediments, an exhaustive comprehension of the hazard of the executives' rationale engages partners to basically evaluate current practices and propose designated enhancements, though with an acknowledgment of these innate requirements. Alleviating these limitations might include consolidating assorted

points of view, utilizing thorough exploration systems, and straightforwardly addressing possible inclinations to guarantee the power and validity of the assessment and redesign proposals.

5.3 Recommendation

In terms of that era, provided the limitations identified, proposals can be tailored to address these difficulties and upgrade the validity and pertinence of the postulation. To relieve the imperative of sample size, it's prudent to consider extending the sample pool by integrating a different scope of ventures or partners (Taylor *et al.* 2023). This more extensive degree can give more extravagant experiences into the viability of risk management rehearses across various settings, accordingly improving the generalizability of discoveries. Moreover, to address analyst inclinations, utilizing thorough examination approaches, such as two-fold visually impaired methods or friend surveys, can assist with limiting abstract impacts and reinforce the objectivity of the assessment interaction. Besides, straightforwardly reporting and recognizing possible inclinations, alongside effectively searching out counterarguments or contradicting perspectives, can encourage a more adjusted and exhaustive investigation (Hagger, 2022). By executing these suggestions, the proposition can beat its restrictions as well as deal with more powerful experiences and redesign recommendations for further developing risk management rehearsals in oil and gas construction projects.

5.4 Conclusion

It can be concluded that this study sets out on a vital excursion to reveal insight into the perplexing snare of risk variables encompassing oil and gas construction projects in non-industrial countries. Through fastidious investigation of these endeavours, a convincing requirement for fitted risk management philosophies to address the remarkable difficulties experienced in such settings becomes clear. This examination expects to give a nuanced comprehension of the perplexing risk scene innate in oil and gas construction. By explaining the hidden drivers of dangers and digging into partners' bits of knowledge and encounters, a pathway is cleared for more viable risk management strategies. Also, the ramifications of this study stretch out the past scholarly world to the business, offering the potential for positive change by connecting basic information gaps and proposing upgrades to current risk management rehearses. Eventually, by embracing proactive risk management methodologies,

partners can explore difficulties, immediately take advantage of chances, and accomplish reasonable undertaking results in the powerful domain of oil and gas construction.

Reference list

Ab Rahim, M.S., Reniers, G., Yang, M. and Bajpai, S., 2024. Risk assessment methods for process safety, process security and resilience in the chemical process industry: A thorough literature review. *Journal of Loss Prevention in the Process Industries*, p.105274.

Abba, Z.Y.I., Balta-Ozkan, N. and Hart, P., 2022. A holistic risk management framework for renewable energy investments. *Renewable and Sustainable Energy Reviews*, *160*, p.112305.

Abushrenta, M.M.A., 2022. *Challenges and opportunities of adopting IFRSs in Libya: the case of Libyan oil and gas industry*. Nottingham Trent University (United Kingdom).

Adieme, N.T. and Subramanian, R., 2020. Exploration of the socio-economic challenges, incremental technological/digital impact and critical incidents influencing the lottery gambling and gaming industry. *Editorial Policy*, *17*, p.37.

Aisyah, S. and Afrizal, A., 2022. Research Trends in Mobile Learning: A Systematic Literature Review From 2011-2021. *Journal of Educational Technology and Instruction*, *1*(1), pp.49-61.
Akter, S., Debnath, B. and Bari, A.M., 2022. A grey decision-making trial and evaluation laboratory approach for evaluating the disruption risk factors in the Emergency Life-Saving Drugs supply chains. *Healthcare Analytics*, *2*, p.100120.

Alawida, M., Omolara, A.E., Abiodun, O.I. and Al-Rajab, M., 2022. A deeper look into cybersecurity issues in the wake of Covid-19: A survey. *Journal of King Saud University-Computer and Information Sciences*, *34*(10), pp.8176-8206.

Albreiki, S., Simsekler, M.C.E., Qazi, A. and Bouabid, A., 2024. Assessment of the organizational factors in incident management practices in healthcare: A tree augmented Naive Bayes model. *Plos one*, *19*(3), p.e0299485.

Alem, D.D., 2020. An overview of data analysis and interpretations in research. *International Journal of Academic Research in Education and Review*, *8*(1), pp.1-27.

