

**T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



MANAGED OIL, GAS, AND PORT PROJECTS IN IRAQ

MASTER'S THESIS

Mohammed Dawood Atiyah MANSOORI

Business Administration Department

Business Administration Master in English Program

SEPTEMBER 2021

**T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



MANAGED OIL, GAS, AND PORT PROJECTS IN IRAQ

MASTER'S THESIS

**Mohammed Dawood Atiyah MANSOORI
(191285007)**

Business Administration Department

Business Administration Master in English Program

Thesis Advisor: Prof. Dr. Enver Alper GUVEL

SEPTEMBER 2021



T.C.
İSTANBUL GEDİK ÜNİVERSİTESİ
LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ MÜDÜRLÜĞÜ

Yüksek Lisans Tez Onay Belgesi

Enstitümüz, İşletme Yönetimi İngilizce Tezli Yüksek Lisans Programı (191285007) numaralı öğrencisi Mohammed Dawood Atiyah MANSOORİ'nin "Managed Oil, Gas, and Port Projects in Iraq" adlı tez çalışması Enstitümüz Yönetim Kurulunun 28/09/2021 tarihinde oluşturduğu jüri tarafından **oy birliği** ile Yüksek Lisans tezi olarak **kabul** edilmiştir.

Öğretim Üyesi Adı Soyadı

Tez Savunma Tarihi:28/09/2021

1) These Danışmanı: Prof. Enver Alper GUVEL

2) Jüri Üyesi: Dr. Öğr. Üyesi Ahmet ERKASAP

3) Jüri Üyesi: Doç. Dr. Al ÖZCAN

DECLARATION

I, Mohammed Dawood Atiyah MANSOORI, do hereby declare that this thesis titled as “Managed Oil, Gas, and Port Projects in Iraq” is original work done by me for the award of the masters degree in the faculty of Business Administration. I also declare that this thesis or any part of it has not been submitted and presented for any other degree or research paper in any other university or institution. (28/09/2021)

Mohammed Dawood Atiyah MANSOORI



DEDICATION

To my dear country, Iraq is the honor, pride, and victory of my professors

Our gratitude, respect and lack, to whom God has entrusted with prestige and reverence, to those who taught me to give without waiting for the one whose name I bear with pride,

I hope that God extends his life to see the fruit that has come after a long wait his words will remain stars to be guided by today and tomorrow, and appreciation of my dear father

To my angel in life to the meaning of love, the meaning of tenderness and dedication to the smile of life and the mystery of existence to was.

The most precious of my beloved mother

To those of the greater and greater, to a burning candle that illuminates the darkness of my life to their presence I gain and boundless love, to those with whom I knew the meaning of life, my brothers to our secret together as we pave the way together towards success and creativity We banded together hand in hand as we reaped the fruits of our effort.

FOREWORD

This study dealt with a vital topic, which is the management of oil and gas projects and ports in Iraq, as it dealt with the importance and role of Iraqi oil and gas projects because of their income, revenues, and international relations in international agreements. As well as the role of Iraqi ports because of their important role in domestic and international prices. On the other hand, the researcher addressed historical statistics and analyzes Iraqi oil in terms of the content and title of this study.

The geographical location of Basra governorate, its views of the Arabian Gulf through Shatt al Arab, and its navigational capacity have given an opportunity to the various river and sea transport modes to cross the Iraqi territorial waters in the governorate, and these means have varied between various local transport and international maritime transport means represented by ships entering the waters of Basra governorate.

A large part of it arrived at the stronghold of the heart of Basra city.

Basra is the only outlet linking Iraq to the outside world through its southern part with a tape.

It is located in a region of geographical difference narrow coast of 65 km, economic and political, within the Mediterranean-Red limited region and the Gulf, on the one hand, and this has affected its activity and importance because it falls within the competition and conflict zone for historical decades that have influenced its geographical history.

This geographical location has given much flexibility in being close to several neighboring countries, Kuwait, Iran, Saudi Arabia, which have long-standing economic ties and social ties to Iraq, as it is located near the rich oil-producing areas of the south and located in the south-eastern part of the country.

In particular, in the east and south of Basra governorate, it has given it a marginal position at the regional and local levels, but this extremist position has given Basra governorate a special advantage over other governorates since it has contained all the country's ports and made it an important land and sea corridor linking the outside world with all Iraq's governorates.

This is through other means and modes of transport, on the one hand, and on the other, it has placed it strategically in the country because it controls all seaports.

This geographical location of Iraqi ports has also shown its clear features and has given great importance to attracting a number of key industries in order to benefit from the marine location in the import and export operations necessary to sustain work in these industries.

The second-largest company in the province after the South Oil Company, as the gateway to the outside world and its role in supporting the economy, is to facilitate trade and provide resources Financial and effective contribution to the State by providing employment opportunities.



PREFACE

First of all, I thank God Almighty

I thank everyone who helped and guided me through assembling and completing this work on time. I also thank my father and mother for the material and moral support they gave me throughout my education, as well as my brothers.

I also express my gratitude to the supervisor of Prof. Dr. Enver Alper Alper GUVEL who devoted a lot of his time to making sure this work meets the standards and I thank the professor who stood by and helped us prof Dr. Ahmet ERKASAP and the professors in the discussion committee.

I also extend my thanks to everyone who supported me in our second country, the great Turkey, and to all the professors, the university and its presidency, and finally, I would like to thank my family members, friends and everyone who supported me.

