



Study of Risk Management in the Project of the Oil Industry in Yemen

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Abstract: This paper aims to identify the significant risks affecting Yemen's oil sector projects and devise practical solutions to mitigate important risks. It demonstrates mismanagement of the oil sector, Corruption and bribery, wars and ongoing conflicts, exchange rate volatility, a lack of modern technology, and economic and financial crises which have produced economic calamity in the country. A survey has been conducted through the one hundred one executives and staff of the oil sector in Yemen, which is concluded a statistical review of the top five risks. According to the results of this report, the risk of war conflicts and Corruption, bribery is nearly 78% to 81%, the rate of exchange and financial crises nearly to 76% to 78%, and lack of modern technology is 75%. The major contribution of the manuscript, conducting informal interviews with different levels of the Yemen Petro government, the mitigation measures were drafted. However, some project management officials have described different mitigation strategies for these significant risks mentioned above. Companies can operate safely, teach project managers, and implement contractor evaluation using multiple technical standards to strengthen the powers of project staff. An administrative and supervisory change is recommended. The conclusion of this study can be mitigated to managed highly impacted risks to resolve conflicts and rebuild what has been destroyed, hiring qualified consultants to assess the oil industry's work in light of the mortgage situation, and a training project. Strengthening law enforcement requires the right people, staff, a focus on teamwork, and improving the climate for non-complicit bidding. For effective risk mitigation, empower people.

Keywords: Oil Industry Projects in Yemen, Risk Factors, Risk Management, Yemen Petro Project, Enterprise Strategies

1. Introduction

Yemen is a country in the Middle East that lies between Oman and Saudi Arabia on the Arabian Peninsula's southern tip. It is situated at the beginning of the Bab al-Mandeb Strait, which links the Arabian Sea to the Indian Ocean (via the Gulf of Aden) and is one of the world's busiest and crucial shipping lanes. Yemen is a developing country. The oil industry was the primary driver of the country's 32 per cent growth in 2010. However, the oil industry in Yemen has recently encountered many issues, one of which is the absence of research and practical risk management framework, which has had a detrimental influence on oil engineering sector projects in Yemen [1].

Since the unification of Yemen in 1990, the Yemeni economy has remained one of the poorest economies in the world, and it is still among the developing countries in the world. As engineering projects in Yemen are almost halted, there are now very few projects in Yemen for high-income earners. Instability is one of the reasons for the complete halt of engineering projects. The economy and the application of modern management are among the most critical issues and the main requirements for different industries such as the oil industry...etc.

Yemen lacks oil exploration, modern capabilities, and investors. Corruption and nepotism seem to be controlling the state. As Yemen's economy depends mainly on oil production and export, it is among the oil-exporting countries. Oil production and exportation are among the country's

economic growth engines and represent the largest percentage. The oil companies in Yemen suffer from great risks. There is a complete cessation of production due to the conflict, poor security, weak support for Yemeni companies, and the lack of exploration production.

The ongoing wars and conflicts in Yemen impede economic growth and the rapid deterioration of the economy. Yemen possesses great wealth, including oil and gas, arable lands and working for human hands. Yemen possesses extensive agricultural lands, but only three per cent of which are consumed and concentrated in northern Yemen. Oil

exploration in Yemen is fragile and almost non-existent throughout the country. The companies responsible for exploration and production in Yemen are almost halted due to the lack of security in Yemen.

There is a lack of specific rules and standards in industry and construction, making Yemen one of the weakest industrial countries in manufacturing. According to the information collected from questionnaires about the proportion of industries in Yemen, the graph shows the percentage of industries in Yemen.