Ali, N.N., 2022. Refusing Internment, Reclaiming Vitality, and Moving Past the Bargain Of Recognition: The Case of a Muslim Creative Counterpublic.

Ali, R.F., Dominic, P.D.D. and Ali, K., 2020. Organizational governance, social bonds and information security policy compliance: A perspective towards oil and gas employees. *Sustainability*, *12*(20), p.8576.

Allioui, H. and Mourdi, Y., 2023. Exploring the full potentials of IoT for better financial growth and stability: A comprehensive survey. *Sensors*, *23*(19), p.8015.

AlNoaimi, F.A. and Mazzuchi, T.A., 2021. Risk management application in an oil and gas company for projects. *International Journal of Business Ethics and Governance*, pp.1-30.

AlNoaimi, F.A. and Mazzuchi, T.A., 2021. Risk management application in an oil and gas company for projects. *International Journal of Business Ethics and Governance*, pp.1-30.

Al-Zuheri, A., Kaitan, H.S., Al Saffar, I.Q. and Al-Zubaidi, S., 2023. An evaluation of lean intervention combined with ergonomics on enhancing productivity and workplace risk reduction: a literature review. *Industrial Engineering & Management Systems*, *22*(3), pp.259-272.

Andreoni, A. and Tregenna, F., 2020. Escaping the middle-income technology trap: A comparative analysis of industrial policies in China, Brazil and South Africa. *Structural Change and Economic Dynamics*, *54*, pp.324-340.

Animah, I. and Shafiee, M., 2020. Application of risk analysis in the liquefied natural gas (LNG) sector: An overview. *Journal of Loss Prevention in the Process Industries*, *63*, p.103980.

Arena, M., Azzone, G., Ratti, S., Urbano, V.M. and Vecchio, G., 2023. Sustainable development goals and corporate reporting: An empirical investigation of the oil and gas industry. *Sustainable Development*, *31*(1), pp.12-25.

Aryan, A., Bosché, F. and Tang, P., 2021. Planning for terrestrial laser scanning in construction: A review. *Automation in Construction*, *125*, p.103551.

Aseh, K., Kenny, K. and Pathmanathan, R., 2020. Identifying the Related Mode of Working and Performance of Support Teams in Cyberjaya Telecommunication Companies. *Archives of Business Review–Vol*, *8*(7).

Ashworth, S.J., 2021. *The evolution of facility management (FM) in the building information modelling (BIM) process: An opportunity to use critical success factors (CSF) for optimising built assets*. Liverpool John Moores University (United Kingdom).

Aston, D., Godwin, O. and Kayoe, S., 2023. EXAMINING THE WORK OF WEIGHTY EXPERT IN ACCOMPLISHING POSITIVE CHANGE IN ENLIGHTENING ESTABLISHMENTS.

Aston, D., Godwin, O. and Kayoe, S., 2023. INVESTIGATING THE JOB OF GROUNDBREAKING AUTHORITY IN ACHIEVING POSITIVE CHANGE IN INSTRUCTIVE FOUNDATIONS.

Aston, D., Godwin, O. and Kayoe, S., 2023. THE SIGNIFICANCE OF MORAL ADMINISTRATION IN KEEPING UP WITH HONESTY AND CONFIDENCE IN INSTRUCTIVE ORGANIZATIONS.

Ayoo, M.B.G., 2020. A comparative study of the implementation of oil spill contingency planning in promoting ocean sustainability and governance: a case study of Ghana and Canada.

Baldwin, R. and Freeman, R., 2022. Risks and global supply chains: What we know and what we need to know. *Annual Review of Economics*, *14*, pp.153-180.

Banerjee Chattapadhyay, D., Putta, J. and Rao P, R.M., 2021. Risk identification, assessments, and prediction for mega construction projects: A risk prediction paradigm based on cross analytical-machine learning model. *Buildings*, *11*(4), p.172.

Barghi, B., 2020. Qualitative and quantitative project risk assessment using a hybrid PMBOK model developed under uncertainty conditions. *Heliyon*, *6*(1).

Basak, M., 2020. *An empirical investigation of critical risk factors impacting schedule overrun in upstream gas projects in Australia* (Doctoral dissertation, Queensland University of Technology).

Basile, V., Capobianco, N. and Vona, R., 2021. The usefulness of sustainable business models: Analysis from oil and gas industry. *Corporate Social Responsibility and Environmental Management*, *28*(6), pp.1801-1821.