My classmates for their encouragement and cooperation in my academic and physical life

God bless you all

September 2021

Mohammed Dawood Atiyah MANSOORI

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	vii
TABLE OF CONTENTS	viii
ABBREVIATION	x
LIST OF TABLES	xi
LIST OF FIGURES	xiii
ABSTRACT	xiv
ÖZET	xv
1. INTRODUCTION	1
1.1. Study Methodology	2
1.1.1. Study problem.....	2
1.1.2. Study's questions	3
1.1.3. The objectives of the study	3
1.1.4. The importance of study	4
1.1.5 The study hypotheses.....	4
1.1.6. Limitations of the study	5
1.2 Previous study	5
1.2.1 Study of (Hinte et al., 2007) in Canada	5
1.2.2. Study of (Layth Kraidi Et al., 2012): analysing the critical risk factors associated with oil and gas pipeline projects in Iraq	6
1.2.3. Study of (Rahim, et al. , 2017).....	6
2. THE THEORETICAL SIDE OF THE STUDY	8
2.1. The history of oil and gas in Iraq	8
2.2 Production	9
2.2.1 North gas company	10
2.3 An Overview of the Future of Gas in Iraq 2020.....	13
2.4 The Concept of Good Governance in the Management of Oil Wealth	15
2.5 Oil wealth	17
Management	17
2.5.1. The pros and indicators of good governance	19
2.6 Reality of Oil Policies in Iraq.....	21
2.7 General Transportation Company, Iraq Ports.....	23
2.7.1 Umm Qasr Port	23
2.7.2. The port of Khor al-Zubair	24
2.7.3. Abu Floss Port	25
2.8 Oil risks and their Management in Iraq.....	26
2.8.1 The obstacles facing the current ports	27
2.8.2 Options to develop Iraqi ports reality	28
3. OIL AND NATURAL GAS, CHALLENGES AND OUTLOOK IN IRAQ...	31
3.1 Solving the Problem of Corruption in the Oil Sector.....	34
3.2. Future Export Capacity of Natural Gas in Iraq	37
3.2.1 The economic and geological indicators of natural gas in Iraq.....	38

3.3 Production	40
3.3.1 Natural gas processing companies in Iraq	41
3.3.2 Natural gas pipelines in Iraq	45
3.3.3 The challenges facing the export of Iraqi gas	50
3.4 National direct investment method.....	51
3.4.1 Investment method according to production sharing contracts	53
3.5 Principles of production sharing contracts	54
3.5.1 Investment method according to technical service contracts.....	55
3.5.2 Conditions set by Iraq in the investment service contracts model.....	56
4. APPLIED FRAMEWORK	60
4.1. Introduction	60
4.2. The study sample.....	60
4.3 Study tool	60
4.4 The Validity and Reliability of the Study Tool	61
4.4.1. Reliability (Cronbach's Alpha coefficients).....	61
4.4.2. Correlation	62
5. THE RESULTS OF THE STUDY ANALYZE IT AND DISCUSS IT	66
5.1 Analysis of the questionnaire:	66
5.1.1 First: Data analysis	66
5.1.2 Second: Frequency ratios of the responses of the research sample	71
5.1.3 Third dimension: The future of the management of Iraqi ports	75
5.1.4 Fourth: Mean and standard deviation	77
5.1.5 Fifth: Factor analysis	81
5.1.6 Sixth: Regression analysis	84
5.1.7 Seventh: Answering the study hypotheses	84
6. CONCLUSIONS OF THE PRACTICAL STUDY	87
6.2 Recommendations of the Study.....	89
REFERENCES	91
RESUME.....	96

ABBREVIATION

GDP	: The Gross Domestic Product
GNP	: The Gross National Product
WTO	: World Trade Organization
MOT	: Ministry of Transport
NC	: National Committee
MFTR	: Memorandum of Foreign Trade Regime
EU	: European Union
IT	: Information Technology
NICs	: Newly Industrialized Countries
ISI	: Import Substitution Industrialization
EOI	: Export Oriented industrialization
RBI	: Resource Based Industrialization
ITI	: Industrialization Trough Innovation
R&D	: Research and Development
GIP	: Green Industrial Policies
NISs	: Newly Industrialized Economies
EPZs	: Export Processing Zones
SEZs	: Special Economic Zones
GATT	: General Agreement on Tariffs and Trade
IMF	: International Monetary Found
FTAs	: Free Trade Agreements
SMEs	: Small and Medium enterprises
VERs	: Voluntary Export Restraints
NTMs	: Non-Tariff measures
NAFTA	: North American Free Trade Agreement
UNCTAD	: United Nation Conference on Trade and Development

LIST OF TABLES

	<u>Page</u>
Table 2.1: Distribution of the number of incoming units to the port during the year 2005/2006.....	22
Table 2.2: The volume of goods and capacity available at these ports and additional cargo (Super power).....	29
Table 4.1: Five-point Likert scale	61
Table 4.2: Cronbach's Alpha coefficients for the first dimension.....	61
Table 4.3: Cronbach's Alpha coefficients for the first dimension.....	61
Table 4.4: Cronbach's Alpha coefficients for the first dimension.....	62
Table 4.5: Cronbach's Alpha coefficients for the first dimension.....	62
Table 4.6: Correlation coefficients between the score for each phrase and the total score of the first dimension	62
Table 4.7: Correlation coefficients between the score for each phrase and the total score of the second dimension	63
Table 4.8: Correlation coefficients between the score for each phrase and the total score of the third dimension.....	64
Table 4.9: Correlation coefficients between the score for each phrase and the total score of the fourth dimension.....	64
Table 5.1: Distribution of the study sample according to gender	66
Table 5.2: Distribution of the study sample according to age.....	67
Table 5.3: Distribution of the study sample according to scientific degree	68
Table 5.4: Distribution of the study sample according workplace.....	69
Table 5.5: Distribution of the study sample according to current functionality	69
Table 5.6: Distribution of the study sample according to years of experience	70
Table 5.7: Items of the first dimension	71
Table 5.8: Items of the second dimension.....	73
Table 5.9: Items of the third dimension	74
Table 5.10: Items of the fourth dimension	75
Table 5.11: Mean and standard deviation for the elements of the first dimension ...	77
Table 5.12: Mean and standard deviation for the elements of the second dimension	78
Table 5.13: Mean and standard deviation for the elements of the third dimension ..	79
Table 5.14: Mean and standard deviation for the elements of the fourth dimension	80
Table 5.15: KMO and Bartlett's Test for the first dimension.....	81
Table 5.16: Factor analysis of the first dimension	81
Table 5.17: KMO and Bartlett's Test for the second dimension	82
Table 5.18: Factor analysis of the second dimension.....	82
Table 5.19: KMO and Bartlett's Test for the third dimension.....	82
Table 5.20: Factor analysis of the hird dimension	83
Table 5.21: KMO and Bartlett's Test for the fourth dimension	83
Table 5.22: Factor analysis of the fourth dimension.....	84
Table 5.23: Regression between IT capacity and customer's satisfaction	84