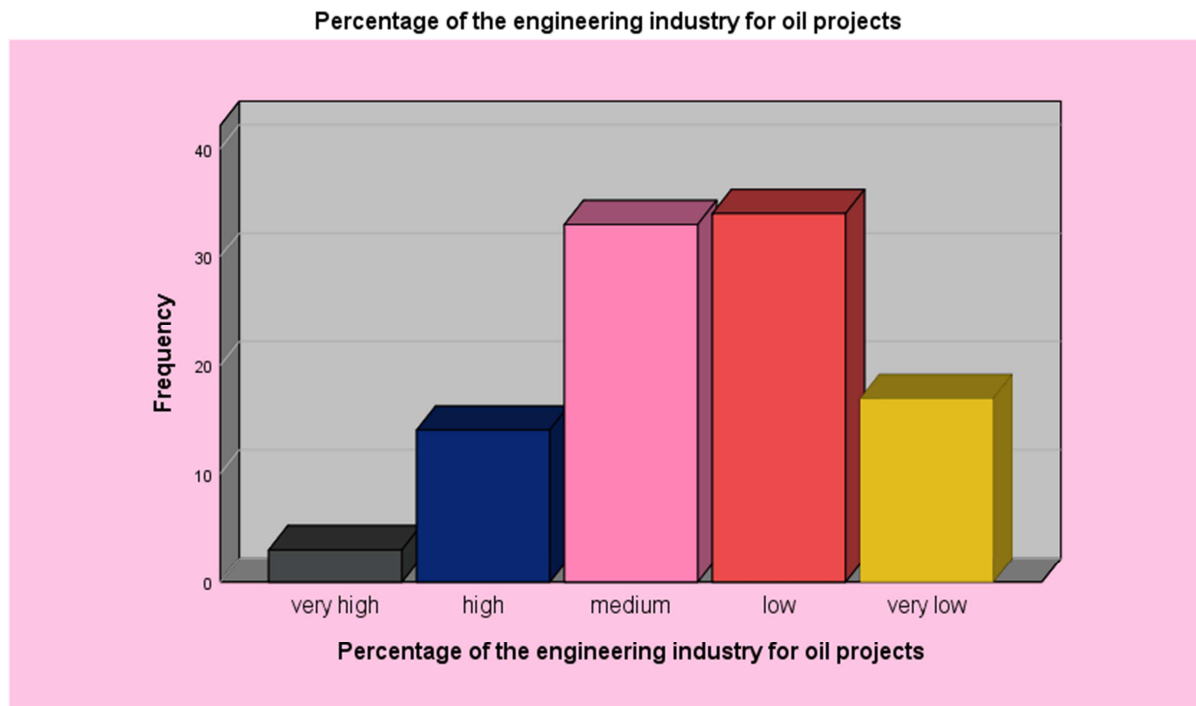


Figure 1. Percentage of the engineering industry for oil projects.

The oil industry in Yemen contributed from 70 to 75 per cent of the GDP and about 90 per cent of exports. Today, the industry is still standing due to the political conflict and instability the country is going through. Since oil industry ventures are often capital intensive, their effective execution is critical. Projects in the oil industry, on the other hand, are vulnerable to significant capital investments, multiple stakeholder participation, diverse technology use, and high environmental and social effects. [2]. Management quality in Yemen is still below the global level as the country is out of the scheme economy. In view of the above, oil production projects in Yemen pose several risks that could jeopardize project execution. So, there is an immediate need to handle oil ventures with effective risk management. Therefore, the analysis aims to establish the key risks that affect oil And Yemen's oil industry ventures and propose suitable methods for effectively eliminating substantial risks. Internal risk factors (financial, design, contractual, construction, personal, involved parties, and operational risks) and external risk factors (financial, design, contractual, construction, personal, involved parties, and operational hazards) affect

projects (economic, social, political, legal, public, logistical, and environmental risks). All risks could negatively impact the project's cost, schedule, or quality [3]. As a result, risk management should be properly understood and treated as an integral part of project management. The project management engineering industry in Yemen is exposed to both internal and external threats. All risks can be related to adversely affecting project expense, schedule, or quality.

Risks in the industry frequently result in time and expense overruns. Project managers were unable to manage the risks. Hence their budgets were delayed or exceeded. Because of the economy's developing nature, these challenges seem to be surfacing more frequently these days. Projects are now subjected to much larger dangers. Ambiguity resulting from factors such as planning, architecture, and existential uncertainty from multiple interest groups (project owner, consultants, builders, vendors, resource availability (materials, services, funds, atmosphere, social environment, interests, and legal rules, both economic and political [4].

Joint partnerships take out Yemen's oil projects. Partnerships include Hunt Oil, Circle Oil, Norway's DNO,

Kuwait Foreign Petroleum Exploration Company (Kufpec), etc. These partners provide the necessary funds and technology for ventures in the oil industry that still lack Yemeni partners. Involvement Projects suffer from threats from international partners, such as discrepancies in procedures, Policy and political threats, financial and legal risks between local and international partners, and diplomatic hazards. The inflation rate in Yemen is very high. At the same time, the national currency is relatively weak.

2. Methodology

The questionnaires used to gather data were designed for the study's objectives, literature, and theories in line with the study. Two types of questions, open and closed, were presented to some of the managers of engineering projects in Yemen and some employees of the oil companies and a university teacher, and some students. These questions were multiple options to be answered. However, interviews were conducted for further studies.

The People involved in the oil industry were the target population for this research. Meanwhile, oil projects poured in Yemen (Yemen - Petro). Since then, Yemen Petro has been the largest oil company. It serves the Yemeni oil industry. Participants in this questionnaire included several layers of managers, employees, teachers, and graduate students, and others related to them.

Questionnaires and in-depth interviews collected primary data, and secondary data were also collected from various sources. To test variations in the opinions of variables, three classes of variables were classified as Interviewees. Respondents' experience categories, job titles, and business types were all taken into consideration:

Descriptive statistics and hypothesis testing were used to interpret the data. The Statistical Kit for Social Science, version 0.26, analyzed the data (SPSS).