Battina, D.S., 2021. The Challenges and Mitigation Strategies of Using DevOps during Software Development. *International Journal of Creative Research Thoughts (IJCRT), ISSN*, pp.2320-2882.

Bringsjord, S., Giancola, M., Govindarajulu, N.S., Slowik, J., Oswald, J., Bello, P. and Clark, M., 2024. Argument-based inductive logics, with coverage of compromised perception. *Frontiers in Artificial Intelligence*, *6*, p.1144569.

Cantelmi, R., Di Gravio, G. and Patriarca, R., 2021. Reviewing qualitative research approaches in the context of critical infrastructure resilience. *Environment Systems and Decisions*, *41*(3), pp.341-376.

Carvajal, A.L.P. and Sanchez, R.D., 2024. Probing the Leadership Qualities of Local Chief Executives (LCEs) in Creating Competitive Creative Communities: Basis for Leadership Framework and Development Plan. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center(iJOINED ETCOR)*, *3*(1), pp.380-400.

Cui, Y., Quddus, N. and Mashuga, C.V., 2020. Bayesian network and game theory risk assessment model for third-party damage to oil and gas pipelines. *Process Safety and Environmental Protection*, *134*, pp.178-188.

David Jr, V.E., John, Y. and Hussain, S., 2020. Rethinking sustainability: a review of Liberia's municipal solid waste management systems, status, and challenges. *Journal of Material Cycles and Waste Management*, *22*(5), pp.1299-1317.

Davies, J.A., 2022. *Failing to Respond: Yemen's Humanitarian Crisis and the Role of the West* (Doctoral dissertation, York St John University).

Dawadi, S., Shrestha, S. and Giri, R.A., 2021. Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, *2*(2), pp.25-36.

Deakin, E., Chow, C.H., Son, D., Handy, S., Barbour, E., Lee, A., Rodriguez, E., Gahbauer, J., Coutin, T., Matute, J. and Rios Gutierrez, A., 2021. Evaluation of California State and Regional Transportation Plans and Their Prospects for Attaining State Goals.

D'silva, D.A., 2020. *Impact of global oil spills: wasting energy, jobs and the environment-a detailed study* (Doctoral dissertation, College of Management and Economics Studies, UPES, Dehradun).

Duggal, A.S., Malik, P.K., Gehlot, A., Singh, R., Gaba, G.S., Masud, M. and Al-Amri, J.F., 2022. A sequential roadmap to Industry 6.0: Exploring future manufacturing trends. *Iet Communications*, *16*(5), pp.521-531.

Dvorak, Z., Rehak, D., David, A. and Cekerevac, Z., 2020. Qualitative approach to environmental risk assessment in transport. *International Journal of Environmental Research and Public Health*, *17*(15), p.5494.

El-Hibri, H., 2021. *Visions of Beirut: The Urban Life of Media Infrastructure*. Duke University Press.

ERIC, A., 2023. *Local Content Policy in Oil for Development Partnership Programmes: Are Universities and Technical Institutions Actively Engaged as Enablers of Sustainable Development?* (Master's thesis, University of Agder).

Esmaeili, I. and Kashani, H., 2022. Managing cost risks in oil and gas construction projects: root causes of cost overruns. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, *8*(1), p.04021072.

Faulks, B., Song, Y., Waiganjo, M., Obrenovic, B. and Godinic, D., 2021. Impact of empowering leadership, innovative work, and organizational learning readiness on sustainable economic performance: an empirical study of companies in Russia during the COVID-19 pandemic. *Sustainability*, *13*(22), p.12465.

Flouros, F., 2022. The International Energy Landscape. In *Energy Security in the Eastern Mediterranean Region* (pp. 27-61). Cham: Springer International Publishing.

George, G., Haas, M.R., McGahan, A.M., Schillebeeckx, S.J. and Tracey, P., 2023. Purpose in the for-profit firm: A review and framework for management research. *Journal of management*, *49*(6), pp.1841-1869.

Giffard, E., 2023. *Barriers and drivers to implementing Nature-based Solutions and Managed Retreat on the Catalan coast. A case study on Cubelles' socio-environmental conflict* (Master's thesis, Universitat Politècnica de Catalunya).

Gupta, D. and Shah, M., 2022. A comprehensive study on artificial intelligence in oil and gas sector. *Environmental Science and Pollution Research*, *29*(34), pp.50984-50997.