Table 5.24: The correlation between the level of managing gas and oil and the level of Iraqi oil and gas sector 85

Table 5.25: The correlation between the level of managing gas and oil ports and the level of the resulting impact on the government in Iraq 85

Table 5.26: The correlation between the level of managing gas and oil ports and the level of future of the management of Iraqi ports..... 86



LIST OF FIGURES

	<u>Page</u>
Figure 5.1: Ratios of the research sample by gender	66
Figure 5.2: Ratios of the study sample by age	67
Figure 5.3: Ratios of research sample by scientific degree.....	68
Figure 5.4: Ratios of study sample by workplace	69
Figure 5.5: Proportional distribution of study sample according to current functionality	70
Figure 5.6: Proportional distribution of the study sample by years	71

MANAGED OIL, GAS, AND PORT PROJECTS IN IRAQ

ABSTRACT

This study explores the methods that help in the management of oil and gas ports in Iraq, where the Iraqi ports witnessed the deterioration of the depths in the shipping lanes and berth interfaces, in addition to the misuse of oil and gas to meet the needs of the state.

This study is of great importance because it talks about the management of oil and gas ports, which are a major source of the economy of the State of Iraq.

The study consists of two sections.

The first deals with the reality of the current Iraqi ports.

To achieve this, the Al-Maqal port, Umm Qasr port, Khor Al-Zubayr port, and Abu Flus port were selected.

The second topic deals with the establishment of the large Al-Faw project and the reasons for the establishment of this port and the advantages resulting from it.

In order to reach the results of the study, the researcher used the descriptive-analytical method in this study, and the electronic questionnaire tool was used and a sample of 120 individuals was selected.

The questionnaire targeted workers in institutions, ports, and facilities related to oil and gas in Iraq. The questionnaire consists of four main dimensions: the reality of gas and oil management, the future of Iraqi oil and gas management, the reality of Iraqi ports management, and the future of Iraqi ports management.

Based on the foundations of the research results, the researcher was able to clarify a set of ideas.

The study suggested using technical foundations to deliver oil and gas services, as well as paying attention to competitiveness and providing training programmers for staff in institutions and facilities specializing in the management of oil and gas ports in Iraq.

Keywords: *Managed, Oil, Gas, Port, Source, State, Economy*

IRAK'TA YÖNETİLEN PETROL, GAZ VE LİMAN PROJELERİ

OZET

Bu çalışma, Irak limanlarının denizcilik yollarında ve rıhtım ara yüzeylerindeki derinliklerin bozulmasına tanık olduğu Irak'taki petrol ve gaz limanlarının yönetimine yardımcı olan yöntemlerin yanı sıra petrol ve gazın ihtiyaçlarını karşılamak için kötüye kullanılmasına yardımcı olan yöntemleri araştırıyor. Çalışma, Irak Devleti ekonomisinin önemli bir kaynağı olan petrol ve gaz limanlarının yönetiminden bahsetmesi açısından büyük önem taşımaktadır. Çalışma iki bölümden oluşmaktadır. Birincisi, mevcut Irak limanlarının gerçekliği ile ilgilidir. Bunu başarmak için Al-Maqal limanı, Umm Qasr limanı, Khor Al-Zubayr limanı ve Abu Flus limanı seçildi. İkinci konu, büyük Al-Faw projesinin kuruluşu ve bu limanın kuruluş gerekçeleri ve bunun getirdiği avantajlarla ilgilidir. Araştırmanın sonuçlarına ulaşmak için araştırmacı bu çalışmada betimsel-analitik yöntemi kullanmış, elektronik anket aracı kullanılmış ve 120 kişilik bir örneklem seçilmiştir. Anket, Irak'taki petrol ve gazla ilgili kurumlarda, limanlarda ve tesislerde çalışan işçilerin hedef aldı. Anket dört ana boyuttan oluşmaktadır: gaz ve petrol yönetiminin gerçekliği, Irak petrol ve gaz yönetiminin geleceği, Irak liman yönetiminin gerçekliği ve Irak liman yönetiminin geleceği. Araştırmacı, petrol ve gaz hizmetleri sağlamak için teknolojik temellerin kullanılmasını ve rekabet edebilirliğe dikkat edilmesini tavsiye ettiği araştırmanın sonunda gösterilen sonuçların temellerine dayanan bir dizi öneriyi netleştirmeyi başardı ve işçiler için eğitim programları sağladı. Irak'taki petrol ve gaz limanlarının yönetiminde uzmanlaşmış kurum ve tesisler.

Anahtar Kelimeler: *Yönetilen, Petrol, Gaz, Liman, Kaynak, Devlet, Ekonomi*

1. INTRODUCTION

The maritime transport sector is one of the country's main economic foundations, having played a key role in the transfer of cultures, as ships have evolved into gigantic tankers with more diversified and modern capabilities, as well as container ships with large tonnage.

Being able to handle and deal with these enormous ships, as well as having centres for electronic interchange of information, has become a requirement for advanced seaports, high administrative efficiency, and internal transit networks that reach the centers of production and consumption (Fursenko, 1990).

The oil and gas ports in Iraq contribute to the activation and revitalization of regional and global maritime traffic, as well as having a substantial impact on Iraq's economic recovery. The most essential study outlines the fundamental foundations for the sector's development, which are based on what is acceptable for global trade's external changes and the patterns of its numerous modes of transportation.