1. Variable Community study (work) experience:

- a) respondents ≥ 10 years of studying (working) experience;
- b) respondents < 10 years of studying (working) Experience.

2. The changing study role group (work):

- a) executive administrators in management and project personnel.
- b) Employee: members of teachers and students associated with project management.

The χ^2 the test was selected to test theories regarding discrepancies in respondent differences. The null hypothesis in this study is that the same category variables do not change among themselves. For the χ^2 variable in SPSS, cross-tabulation is employed. For the statistical analysis, a 5% statistical significance level was chosen.

Since the study discussed the opinion of people, that 5 per cent of the significance level is appropriate.

Study to prevent the effect of methodological biases from different sources, and the results were checked and verified as follows:

1) Researcher impact Checking:

- a) Biases arising from the effects of researchers on the site;
- b) Biases that stem from the impact on the researchers of the sites. Dealing with these biases necessitates a thorough examination of the study and input verification.

2) Checking outliers' means-it was checked by peers to prevent Biases for self-selecting.

3. Data Analysis

Questionnaires were handed out to oil workers and scientists with specialized Experience in Yemen Petro oil projects in medium to downstream activities. A total of 120 questionnaires were submitted, and out of that, 101 (84.2%) of the questionnaires were returned. Table 1 shows the responses to the questionnaire, and Table 2 details the respondents' age and the highest level of education.

A deliberate attempt was made to include more people with experience in the study because they have more comprehensive knowledge about various projects.

The respondents for this research are between the ages of 25 and 50. The 25-30 age group (63.4 per cent), the 31-40 group is second in size, 34.7 per cent. 37 (36.7%) of the respondents have more than ten years of work experience. 63.4 per cent of the remaining respondents have fewer than 10 years of experience. All the participants hold at least a Bachelor's degree. Figure 2 illustrates the various aspects of the engineering field.

Significant risks in oil construction projects are described.

A checklist of known or more dangerous species has been constructed from available literature and submitted to respondents to identify substantial risks in mid to downstream oil sector projects. They were asked to rate two characteristics of each risk: frequency of occurrence (fr) and degree of influence (Im). Danger (R) is a function of these two characteristics [5].

$$R = (fr, Im)$$

Raftery (1994) [6] and many other scholars agreed on a model to quantify this function. It states that the risk is equal to the product of the frequency of occurrence and the magnitude of the impact.:

$$R = fr \times Im$$

Where R , Fr , and Im are all numerical values. The respondents used a five-level judgment scale to rate the frequency of occurrence: high, medium, low, and very low. The risk's degree of impact was also measured using the same scale.

Table 1. Distribution of contributed and returned questionnaires.

Position	Distribution	Return	Percent
student	57	57	56.4
manager	5	5	61.4
Employee	37	37	98.0
other	2	2	100.0
Total	101	101	