Hagger, M., 2022. Meta-analysis. *International Review of Sport and Exercise Psychology*, *15*(1), pp.120-151.

Halog, A. and Anieke, S., 2021. A review of circular economy studies in developed countries and its potential adoption in developing countries. *Circular Economy and Sustainability*, *1*, pp.209-230.

He, Q., Meadows, M., Angwin, D., Gomes, E. and Child, J., 2020. Strategic alliance research in the era of digital transformation: Perspectives on future research. *British Journal of Management*, *31*(3), pp.589-617.

Heston, T.F., 2023. Foundations of Scholarly Writing. *Available at SSRN 4653380*.

Hundloe, T., 2021. *Environmental Offsets*. CSIRO PUBLISHING.

Iacobuţă, G.I., Höhne, N., van Soest, H.L. and Leemans, R., 2021. Transitioning to low-carbon economies under the 2030 agenda: Minimizing trade-offs and enhancing co-benefits of climate-change action for the sdgs. *Sustainability*, *13*(19), p.10774.

Isallah, H., 2023. The Impact of the Petroleum Industry Act on Corporate Social Responsibility and Taxation in Nigeria's Upstream Oil and Gas Sector: A Path towards Sustainable Development. *Sustainability*, *15*(21), p.15538.

Johnston, L.F., 2024. *Key Thinkers in Religion and Environment: Theoretical Foundations*. Taylor & Francis.

Jorquera Valero, J.M., Sánchez Sánchez, P.M., Lekidis, A., Fernandez Hidalgo, J., Gil Pérez, M., Siddiqui, M.S., Huertas Celdran, A. and Martínez Pérez, G., 2022. Design of a security and trust framework for 5G multi-domain scenarios. *Journal of Network and Systems Management*, *30*(1), p.7.

Kala, G., 2022. *Internet Memes as Instruments of Subversion in the Context of Islam and Muslims* (Doctoral dissertation, University of Westminster).

Karmaker, C.L., Al Aziz, R., Palit, T. and Bari, A.M., 2023. Analyzing supply chain risk factors in the small and medium enterprises under fuzzy environment: Implications towards sustainability for emerging economies. *Sustainable Technology and Entrepreneurship*, *2*(1), p.100032.

Kassem, M.A., Khoiry, M.A. and Hamzah, N., 2020. Using relative importance index method for developing risk map in oil and gas construction projects. *Jurnal Kejuruteraan*, *32*(3), pp.441-453.

Khalilzadeh, M., Ghasemi, P., Afrasiabi, A. and Shakeri, H., 2021. Hybrid fuzzy MCDM and FMEA integrating with linear programming approach for the health and safety executive risks: a case study. *Journal of modelling in management*, *16*(4), pp.1025-1053.

Kiani Mavi, R., Gengatharen, D., Kiani Mavi, N., Hughes, R., Campbell, A. and Yates, R., 2021. Sustainability in construction projects: A systematic literature review. *Sustainability*, *13*(4), p.1932.

Kozanitis, A. and Nenciovici, L., 2023. Effect of active learning versus traditional lecturing on the learning achievement of college students in humanities and social sciences: a meta-analysis. *Higher Education*, *86*(6), pp.1377-1394.

Kraidi, L., 2020. *Development of an Integrated Risk Management Framework for Oil and Gas Pipeline Projects*. Liverpool John Moores University (United Kingdom).

Kraidi, L., Shah, R., Matipa, W. and Borthwick, F., 2020. Using stakeholders' judgement and fuzzy logic theory to analyze the risk influencing factors in oil and gas pipeline projects: Case study in Iraq, Stage II. *International Journal of Critical Infrastructure Protection*, *28*, p.100337.

Kraidi, L., Shah, R., Matipa, W. and Borthwick, F., 2021. An investigation of mitigating the safety and security risks allied with oil and gas pipeline projects. *Journal of Pipeline Science and Engineering*, *1*(3), pp.349-359.

Kumar, D., 2020. Model of the airport logistics center functioning with supply chain management.

Kuruppu, S.C., Dissanayake, D. and de Villiers, C., 2022. How can NGO accountability practices be improved with technologies such as blockchain and triple-entry accounting?. *Accounting, Auditing & Accountability Journal*, *35*(7), pp.1714-1742.