The study also examines the current state of affairs in Iraqi ports, including berths and their capacities, the quantity of goods, the number of imported containers, the ships arriving at the port and their revenues, and the most pressing problems and challenges confronting Iraqi ports, as well as solutions to those problems and ways to overcome them in order to achieve an orderly commercial maritime transport (Ibid).

The Iraqi port sector faces numerous challenges that obstruct its varied activities, since the current ports' capacities do not meet the advancements in the marine transport fleets and modes of transport represented by container ships, which necessitate modern port services, such as excellent worker productivity, exemplary management, advanced electronic systems, and modern, high-performance specialty cranes as well as other issues.

Because Iraqi ports are in disrepair, good port management is also a source of contemporary ship attraction.

The research covers the need for some port development procedures, competent

management, and a workforce with varied specialties to fulfil the demands of current ships and the future need (Ottaway, 2005).

Because no national regulations prohibit the carrier from doing so, the foreigner is engaging with Iraqi ports, which are looking for an efficient and well-managed port that can assist them in achieving their economic objectives.

As a result, improving the port's efficiency and management to meet the demands of modern maritime transport will surely help to boost economic activity efficiency by increasing revenues in line with port transportation advances.

As a result of advancements in marine transportation, the volume of commercial traffic and revenue has increased (Ferruh, 2003).

The study dealt with the issue of good management of gas and oil ports in the ports of Iraq, and since the general framework is the general plan for research, it was followed by the theoretical framework.

Each chapter dealt with a range of different investigations, oil interests and some historical analyzes and statistics regarding the future expectations of oil in Iraq in 2020, as well as the plan exposed to risks and the future, the vision of Iraqi oil, and the fourth and fifth chapters dealt with the procedures of the study, which is a methodology and tools.

We mean the corrective treatment of statistics, and here we mean the statistical treatments, the researcher also extracted was results, recommendations and conclusion.

1.1. Study Methodology

1.1.1. Study problem

Deterioration of the depths in the shipping lanes and quay fronts in Iraqi ports, in addition to that Iraq was not able to manage the oil and gas ports well and due to the expected large increases in trade exchange and the arrival of goods to the Iraqi ports, encouraged the Iraqi government to think of a solution to this problem, and as a result Management, investment and trade must be well executed.

This paper discusses these problems and the correct ways to help solve these problems, as the researcher deals with developing strategies that help to properly

manage oil and gas stations and help improve their exploitation, and the Iraqi people faced many problems that made them stand in confusion and do not know the appropriate solution.

In this research, the researcher will work on developing clear strategies and foundations that help in solving these problems.

1.1.2. Study's questions

The researcher has drawn research questions composed of the main question and sub-questions, as follows:

a. The main question:

1. What is the role of good management in activating and revitalizing the movement of oil and gas ports in Iraq?

b. The sub-questions:

1. How well do Iraqi ports operate for oil and gas projects?

2. What is the quality of port management for Iraqi oil and gas projects?

3. What is the economic return from having good management of oil and gas ports in Iraq?

4. Does the presence of good management of oil and gas ports solve the problems and future challenges of maritime transport?

5. What are the future policies for project management at the ports of the State of Iraq?

1.1.3. The objectives of the study

This study addresses a number of basic objectives as follows:

1. Recognizing the role of good management in the development of oil and gas ports in Iraq and their ability to face the tremendous progress in exchange and maritime transport.

2. Addressing the reality of the Iraqi ports in Basra Governorate and the future prospects for the development of the transport sector represented in the largest port of Al-Faw project, which is one of the giant strategic projects in Iraq.

3. Identify the effects of oil and gas projects on the economy in Iraq.
4. Identifying the most important ports and their role in the trade exchange and the extent of their absorption.

1.1.4. The importance of study

Because of the importance of this sector and being one of the important sources of income in Iraq, and in order to develop the oil and gas ports sector to meet the current and future needs, there must be a good administration to identify the development of this sector and face current and future challenges.

Hence, the study plays an important role, because oil is a strategic weapon and the weapon of the age, just Oil is an important primary source of energy, which is why it has been called "black gold" for its high economic importance.

The rate of oil and gas consumption is also increasing with human progress and dependence on this raw material as a main source of energy.

The price of oil and gas plays an important role in global economic performance.

a. The theoretical side: The importance lies in the theoretical aspect, as this study can be used in economic references, whether for the Iraqi government or for other researchers in this field.

b. The practical side: The second important aspect lies in the practical aspect of reducing Iraqi oil prices and working to restore recovery for the good and bad of the country.

1.1.5 The study hypotheses

The dimensions of the study are two basic and variable dimensions, port management, senior policy and work, which represent the independent variable and the dependent change are those effects resulting from the management of international relations, port policy, and Iraqi oil and gas.

1. The first main hypothesis:

There are no statistically significant differences between managing Iraqi projects and their implications for the oil and gas sector in Iraq.

Four sub-hypotheses are branched out from this main hypothesis:

- The first hypothesis:

There are no statistically significant differences between the Iraqi gas sector and the resulting impact on managing the oil sector in Iraq.

- The second hypothesis:

There are no statistically significant differences between the oil and gas sector as a whole and the resulting impact on the government in Iraq.

- The third hypothesis:

There are no statistically significant differences between political indicators and the governmental role in managing oil and gas projects, and international relations in Iraq.

1.1.6. Limitations of the study

Objective limit: Port management at petroleum projects in Iraq.

Human limit: Personnel in the Iraqi Oil and Economy Ministries.

Time limit: First quarter 2020-2021m

The Iraqi oil and economy ministries are the Arab Republic of Iraq – Baghdad.

1.2 Previous study

1.2.1 Study of (Hinte et al., 2007) in Canada

(Hinte et al., 2007) examined potential pipeline impacts and developed a technique for evaluating the current regime for analyzing and managing project impacts using best practises criteria, only three of the 14 best practice criteria were met, according to the study's findings. The most serious flaws were: a lack of explicit decision-making criteria and techniques; and a lack of clear decision-making criteria and processes.