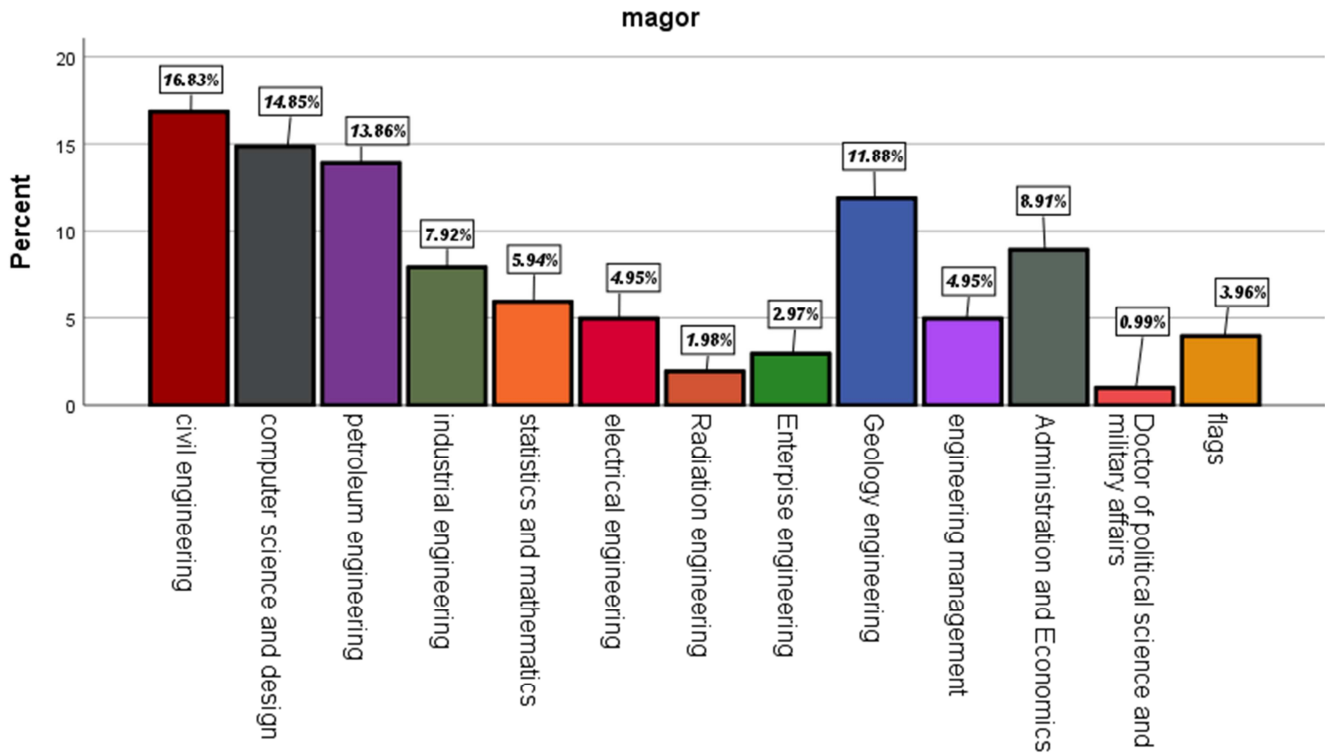


Figure 2. The significant fields of study of respondents are distributed as follows.

Table 2. Distribution of respondents' age and educational level.

	Frequency	Per cent	Valid Percent	Cumulative Percent
Age				
25-30	64	63.4	63.4	63.4
30-40	35	34.7	34.7	98.0
40-50	2	2.0	2.0	100.0
Total	101	100.0	100.0	
Educational level				
bachelor	48	47.5	47.5	47.5
master	35	34.7	34.7	82.2
PhD	18	17.8	17.8	100.0
Total	101	100.0	100.0	

Before the model can be employed, the opinion choice scale must be converted into numerical scales. The "very high" should be 0.9, and the "high," "medium," "low," and "very low," according to PMBOK (2000) [7], should be 0.7, 0.5, 0.3, and 0.1, respectively. A risk ranking is the result of a respondent's risk assessment, and it is calculated using the following general model.:

$$R_j^i = fr_j^i \times Im_j^i$$

Where:

fr_j^i frequency of occurrence assessed by respondent j for risk i ; Im_j^i Degree of impact if risk i assessed by respondent j .

It is simple to get an average score for each risk by averaging scores from all 101 responses; this average score is

known as the risk-index score and is used to rank risks. The formula for calculating the risk-index score is as follows:

$$RI^i = \frac{\sum_{i=1}^{101} R_j^i}{101}$$

Where RI =risk has a risk-index score I , R_j^i =respondent i has a risk score for risk j .

Table 3 shows the risk rating based on the risk-index ratings. The ten-risk categories are used to make the risk rating easier to understand.

Table 3 provides a list of ranked risks, including 33 risks ranked in ascending order based on their total effects on Yemen ventures. The top-five risks are the main focus of this paper, as described in the research objective. They will be extensively investigated to determine their causes and characteristics to propose appropriate mitigation steps.

4. Analysis of the Top-five Risks

The Corruption and bribery risk ranked first with the highest risk index ($RI=0.8168$), and it had the highest average frequency of occurrence (0.16067). Table 4 illustrates this. This indicates that oil projects in Yemen are exposed to this risk. This risk must be reduced by management levels, management systems, the inefficiency of personnel, and tampering with the capabilities of the state. State employees are the main reasons for these risks.

Table 3. Oil risk classification.

Rank	Risk factors	RI	Std deviation
1	Wars and ongoing conflicts	0.7871	0.17301
2	The democratic government system and long-term approval procedures	0.5099	0.23388
3	The inefficiency of teamwork on projects	0.5871	0.21618
4	Poor design in projects	0.6030	0.19517
5	The inefficiency of the managers so that the bidding is incomplete	0.6168	0.15561
6	The feasibility study of the project is not appropriate	0.5911	0.17782
7	Improper project planning and budget	0.6129	0.18421
8	Insufficient coordination between contractors	0.6248	0.19360
9	Improper choice of the project site	0.5475	0.21382
10	Continuous policy changes	0.7297	0.18844
11	Corruption and bribery	0.8168	0.16067
12	The business and monetary crisis	0.7871	0.19061
13	Interference by the government in projects	0.6248	0.23808
14	Increase the tax rate	0.6545	0.20175
15	Project organization is insufficient	0.6168	0.16314
16	Late approval from the owner	0.5911	0.15627
17	Delay in signing the contract	0.6069	0.17565
18	Conditions in the contract are ambiguous	0.5535	0.21705
19	Lack of knowledge and Experience in industrial work	0.6386	0.20541
20	Exchange rate change	0.7614	0.18054
21	The inefficiency of the legal process	0.6941	0.17990
22	Insufficient laws on the project	0.6208	0.18779
23	Increase the cost of equipment	0.6762	0.17038
24	In JV, there are different norms and codes.	0.6406	0.17786
25	Change in-laws and regulations	0.5911	0.17782
26	Inflation rate fluctuation	0.6584	0.17278
27	Poor quality of the resources purchased	0.6743	0.18257
28	Bad relationship and conflict with partners	0.6584	0.19660
29	Contract type is not appropriate	0.5535	0.19368
30	Lack of modern technologies	0.7594	0.17098
31	Financial problems with consultants	0.6287	0.18673
32	Exercising respect among foreigners and local contractors	0.5614	0.22404
33	Foreign intervention	0.6723	0.25617