Laurent, R., 2021. *Making oil critical: the criminalization of anti-pipeline protest in the United States* (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Lawal, A.H., 2022. *Environmental risk factor identification and assessment of health outcomes on selected subjects in and around the vicinity of petrol stations in Ilorin, Kwara state, Nigeria* (Doctoral dissertation, Cardiff Metropolitan University).

Lodh, S., Deshmukh, N. and Rohani, A., 2024. Stemming the tide: Does climate risk affect M&A performance?. *Business Strategy and the Environment*, *33*(2), pp.858-881.

Ma, H., Sun, Z. and Fang, C., 2020. Risk assessment of transnational oil investment in Central Asia using a fuzzy comprehensive evaluation method. *Regional Sustainability*, *1*(1), pp.11-19.

Mahajan, R., Lim, W.M., Sareen, M., Kumar, S. and Panwar, R., 2023. Stakeholder theory. *Journal of Business Research*, *166*, p.114104.

Mahajan, R., Lim, W.M., Sareen, M., Kumar, S. and Panwar, R., 2023. Stakeholder theory. *Journal of Business Research*, *166*, p.114104.

Mangqalaza, H., 2020. *The social innovation systems approach for sustainable development in an African urban informal settlement* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Mansilla, P. and Vassallo, J.M., 2020. Innovative infrastructure fund to ensure the financial sustainability of PPP projects: The case of Chile. *Sustainability*, *12*(23), p.9965.

Maoeng, M.P., 2020. *Analyzing issues affecting the implementation of sustainable development practices in the South African construction sector*. University of Johannesburg (South Africa).

Medeiros, M.A. and Guzmán, J.R., 2023. *Ethnographic Insights on Latin America and the Caribbean*. University of Toronto Press.

Melaku Belay, S., Tilahun, S., Yehualaw, M., Matos, J., Sousa, H. and Workneh, E.T., 2021. Analysis of cost overrun and schedule delays of infrastructure projects in low income economies: case studies in Ethiopia. *Advances in Civil Engineering, 2021*, pp.1-15.

Munge, S.P. and Nicko, B.A.C., 2023. Best Practices in the Upstream Operations of the Oil and Gas Industry: The Case of Environmental and Social Impact Assessment (ESIA) in Cameroon. *Commonwealth Law Review*, *9*, p.235.

Mushitsi, P. and San, N.M., 2024. THE SHIFT OF POWER: ANALYSING THE DECLINE OF USA'S INFLUENCE IN AFRICA IN FAVOUR OF CHINA. *American International Journal of Humanities, Arts and Social Sciences*, *6*(1), pp.1-12.

Mweshi, G.K. and Sakyi, K., 2020. Application of sampling methods for the research design. *Archives of Business Review–Vol*, *8*(11).

Nagireddy, S.R., 2023. *Artificial Intelligence and Its Impacts on Project Management* (Doctoral dissertation, University of the Cumberlands).

Nguyen, H.D. and Macchion, L., 2023. A comprehensive risk assessment model based on a fuzzy synthetic evaluation approach for green building projects: the case of Vietnam. *Engineering, Construction and Architectural Management*, *30*(7), pp.2837-2861.

Nhlapo, T.M.S., 2020. *Human resource development strategy for gender equality within the Department of Correctional Services*. University of Johannesburg (South Africa).

Nwankwo, N., Olaniyi, T.K. and Morgan, A., 2023. A just transition framework for oil rich Sub-Saharan Africa countries. *International Journal of Sustainable Energy Development*, *11*(1), pp.533-543.

Ocasio, W., Kraatz, M. and Chandler, D., 2023. Making sense of corporate purpose. *Strategy science*, *8*(2), pp.123-138.

Okafor, C.M., 2022. A conceptual framework for the analysis of community stakeholder satisfaction within the Nigeria construction project industry.

Olujobi, O.J., Olarinde, E.S., Yebisi, T.E. and Okorie, U.E., 2022. COVID-19 pandemic: The impacts of crude oil price shock on Nigeria's economy, legal and policy options. *Sustainability*, *14*(18), p.11166.

Omotunde, H. and Ahmed, M., 2023. A Comprehensive Review of Security Measures in Database Systems: Assessing Authentication, Access Control, and Beyond. *Mesopotamian Journal of CyberSecurity*, *2023*, pp.115-133.