The lack of decision-making processes that include a legal requirement to compensate people who have been negatively impacted by the project and to ensure that the benefits are dispersed evenly; There is no provision for a comparative evaluation of competing projects, and the study also identified the required improvements in environmental assessment and planning processes.

1.2.2. Study of (Layth Kraidi Et al., 2012): analysing the critical risk factors associated with oil and gas pipeline projects in Iraq

This study focuses on identifying and analyzing the risks posed by the interruption of the three parties and acts of terrorism in order to build a complete risk management model (RMM) for pipelines and gas in Iraq.

To collect data, the study used a semi-structured questionnaire with 30 risk factors selected following a thorough literature analysis, which was delivered to OGP stakeholders using an online survey platform.

Using the risk index approach, the risk factors were categorized according to the degree of probability and risk, and the study used SPSS to analyze and assess the data.

A conceptual framework for RMM is presented based on the findings of a literature review and a survey, according to the data, the most significant safety concerns are terrorism, sabotage, and theft, while official corruption and lawlessness have the greatest impact on organizational risks.

1.2.3. Study of (Rahim, et al. , 2017)

The purpose of this research is to investigate project management in the oil and gas sector by defining the industry's implementation phase and analyzing the oil and gas project management method during the development phase using a model platform.

According to the findings, a project management methodology is established during the implementation of an oil and gas project with the goal of improving the decision-making process and overall project implementation.

A systematic project management usually consists of five main stages: evaluation; selection and definition, both of which are related to the planning stage; and the implementation stage. In addition to the implementation, processes and the monitoring phase in the first year.

The project management approach is also seen in common oil and gas project development stages, such as I conceptual design; Front End Engineering Design (FEED); Purchase of long-lead equipment; and detailed design.

Construction/manufacturing; Pre-operating on land; Transportation/installation

(applicable to offshore platforms); and Plug and Play prior to delivery to the end-user.

The study provided a clear picture and understanding of how to manage an oil and gas project through appropriate project management techniques.



2. THE THEORETICAL SIDE OF THE STUDY

2.1. The history of oil and gas in Iraq

Natural gas contributes about a quarter of the world's energy consumption, it is the cleanest and lowest emission fuel, it is an important source of thermal, mechanical and electrical energy in the transport, industrial, electrical and housing sectors, moreover, many countries properly exploit and invest this energy, as it is part of their revenues on gas wealth, such as Russia, Qatar, Iran and Iraq, as well as being a raw material for petrochemical industries and for the production of pesticides, agricultural production and protein materials (Musa, 2000).

Therefore, gas is the most important source of alternative energy to oil, and it is the least expensive type of fuel, not energy production, natural gas has the advantage of being 40% lighter than air and rises to disappear into the atmosphere upon release, Iraq ranks eleventh among the world's natural gas-rich countries, after Russia, Iran, Qatar, Saudi Arabia, the Emirates, America, Nigeria, Venezuela and Algeria, and its proven reserves are about 112 trillion cubic feet (Lebkicher, Roy et al., 1960).

Commercial gas production in Iraq began in 1927. Despite the fact that Iraq has a tremendous resource of natural gas connected with the production of crude oil and free gas in terms of proven volume and potential reserves. In addition to the deterioration in the level of the gas sector in Iraq and its limited ability to convert, total natural gas production is not consistent with the enormous reserves owned by Iraq.

That is, converting natural gas into gaseous products that enhances the benefit of this industry and the momentum of other industries and sectors (Ibid).

Foreign oil companies were not interested in investing in the gas associated with oil production in Iraq when oil was discovered in the Baba Karkar field in Kirkuk in 1927. Since that time, the Iraqi gas associated with burning has been lost, in addition to the closure of many gas wells in some fields, including that is Cormore, Chamchamal, and Red Khashmallow.

However, interest in using natural gas began to be limited in the late 1950s (Morton, Michael (2006).

In the 1960s, the Iraqi government worked to build important gas investment projects in Basra, including the Najibiyah power plant, the Abu al-Falous fertilizer plant, the Nahran Omar paper mill, and the Shuaiba power plant.

The true interest in gas first appeared in Iraq in the 1970s, when the period was termed as "golden" for gas investment in Iraq, whether through production through the National Oil Company or consumption through the Ministry of Industry and the Public Electricity Corporation. Despite the circumstances of the conflict with Iran, construction of new projects proceeded until the early 1980s (ibid).

In the eighties, the National Oil Company implemented the giant South Gas Project with a capacity of 1050 m² (one million standard cubic feet) per day, then the North Gas Project, and a national gas network was established extending from the south to Baghdad and the center to meet the northern network to Kirkuk with the necessary supplies of gas from Both directions, and the underground storage project for liquid gas in Kirkuk was also implemented. On the industrial level, power plants were established in Nasiriyah - Al Haritha - Khor Al Zubair - Najaf - Al Hillah - and complexes of fertilizers and petrochemicals - and iron and steel - in Khor Al Zubair, cement factories in Samawah, Najaf, and Al Kubaisa and other gas investment projects. The eighties also witnessed the export of dry gas and gas liquids from Rumaila to the State of Kuwait, as well as the export of liquid gas through the basins to the neighboring countries of Jordan, Syria, and Turkey (Al-Zeini, 2010).

2.2 Production

Natural gas is produced in Iraq in two main regions, the southern region and the northern region.

The production of natural gas witnessed changes similar to the changes in oil production, as most of the quantities produced of natural gas come from gas associated with oil, and most of the natural gas produced was not used because there are no facilities to treat it.

At the beginning of the eighties, the South and North gas complexes were built and operated, which led to an increase in the percentage of investment in natural gas

production from 11.4% in 1980 to 88.7% in 1998. At the same time, this percentage increased (Luay j. al-Khatteeb, 2013).

Whereas, the production of marketed natural gas increased from 1.3 billion cubic meters / year to 5.5 billion cubic meters between 1980 and 1998, but the year 2002 witnessed a decrease in the production of marketed natural gas to 2.36 billion cubic meters and then continued to decline to one billion cubic meters in 2004.