The subsequent four risks are Wars and ongoing conflicts (RI=0.7871), the economic and financial crisis (RI=0.7871), the Lack of modern technologies (RI=0.7594), Exchange rate change (RI=0.7614). Management-related threats are present. High ranking demonstrates the owners' inability to schedule, coordinate, inspire, steer, and manage their businesses—supervised projects to determine why many detailed

interviews have been conducted. During the interview, it was discovered that the human resources were incompetent and had no formal project management. The root causes were structural. As a result, to manage risks, one must concentrate on the owners' and managers' managerial knowledge, skills, and abilities, improving human resources.

Table 4. Statistics of top-five risks.

No	Risk	Mean of occurrence frequency	Mean of impact degree	Risk-index score (RI)
1	Corruption and bribery	0.713	0.642	0.8168
2	Wars and ongoing conflicts	0.604	0.544	0.7871
3	The economic and financial crisis	0.624	0.642	0.7871
4	Exchange rate change	0.535	0.472	0.7614
5	Lack of modern technologies	0.505	0.451	0.7594

The Wars and conflicts in Yemen ranked second (RI=0.7871). Whereas the ongoing wars in Yemen raging since 2014 have caused a decline in development, and an escalation of a conflict that severely affects oil projects in Yemen and in general, the risk of ongoing wars and conflicts is the fourth-highest average impact score (0.544) over the rated risk score. It makes sense to de-escalate the conflict so that the projects are well managed. Fieldwork often has a substantial impact on overall projects. Wars and conflicts cause a significant change in the implementation method, resource allocation, etc., which leads to time and cost overrun and project incompleteness. The project

may change from time to time due to the risk of wars after the final approval of the implementation of the project. Mainly in the industrial phase, indicating that the wars and changing conflicts in the oil projects in Yemen have a little average impact in different circumstances.

The Yemeni economy is considered one of the poorest and least developed countries in the world. The economic and financial crisis represents a significant obstacle to the risks of managing oil projects in Yemen. Thus, it occupies third place in terms of classification compared to (wars and conflicts) with a high-risk factor (RI=0.7871), and it has the same war

risk index. Moreover, conflicts, but the economic crisis is the biggest obstacle. Wars and conflicts in Yemen have weakened public infrastructure. The oil sector (the primary source of exports) was severely affected.

The prolonged conflicts in Yemen have witnessed a catastrophic economic crisis interwoven with violence. Industrial and farming industries have been destroyed throughout the country. In the private market, a lot of Yemenis quit their jobs. Inconsistent compensation is provided to those inside the public sector. Monetary value is still falling, and many Yemenis are unable to afford critical food [8]. Yemeni authorities are highly dependent on functional markets for gas, gasoline, currency, and other business institutions and medical, water, and energy in the areas of de facto authorities. Interestingly, these markets have turned from a simple natural result of communal coping to a developing economic "sector," making it possible for some Yemenis to get away from it and prevent further degradation of their riches. At the same time, Yemenis believe that peace in Dfa's (De facto) areas is unable, given the region's economic interests.

Continuous changes in the exchange rate ranked fourth with a high-risk index score (RI=0.7614), the average frequency of occurrence (0.535), and average weakness to a score (0.472) which means there is a strong impact of the change in exchange on the management of oil projects in Yemen. Some of the questions in the questionnaire focused on the change in the exchange rate and its effect on engineering projects in Yemen. The change in the exchange rate has a significant impact on contractors in the country, which leads to weak raw materials used in projects and thus has a major impact on the industry of oil projects in Yemen. The change of exchange is constantly changing on project management, the most important of which are: Focusing attention on the circulation of the currency from time to time, reducing bids for the implementation of the project, and others.

Although Yemen is going through a severe economic crisis,

it is still a producer of oil and a competitor in the global market. Despite the lack of modern technologies that help production, Yemen has been going through wars and conflicts for about 7 years. Therefore, according to the classification ranked fifth, the lack of modern technologies ranked fifth with a high degree of impact (0.7594). One of the critical risks that must be addressed in the oil industry in Yemen has to do with the inadequate of new technologies.