Opatrny, M., Havránek, T., Havránková, Z. and Scasny, M., 2023. *Publication bias and model uncertainty in measuring the effect of class size on achievement* (No. 19/2023). IES Working Paper.

Ossai, C., 2020. Corporate social responsibility in Nigeria's petroleum industry 25 years after the Ogoni crisis: case study: Shell Nigeria.

Peel, K.L., 2020. A beginner's guide to applied educational research using thematic analysis. *Practical Assessment, Research, and Evaluation*, *25*(1), p.2.

Putri, R.S., 2023. *Renegotiating Access to Oil: Local Resistance and the Power Dynamics in Musi Banyuasin, South Sumatra Indonesia* (Master's thesis, NTNU).

Rezvani, S.M., Falcão, M.J., Komljenovic, D. and de Almeida, N.M., 2023. A systematic literature review on urban resilience enabled with asset and disaster risk management approaches and GIS-based decision support tools. *Applied Sciences*, *13*(4), p.2223.

Richey Jr, R.G., Chowdhury, S., Davis-Sramek, B., Giannakis, M. and Dwivedi, Y.K., 2023. Artificial intelligence in logistics and supply chain management: A primer and roadmap for research. *Journal of Business Logistics*, *44*(4), pp.532-549.

Richey Jr, R.G., Chowdhury, S., Davis-Sramek, B., Giannakis, M. and Dwivedi, Y.K., 2023. Artificial intelligence in logistics and supply chain management: A primer and roadmap for research. *Journal of Business Logistics*, *44*(4), pp.532-549.

Romasheva, N. and Dmitrieva, D., 2021. Energy resources exploitation in the russian arctic: Challenges and prospects for the sustainable development of the ecosystem. *Energies*, *14*(24), p.8300.

Rovida, C., Escher, S.E., Herzler, M., Bennekou, S.H., Kamp, H., Kroese, D.E., Maslankiewicz, L., Moné, M.J., Patlewicz, G., Sipes, N. and Van Aerts, L., 2021. NAM-supported read-across: From case studies to regulatory guidance in safety assessment. *ALTE X. Alternatives to Animal Experimentation*, *38*(1), pp.140-150.

Rozenthuler, S., 2020. *Powered by Purpose: Energise Your People to Do Great Work*. Pearson UK.

Sætra, H.S. and Danaher, J., 2022. To each technology its own ethics: The problem of ethical proliferation. *Philosophy & Technology*, *35*(4), p.93.

Sahoo, G., Wani, A., Rout, S., Sharma, A. and Prusty, A.K., 2021. Impact and contribution of forest in mitigating global climate change. *Des. Eng*, *4*, pp.667-682.

Sakapaji, S.C., García Molinos, J., Parilova, V., Gavrilyeva, T. and Yakovleva, N., 2024. Navigating Legal and Regulatory Frameworks to Achieve the Resilience and Sustainability of Indigenous Socioecological Systems. *Resources*, *13*(4), p.56.

Samour, A., Baskaya, M.M. and Tursoy, T., 2022. The impact of financial development and FDI on renewable energy in the UAE: a path towards sustainable development. *Sustainability*, *14*(3), p.1208.

Sarfo, S., 2021. *Effects of delay payments on road maintenance in Ghana: the case of Ghana highway authority, Ashanti region* (Doctoral dissertation).

Sergeevna, N.M., 2023. Market and Non-Market Strategies for Partner Risks Mitigation: The Case of Russian Oil and Gas Companies Expansion towards China.

Sharma, B. and Shrestha, A., 2023. Petroleum dependence in developing countries with an emphasis on Nepal and potential keys. *Energy Strategy Reviews*, *45*, p.101053.

Sherwood, Y.P., 2020. *" Water is Sacred! Womxn are Sacred!": Indigenous Womxn's Embodied Knowledge on the Frontlines*. University of California, Santa Cruz.

Strielkowski, W., Civín, L., Tarkhanova, E., Tvaronavičienė, M. and Petrenko, Y., 2021. Renewable energy in the sustainable development of electrical power sector: A review. *Energies*, *14*(24), p.8240.

Strielkowski, W., Civín, L., Tarkhanova, E., Tvaronavičienė, M. and Petrenko, Y., 2021. Renewable energy in the sustainable development of electrical power sector: A review. *Energies*, *14*(24), p.8240.

Sumitra, S., 2022. An Analysis of Cybersecurity for Business Enterprises.