The percentage of natural gas investment reached its lowest levels because of stopping the gas processing plants affected by the events in Iraq since 2003, but it increased slightly because of the rehabilitation of some facilities and natural gas complexes (OAPEC, 2010).

Iraq marketed about 1.1 billion cubic meters/year in 2009, which is equivalent to 0.04% of the total natural gas market in the Arab world.

There were two natural gas processing complexes in Iraq, the first in Kirkuk and the second in Basra:

2.2.1 North gas company

The General Establishment for the Gas Industry in the Northern Region was established by virtue of the repealed Revolutionary Command Council Resolution No. (1400) in 1980 and Law No. (101) of 1976 AD and its amendments “Based on Article (7) of the Companies Law No. 22 of 1997, the Gas Company was established Al Shamal (a public company) with effect from 1998.

The company's objective was to process the quantities of raw gas associated with the production of crude oil in the northern fields and transform it into its derivatives from the following products:

- a. Dry gas: a clean and easy-to-use fuel used in power plants, cement plants, and many industrial companies in northern and central Iraq, It is used as a raw material in fertilizer and petrochemical plants.
- b. Liquid gas: It is used as a fuel for domestic purposes for local consumption and export.
- c. Natural Gasoline: It is used as a fuel after it has been improved or injected with crude oil to improve its specifications.
- d. Sulfur: It is used as a raw material in a number of local industries, and the

surplus is exported outside Iraq (Zedalis, Rex, 2009).

The design capacity of the North Gas Company is 15 million cubic meters/day of sour natural gas, and it consists of two similar energy production lines. The complex was completed in the mid-1980s and aims to produce approximately 8-11 million cubic meters per day of marketed dry natural gas, 735,000 tons per year of propane gas, 448,000 tons of butane gas in addition to 384 thousand tons per year of Natural gasoline and 528 thousand tons per year of sulfur. The complex includes eight stations to compress natural gas and transfer it from the production stations to the gas plant through a pipeline network of about 250 km in length (OAPEC, 2010).

Baghdad has signed a number of agreements to study prospective gas development, export, and import projects since 2005. Although little has been done to put these agreements into effect, they are crucial signs of how Iraq views gas as a means of connecting it to the rest of the region.

The Iraq Gas Master Plan, for which the MOO commissioned Shell in 2005 to establish the blueprint plan and strategy for Iraqi gas, is the only exception (International Energy Agency, 2012)

Despite the fact that the strategy began as a separate strategic plan for Iraqi gas, Shell engaged into direct discussions with Baghdad in 2008 to negotiate an exclusive head of agreement (HOA) with the state-owned South Gas Company to develop all associated gas produced from Iraq's southern fields. This HOA was expanded in 2011 to include a twenty-five-year contract to monetize associated gas generated from only three southern fields (Rumaila, West Qurna-1, and Zubair) in order to meet local demand.

The agreement also includes the possibility of exporting LNG to Asia. The Basra Gas Company is the name of the joint venture (**Ibid**).

Iraq ranks eleventh among the world's rich countries in terms of natural gas after Russia, Iran, Qatar, Saudi Arabia, UAE, America, Nigeria, Venezuela and Algeria, and its proven reserves amount to about 112 trillion cubic feet.

The total associated gas reserves are 98.3 trillion cubic feet, which represents 75% of the total natural gas reserves.

As for the total free gas reserves, it is 32.7 trillion cubic feet, which represents 25%

of the Iraqi gas reserves, and this does not include many areas of Kurdistan invested in recent years (Longrigg, 1961).

It is hoped that its ranking will advance if recent developments are taken into account, and when it finishes its exploration, especially in the deep layers, which have been disrupted for decades due to the deteriorating security situation and the war against ISIS, after which it is estimated that it will occupy the fifth place. Iraq seeks to develop in the field of gas through its participation in the Third Gas Exporting Countries Forum Summit in Tehran, where Iraq now serves as an observer member and works to become a full member in order to contribute to the development and benefit of this sector alongside the other gas producing and exporting countries (Saul, 2007).

As the proportion of associated natural gas, investment during 2015 in Iraq amounted to 50% of the produced quantities of 3000 million cubic feet daily.

There are efforts to maximize its investment and stop burning it in order to protect the environment, to benefit from its resources, to generate electric power, and to benefit from it in the industrial, agricultural, and other sectors. Indeed, the Basra Gas Company was established, in which Iraq owns 51% of its shares, while the rest owns two companies, Shell and Mitsubishi (Ibid).

Work continues on adding new projects in each of the fields under development, in order to accommodate the expected increase in the production of associated gas according to the expected increase in oil production.

This includes the full investment and processing of gas to produce dry gas, liquid gas, natural gasoline and sulfur, which will increasingly meet the needs of domestic consumption and surplus for export.

The extraction of "ethane" gas will help in the development of petrochemical industries, which will bring progress in a large number of associated industries.

As well as the production of "methane" gas, which is used mainly for the production of fertilizers has an impact on the development of the agricultural sector.

There is a great effort to extract "free gas" in all the sites where it is available, and there is follow-up to speed up its extraction in "Mansuriya", and waiting for the security situation to improve. Besides, there is hard work to extend the gas pipeline

network and provide the required tanks and pumping stations (Shwadran, 1977)

The quantities of Iraqi gas reserves are estimated at more than 112 trillion cubic feet, 2/3 of which are available with oil reserves in Kirkuk, south of the Bin Omar field, Majnoon, and Halfaya in Nasiriyah, Rumaila, West Qurna, and Zubair, while 20% of the gas reserves are located in areas of no There are oil fields in it, and they are concentrated in the north, in Jumbur, Chamchamal, Bay Hassan, Ajil, Bab Karkar, Qasim Omar and Mansouriya, and the Akkas field in Anbar.

The existence of such gas reserves in Iraq suggests that it will be the second most important carbohydrate wealth after oil in the country, as Iraq can directly produce it for domestic consumption purposes first and secondly for export through the northwest ports (Ibid).