Customers are always concerned with owners. In Yemen, projects have often been delayed, costs are exceeded, productivity is cut, and contractors are of poor quality. There are inadequate management abilities, suitable building methods, and inadequate resources because of insufficient financial capacity, necessary expertise, and coaching personnel. Workforce, technology, equipment. In addition, projects in the petroleum business are generally large and complex. Construction processes involve high, modern, and complex technologies. This has enticed the world's major oil companies in Yemen. Knowledge differences among the national population international contractors cause conflicts that hamper the success of the project.

5. Hypothesis Testing

Hypothesis χ^2 tests were performed to check for differences in judgments and responder risk. The tests focus on job and work experience. The null hypotheses are:

H01. There is no difference in the judgment about risks among respondents having different job positions.

H02. There is no difference in the judgment about risks among respondents having different working experiences.

The hypothesis test has a significance of 5 per cent. χ^2 It was carried out with the SPSS software, and the findings are shown in Table 5. The judgment of the respondents in all the case groups showed no significant difference. Only three significant differences were at risk (Corruption and bribery, economic and financial crisis, constant exchange rate change).

Table 5. χ^2 test results for hypothesis testing.

No	Risk factor	RI according to job position	Significance at 5percentage
1	Corruption and bribery	0.166	Significant
2	The economic and financial crisis	0.005	Significant
3	Inflation rate fluctuation	0.011	Significant

All classes showed statistically significant differences (3 of 33 risks). These disparities can be created by the various qualities of the two companies. For example, the same building standard must be applied by both international and local partners in joint ventures, such that a partner may not use the usual standard but must adapt to a new standard. Such adjustment requirements can generate practical problems. In contrast, state-owned businesses still prefer to use the old building standard they know about. It makes the main difference between national enterprises and joint ventures from different norms and rules of risk.

Another illustration of this is the relationship between joint ventures and local authorities. Good ties with the government

are essential to the success of the initiative for joint ventures. They emphasize this problem, while state-owned firms emphasize it less because they are part of the government. In conducting initiatives, the government can therefore prioritize them.

6. Strategies for Managing Major Risks

This assessment examines the dangers of industrial oil projects in Yemen as well as their overall effects. Appropriate strategies for better project implementation should be examined and supplied for each risk. This study solely focuses on the first five students Risks because of the

seriousness of their project impact. To reduce the top five hazards, specific techniques are effectively advised. Strategies effectively design and implement an action plan to address risks (Cleland and Ireland, 2002). Each considerable risk will be extensively assessed to identify the reasons and features of the Yemen project environment to design appropriate and effective strategies.

The following describes responses to the oil and industry risks under consideration.

Corruption and bribery "Corruption and bribery" are common in projects in Yemen due to the incompetence of the employees of the organizational government and the lack of sense of responsibility. There is no monitoring to reduce this in light of the deteriorating conditions in the country and the lack of living.

Yemen is one of the few countries in which Corruption and bribery are widespread. This is due to inadequate education and the low income of the individual because Yemeni society is with a limited income.

The procedures for mitigating these risks are complex because they are external to the organization. The executives to whom the questionnaires were sent suggested strategies to request administrative and executive reform from the government. Good Relationship with the Environment Authority and NGOs; curbing Corruption and bribery; understand local laws and regulations.

As the oil business contributes significantly to the country's economy, the government will be sensitive to collective demand from organizations in the oil sector to reform the various ministries. The request must be presented to the center for reform at all levels of government services. Because of the current scenario, Yemen is undergoing administrative and economic transformations, and reform is expected. Although wars and conflicts are continuing, reforms should be more profound and broader. If done, it encourages international investors to invest in Yemen to build a positive connection with them.

Paying employees' dues and increasing one's income reduces the risk of bribery and Corruption in projects. The government should take care of this well and understand society's requirements to manage the projects well. The government must show its strength, operate all projects, attract investors, and provide them with a suitable environment for them to work and employ human resources to reduce risks in the project industry. All the key factors that should be put forth by the government are advantages such as creating jobs, improving living standards, tax incomes, etc. Organizations must meet to maintain good government relations. It is clear that when the relationship is built well, the local people and the government are at peace, and when this happens, the corruption risk on the project will be significantly reduced.

Strong relations with environmental agencies and NGOs are also vital in having good relations with the government. This is because there are often confrontations between project owners and such entities, affecting projects badly. To comply with legal requirements and continue to be

productive and competitive throughout the project's life, environmental assessment and social consequences must be carried out in infrastructure projects.

6.1. The Economic and Financial Crisis

The continuous and increasing deficit in the general budget: This deficit is the result of limited government revenues in exchange for a continuous increase in its expenditures, in addition to other circumstantial factors such as the decline in revenues from exporting crude oil due to the decrease in its global average prices to about \$ 40 a barrel after it was at \$ 60 a barrel per year.