Syaban, A.S.N. and Appiah-Opoku, S., 2024. Unveiling the Complexities of Land Use Transition in Indonesia's New Capital City IKN Nusantara: A Multidimensional Conflict Analysis. *Land*, *13*(5), p.606.

Tafazzoli, M., Mousavi, E. and Kermanshachi, S., 2020. Opportunities and challenges of green-lean: An integrated system for sustainable construction. *Sustainability*, *12*(11), p.4460.

Tauhid, S.A.B.M., 2021. Challenges in Managing Oil Palm Nursery and Effects of Fertilization on Oil Palm to Increase Production and Profitability.

Taylor, C.L., Said-Metwaly, S., Camarda, A. and Barbot, B., 2023. Gender differences and variability in creative ability: A systematic review and meta-analysis of the greater male variability hypothesis in creativity. *Journal of Personality and Social Psychology*.

The Kashagan oil field project (2024). *Kashagan Oil Field Development, North Caspian Sea, Kazakhstan*. [online] https://www.nsenergybusiness.com/projects/kashagan-oil-field-development/. Available at: https://www.nsenergybusiness.com/projects/kashagan-oil-field-development/ [Accessed 2024].

Thompson, E.L., 2022. *Smashing statues: the rise and fall of America's public monuments*. WW Norton & Company.

Touriki, F.E., Benkhati, I., Kamble, S.S. and Belhadi, A., 2021. An integrated smart, green, resilient, and lean manufacturing framework: A literature review and future research directions. *Journal of Cleaner Production*, *319*, p.128691.

Ukpong-Udo, E., 2022. *Exploration of safety climate in Nigeria: a study of organizations in Onne oil and gas free zone* (Doctoral dissertation, Middlesex University).

Umar, T., 2022. The impact of COVID-19 on the GCC construction industry. *International Journal of Service Science, Management, Engineering, and Technology (IJSSMET)*, *13*(2), pp.1-17.

Van de Graaf, T. and Sovacool, B.K., 2020. *Global energy politics*. John Wiley & Sons.

Verganti, R., Vendraminelli, L. and Iansiti, M., 2020. Innovation and design in the age of artificial intelligence. *Journal of product innovation management*, *37*(3), pp.212-227.

Vidalis, S., 2022. *UNIVERSITY OF HERTFORDSHIRE SCHOOL OF COMPUTER SCIENCE* (Doctoral dissertation, University of Hertfordshire).

Wahlers, K.H., 2021. *Persuasive Power: Rhetoric of Risk in Sustainability in the Nuclear Power Lobby* (Bachelor's thesis, Ohio University).

Walsh, K.B., Haggerty, J.H., Jacquet, J.B., Theodori, G.L. and Kroepsch, A., 2020. Uneven impacts and uncoordinated studies: A systematic review of research on unconventional oil and gas development in the United States. *Energy Research & Social Science*, *66*, p.101465.

Wang, J., Luo, L., Sa, R., Zhou, W. and Yu, Z., 2023. A Quantitative Analysis of Decision-Making Risk Factors for Mega Infrastructure Projects in China. *Sustainability*, *15*(21), p.15301.

Wang, Y., Wang, Y., Wu, X. and Li, J., 2020. Exploring the risk factors of infrastructure PPP projects for sustainable delivery: A social network perspective. *Sustainability*, *12*(10), p.4152.

Waris, M., Khan, A., Abideen, A.Z., Sorooshian, S. and Ullah, M., 2022. Stakeholder Management in Public Sector Infrastructure Projects. *Journal of Engineering, Project & Production Management*, *12*(3).

Weinlich, S., Baumann, M.O., Cassens-Sasse, M., Hadank-Rauch, R., Leibbrandt, F., Pardey, M., Simon, M. and Strey, A., 2022. *New rules, same practice? Analysing UN Development System reform effects at the country level* (No. 3/2022). Discussion Paper.

Wood, D.J., Mitchell, R.K., Agle, B.R. and Bryan, L.M., 2021. Stakeholder identification and salience after 20 years: Progress, problems, and prospects. *Business & Society*, *60*(1), pp.196-245.

Yang, C., Zhu, C. and Albitar, K., 2024. ESG ratings and green innovation: AU-shaped journey towards sustainable development. *Business Strategy and the Environment*.