2.3 An Overview of the Future of Gas in Iraq 2020

The acceleration of gas investment in Iraq depends on the extent of serious cooperation between the constitutional institutions represented by the House of Representatives, the central government, and local governments.

As the elaboration of well-thought-out plans contributes to the development of the gas production sector, as gas takes an important role in supplying the treasury with foreign monetary reserves.

However, it faces some obstacles to its investment in Iraq, including the disturbance of the security situation, which negatively affects the stability of workers and their continued presence during work (Edward, 2007).

Iraq is witnessing a decrease in the feeder gas rates of the North Gas Company and the South Gas Company.

The planned production capacity of the South Gas Company is 450 Muqmq / day. On the other hand actually received feeder quantity is 292 Muqmq / day on average, and thus the deficit in the planned nutrition is about 158 Muqmq / day on average.

This affects the amount of liquid gas produced daily from 2,500 tons/day to 956 tons/day, i.e. a deficit of (1544) tons/day.

This deficit causes a severe crisis for gas prepared for daily consumption, at a time when large quantities of natural gas associated with oil are being burned (ibid).

Among the barriers to gas investment are frequent mechanical and electrical holidays, as well as a lack of spare materials at the required level, which is reflected in the deterioration of periodic and annual maintenance operations due to the obsolescence of devices and equipment as their useful life has ended, necessitating the updating of devices and equipment because they have become insufficient.

The allocation of funds to rehabilitate, develop, and expand gas facilities, the constant power outages of companies and the lack of sufficient electrical generators to operate the plant, which reduces the amount of production planned, and the lack of coordination between the oil sector and the gas sector within the Ministry of Oil, the lack of interest in gas wealth in constitutional institutions, and the lack of funds to rehabilitate, develop, and expand gas facilities Concerning gas flaring, there is a need for legislation that prohibits gas flaring while also encouraging investment in the construction and development of the gas sector (Falola, Genova, 2005).

The state needs to work on accelerating and maximizing gas investment in most ports, by developing legislation that prevents gas flaring and obliges the government to provide funds to the gas sector with a short deadline to reach the zero point in gas flaring.

Creating an effective and binding system for cooperation between the oil and gas sectors within the Ministry of Oil, as well as following up on the recommendations of the Parliamentary Oil and Energy Committee and the provincial councils affected by gas burning damage.

In addition to the enactment of a law governing investment in the gas, sector and the country's openness to the global gas industry (Ali Zaini, 2010).

The country also needs to establish a national gas company in accordance with international gas industry standards, supported by the federal government, parliament, local governments, state oil and gas companies, and foreign oil companies working in the development of oil and gas fields in Iraq.

Despite the enormous hurdles of war in recent years, Iraq has achieved significant progress, virtually doubling its oil production in the last decade.

However, the country's ability to maintain and invest in its electricity infrastructure has been harmed by the unrest.

Although Iraq's oil production capacity has increased dramatically over the last decade, the sector faces a number of hurdles in the future (**Mehdi, Fattouh, 2020**).

As the amount of oil produced has increased, so has the amount of related gas generated. Capacity to catch and process this gas, on the other hand, has not kept up.

Iraq's gas imbalance has expanded because of its inability to exploit natural gas reserves, and the government now relies on imports from Iran to fulfil rising demand.

During the projection period of 2020–2025, Iraq's oil and gas market is expected to increase at a CAGR of more than 2.4 percent. Increased oil and natural gas production and consumption, future pipeline infrastructure projects, plans to upgrade oil infrastructure across the country, during the projected period, increased investment in all three oil and gas sectors is predicted to promote the growth of the Iraq oil and gas market (**ibid**).

2.4 The Concept of Good Governance in the Management of Oil Wealth

Economic development policies in a number of developing countries raised issues related to the safety and integrity of governance and given the stability of the principles of sovereignty of each State and the need not to interfere in its internal affairs.

Many international financial institutions have found it difficult to reconcile respect for these principles with the need to draw attention to the importance of good governance.

These international institutions have found a point of measure to raise issues of good governance without being accused of interfering in the internal affairs of states.

The two courses found that good governance or its so-called interconnection in economic and social development could be expressed as good governance, a term that refers to governments.

It is also used in English as a pseudo-French expression, which has helped international institutions raise issues (Almodares, 1976).

The World Bank has defined good governance as the way in which the Authority is managing the economic and social resources of the State with a view to economic development.

This concept clearly encompasses government agencies, as well as local institutions, Arab community organizations, working methods, the form of institutions, and the importance of the rules of institutional behavior, which include incentives or deposits of behavior (K. Sarwar Lateef, 2016).

The concept of good governance also includes reference to the concepts of transparency, the rule of law or rule of law, participation, and decentralization, and clearly, the concept of good governance is consistent with other trends in terms of the high-level concept, market economy, and rule of law, democracy and respect for human rights.

These ideas represent an integrated whole and are a form of a new ideology that is driving international markets.

Especially in energy markets, since Iraq depends almost on its crude oil exports, it is very important to apply the terms of good governance in it to ensure the transparency of the distribution of national income to the segments of society and to ensure the good management of the past oil wealth (Brautigam, Deborah, 1991).

As a result, the concept of "good governance" arises as a benchmark against which dysfunctional economies or political organisations might be measured.

The concept revolves around governments' and governing bodies' responsibilities to address the demands of the public rather than certain sections in society.

Because liberal democratic nations, which are concentrated in Europe and the Americas, are frequently labeled as "most successful," good, governance norms frequently compare other state institutions to these states.

Aid groups and developed-country governments frequently define "good governance" in terms of a set of standards that conform to the organization's agenda, leaving "good governance" to mean many different things in many different settings (Poluha, 2002).

There are those who define good governance as "governance by elected political leaders and administrative cadres committed to the development of society's resources.

It aims to improve their quality of life and well-being through their participation and support.