Indeed, there are aspirations to increase Yemen's daily production from 60,000 barrels to 80,000 barrels in the next few years. Still, this increase will not lead to a significant increase in revenues in light of the continued low oil prices and the high costs of extracting it locally due to widespread financial and administrative Corruption in this sector.

Yemen also suffers from direct and indirect economic consequences due to the continuing outbreak of the new Corona epidemic and the deterioration of the health situation in the country in general. The preventive measures taken to confront the epidemic have caused significant disruption of economic activity and a significant reduction in the labour market, in addition to the fact that fighting the epidemic necessitated extensive resources that have been deducted at the expense of other critical relief and development projects. However, the results at this level are still not promising. According to the estimation of many humanitarian organizations working in Yemen, the epidemic has not yet reached its peak spread.

The ongoing conflict between the political parties has left dangerous repercussions on the general economic situation.

Yemen ranked 187 in the world at the global level Business Performance Environment Report 2020, lagging at the global and regional level, in most indicators, especially in the Cross Border Trade Index (188 out of 190 Country), access to electricity index (187), and index Building permits (186), Yemen did not achieve results. They are ranked only in two indicators: property registration (86) and tax payment index (89) because Yemen has obtained relatively high scores.

6.2. Wars, Conflicts, and Constant Change in Currency Exchange

Yemeni engages in financial operations through the "how to do business" with a non-internationally recognized body of authorities outside of traditional regulatory bodies. It distinguishes between "illicit" and "black market" economic activity. Because in regular times or under peacetime governance, most transactions occur in a regulated atmosphere, but civilian conflict moved them. In Yemen, the economy serves Yemeni families that supply essential items and revenue. Such currency exchange is preferable to any formal controlled market. Alternative regulated markets, on the other hand, may be less efficient as they also offer rent-seekers. The internationally recognized central state can most

crucially strengthen political and economic linkages between Yemeni and unrecognized authorities. Such activities also have a bearing on the potential of peaceful conflict resolution.

The ongoing wars and conflicts in Yemen have led to the deterioration of the infrastructure and wholly halted projects. The wars have led to the inflation of the currency and the withdrawal of foreign currency from the market, leading to a change in the exchange rate, instability, and lack of demand. The war in Yemen is in its sixth year, and there are no signs of retreat, which makes it difficult for the researcher to anticipate political reforms soon. At the mortgage, the Yemeni citizen is looking to provide the necessities for living and move away from projects that build the state's economy due to income and the continuous change in the currency.

6.3. Lack of Modern Technologies

The results indicate that the most important modern technologies which Yemen lacks are the obstacles to implementing the quality of electronic services as a developing country which is as a result of lack of qualifications, having the digital device, weakness of the technological infrastructure, lack of funding, lack of regulatory frameworks, development strategies and legal framework, the instability of government and confidence in electronic services.

Corporate and government entities now face many changes that can disrupt public and private sector operations. There is a significant change in ICT development, particularly global networks [9], in public and private sector operations. The rise of state-of-the-art communication and information technologies has led to substantial public life transformations regarding people's expectations and need for convenience services and institutional and organizational levels [10]. IT has fostered the creation of public institutions in line with globalization in developing quality service management through technical solutions.

In general and professional services, in particular, are processes or journeys that different people experience differently [11]. Individuals construct a mental picture of service, including accountancy, legal, consultancy in engineering, medicine, psychology, programming, sports, and social activities. Its knowledge-intensive nature and dependency on specialist talents [12] is the distinctive aspect of this service. The strategic role of most businesses is to control resources to gain a competitive advantage [13]. However, knowledge is mainly managed by employees [14] in professional services organizations. Electronic services include four areas: domain management (emotional call,

support for customers, alternative channels, empowerment, management of processes, political role, complaints, openness, and benefits of services online), b) information domains (task information and quality of information), c) service domains (reliability, compliance with deadline, availability of service, online integration), and

Despite the many hurdles and hurdles that e-government in developing countries encounters, there has been some success, including several essential qualities such as user orientation, trust, efficiency, openness, and sustainability in both the public and commercial sectors. Work has made the convenience and speed of service drive advancement using information technology in all levels of government. The concept is known as e-government. This concept necessitates the adoption of new work practices in the service system by government authorities [15]. The state ensures that work is completed quickly and efficiently and that official regulations are followed. This notion reflects the notion of justice in dealing with all groups of people by providing equal services in a short amount of time, effort, money, and time to reach a high performance and citizen satisfaction rate.