Yang, C., Zhu, C. and Albitar, K., 2024. ESG ratings and green innovation: AU-shaped journey towards sustainable development. *Business Strategy and the Environment*.

Yaseen, A., 2021. REDUCING INDUSTRIAL RISK WITH AI AND AUTOMATION. *International Journal of Intelligent Automation and Computing*, *4*(1), pp.60-80.

Yaseen, A., 2023. AI-DRIVEN THREAT DETECTION AND RESPONSE: A PARADIGM SHIFT IN CYBERSECURITY. *International Journal of Information and Cybersecurity*, *7*(12), pp.25-43.

Yaseen, A., 2023. AI-DRIVEN THREAT DETECTION AND RESPONSE: A PARADIGM SHIFT IN CYBERSECURITY. *International Journal of Information and Cybersecurity*, *7*(12), pp.25-43.

Yin, M., 2021. Using Chemometrics and Geochemistry to Assess Heavy Oil Fluid Heterogeneity in Southeastern Mexico Heavy Oil Fields.

Appendices

Appendix 1: Questionnaire

What is your age

a) 18-25

b) 26-38

c) 39-48

d) Above 48

What is your gender

a) Male

b) Female

How would you rate the importance of governmental regulations in mitigating risks in oil and gas construction projects?

a) Very important

b) Important

c) Somewhat important

d) Not important

In your opinion, what is the most significant risk factor in oil and gas construction projects in developing countries?

a) Political instability

b) Economic volatility

c) Environmental regulations

d) Technological challenges

How do you perceive the impact of local workforce skill levels on risk management in oil and gas construction projects?

a) Highly influential

b) Moderately influential

c) Slightly influential

d) Not influential

To what extent do you believe financial constraints contribute to risk in oil and gas construction projects?

a) Significantly

b) Moderately

c) Slightly

d) Negligibly

How crucial do you consider technological innovation in reducing risks associated with oil and gas construction projects?

a) Extremely crucial

b) Very crucial

c) Moderately crucial

d) Not crucial

How do you rate the role of project management practices in minimizing risks in oil and gas construction projects?

a) Highly effective

b) Somewhat effective

c) Minimally effective

d) Ineffective

In your experience, how influential is stakeholder collaboration in managing risks in oil and gas construction projects?

a) Very influential

b) Moderately influential

c) Slightly influential

d) Not influential

How do you assess the impact of natural disasters and climate change on risk factors in oil and gas construction projects?

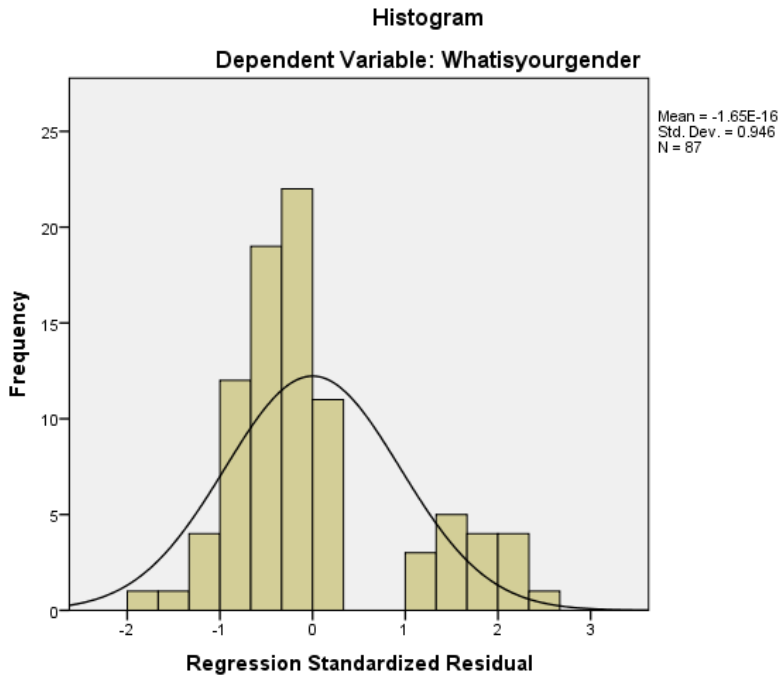
a) Extremely impactful

b) Moderately impactful

c) Slightly impactful

d) Negligible impact

Appendix 2: Histogram chart on regression analysis



(Sources: Self-made)