The partnership mentality has been a substantial drive-in business for the past decade. A worldwide effort to enhance the construction industry [16]: a partnership is described as a long-term commitment between two or more people or organizations to achieve specified business objectives by maximizing the effectiveness of each participant's resources. Regardless of the structure at the border, this necessitates a shift in traditional cultural ties. The goal is to understand each other's expectations and ideals, and the connection is built on trust and loyalty. Improved productivity, cost-effectiveness, and increased chances for innovation, and continual improvement of high-quality products and services are all expected benefits [17]. Trust, long-term commitment, and shared vision are the three essential pillars of any successful partnership connection.

Empowerment is the ability to make decisions in one's area of operations without requiring approval from others [18]. The project manager's faith in management is bolstered by increased project empowerment. It aids in making timely judgments. This does not, however, diminish accountability. Increased delegation of power improves the project manager's decision-making authority, promoting project success through innovation in the project management process.

Table 6 summarizes the strategies for addressing the significant project risks in the oil industry in Yemen.

Table 6. Strategies for mitigating the top-five risks.

No	Major risks	Strategies
1	Corruption and bribery	Censorship and assign competencies to manage the project The imposition of sanctions by the government to reduce Corruption Reaching the state's stability and governance without bribery
2	Wars and ongoing conflicts	Provide a stable environment for long term plans Stopping wars, uniting, and controlling all government projects Finding tax facilities for investors so that they can establish projects Reconstructing and rehabilitating the oil installations and infrastructure destroyed
3	The economic and financial crisis	Support the economy Exploiting financial resources and utilizing them in implementing development projects

No	Major risks	Strategies
4	Exchange rate change	Not to print a new currency Insurance of the local currency in order to be recognized globally
5	Lack of modern technologies	Government officials and policymakers in developing countries are urged to improve the infrastructure of their countries. e-government and strive to correct the imbalances that cause delays in the implementation of e-government regularly

7. Summary and Conclusions

Risk management has been regarded as a central and inseparable project management activity in developed countries for decades. However, in developing countries, such as Yemen, this practice is strange and restricted in its application in project environments. As a result, this study is both timely and crucial.

His findings are even more critical given that the oil industry is the primary industry contributor to the general economy of Yemen but is highly vulnerable to it. Unique

characteristics and the external environment is rapidly changing.

This research focused on two main objectives - discovering the main risks influencing oil industry projects and devising appropriate strategies to reduce significant risks effectively. Using a survey questionnaire, this study systematically examines risks affecting projects of oil industries.

The risk index score was developed, with support from in-depth interviews, which helped identify the principal risks and mitigation measures. The top five of the main risks shown in the graph.

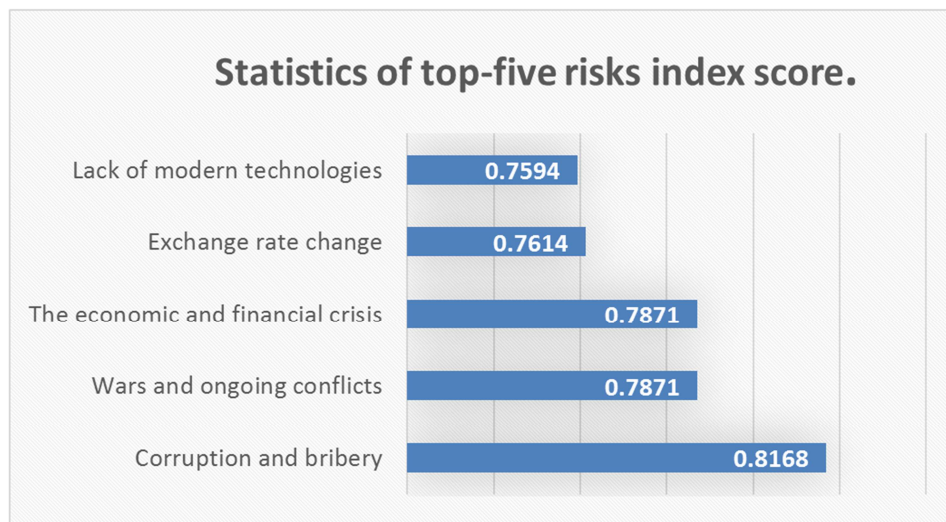


Figure 3. Statistics of top five risks.

It is necessary to properly assess the primary risks affecting projects for them to be successful. Their causes and characteristics must be thoroughly investigated to assist the owner in developing the most effective and effective mitigation methods. The top-five significant dangers have been put through this approach in this study. This study makes a case for administrative and supervisory changes. Maintaining a positive relationship with the government and the environment is a priority for the government. Power, NGOs, anti-corruption and anti-bribery legislation, and municipal laws Regulations, collaboration with key project stakeholders, involvement in resolving wars and conflicts, restoring what has been destroyed by war, hiring qualified consultants to assess the oil industry's work in light of the mortgage situation, and the training project The proper people, the right staff, a focus on teamwork, and improving the climate for non-complicit bidding are all critical factors strengthening law enforcement, as well as the dedication of all parties involved, As well as empowerment for successful risk mitigation.

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