There are those who define corporate governance, how to practice corporate governance, and how to best manage the corporate governance system.” face, how to manage a fair management system, etc. In this regard, it should be noted that there are proponents of the first option, but on the other hand, a number of opinions agree to restore corporate governance because the word is a sign that companies are in power or actors, which may reflect the intended meaning (Al-Anzi, 2004).

The word governance comes from Latin and ancient Greek, and it originally meant "control, direction, and manipulation." Its meaning had long been confused with that of the word government, and it was mostly used to refer to administrative and political operations concerning national public affairs.

Western political scientists and economists, on the other hand, gave it a new connotation in the 1990s. Since then, the word has come to mean considerably more than it did previously, and it is no longer synonymous with the word government.

It is not only an English word; it is also used by people who speak other major European languages, instead of an exclusively political term, it is widely used in social and economic spheres (Gaudin, Jean-Pierre, 1999)

In a period of rapid change, globalization, and increasing uncertainty, all countries, developed and developing, are looking for a new type of governance that is better suited to the times in order to obtain an economic competitive advantage and generate substantial and lasting social growth.

As a result of the change, governance theory is becoming the dominant political theory.

They are consistent with the principles that underpin the discourse and texts.

They have been agreed upon by global politicians, intellectuals, bureaucrats, and entrepreneurs, and have helped to alter government theory in mainstream politics (Ibid).

2.5 Oil wealth

Management:

The emergence of several modern theories has greatly helped to bring about good governance. One of these is what it is; the theory of transaction costs of Brunald

Kosh and William.

The theory of agency, stakeholder theory is notable that the economic verses of corporate governance suggest that in 1992, the Manliet & Berle addressed the topic of separation of ownership from management and this is part of the concept of corporate governance (Rivlin, 2014).

This separation between management and ownership has been the whole bridge that can create a gap between corporate managers and owners due to negative practices that can harm the company. Jensen & Meckling in 1909 and Famia in 1909 attempted to refer to the agency problem, which referred to the inevitable conflict of the company when ownership and management were separated.

In this context, Minorw & Months in 2011 confirmed that there is a possibility to solve the agency problem through good corporate governance application (Ibid).

In 1992, Ronald Coz's theory of transaction costs emerged, and that transactions established by the firm cannot take place without cost, since all transactions face problems It is about getting information and that all problems people face are caused by information inefficiencies and asymmetry in the exchange.

Therefore, the information needs time and effort, so it is a costly process (Aiyagari, Gertler, 1991).

Harper Simon pointed out in 1947 that the theory that calls the complete rationality of individuals in decision-making and the machine of the dialog of all information needed for decision-making was invalid, and that individuals had limited capabilities and could not get all information, as Frederick Hayek found.

The last theory of the stakeholder's theory emerged in the 1970s and is based on this theory to contribute to expanding the company's contractual vision so that it can be presented in a number of contracts between managers and armed owners (Ibid).

Over the next few years, the newly established Iraqi government will have to make a number of crucial decisions about the oil industry's future, the role of oil earnings in financing other national reconstruction activities, and the definition of national oil.

Companies in the oil business are reorganizing.

Any production expansion effort should start with improved national oil companies' ports management. Existing oil firm subsidiaries, such as the South Oil Company

and the North Oil Company, will have to be addressed directly.

Some governments have opted to use national oil company management to achieve broader political objectives such as job creation, community services, tax generation, and economic diversification.

Decisions on the deployment of national oil company resources were decided on political rather than economic grounds in some cases.

2.5.1. The pros and indicators of good governance

Many intellectuals believe that good governance is the country's failure to manage the country's economic affairs.

As many countries have embraced central planning as a fundamental management tool, naming the collapse of the former Soviet Union and the countries of Eastern Europe which relied on central and planned style After the emergence of the idea and growth of civil society organizations in such an egregious manner, in the administration.

It is a situation that cannot be overlooked, as well as its impact on societies, particularly those with a high degree of democracy.

On the one hand, these organizations have a direct influence on the state's authority and decisions.

On the other hand, the recent emergence of crises and at different times has cast a shadow over the pattern of government administration of state policies (Ban, 2008).

The emergence of good governance is thus a reflection of the changing nature of the government's work and its public institutions and the pattern of its state's light.

Global corporations have a greater role in influencing policy-making, especially those that have a direct bearing on the paths of economic development.

There is therefore a continuing need to review the type and nature of the relations between these companies on the one hand, and between the State on the other and in the form, that guarantees sustainable development.

Changing standards of support training and working to develop and keep pace with rapid technological developments (Ibid).

The revolution in information and communication has enhanced the emergence of

globalization, especially in the last decade of the last century, through the exchange of information and knowledge and the use of the latest technology in various disciplines.

The emergence of second and multilateral international agreements and their role in the eyes of states that limit their freedom and decision-making capacity is an important reason for the emergence of good governance (Asaad, 2011).

Good governance is undoubtedly dispensed with, and its terms are applied.

It will provide the State with the opportunity to reach specified levels of sustainable growth and to enhance living conditions equally among the people of society, as well as to apply the law that is detrimental to the State and the citizen.

Good governance is directly related to basic principles, including sustainable development, sound governance, the concept of legality and the efficient execution of the laws of State executive bodies (Ibid).

The management of society is evolving and changing in order for good governance to be effective and to have the potential for practical application in different fields, a number of prerequisites must be met in the institutional structure of the State, such as a privileged and flexible leadership at the head of the authoritarian or administrative pyramid.

The necessity to ensure the transparency of laws, laws and regulations and the effective engagement of the community, of individual or group institutions in civil society is direly need.

International institutions, including the World Bank, have generally worked to develop a set of quantitative indicators by which the achievements of governance are clarified. In this area, six indicators of governance were identified first voice and accountability (Al-Mashhadani, 1995).

The security that is very important to ensure good governance and to achieve the goals set for any project or strategy is that there is a certain inflexibility for the people of opinion, especially those who have experience and vision.

This knowledge build-up will ultimately be designed to complement the project's objectives; on the one hand, the Department should be firm in its decisions and should take into account in those laws and supporting legislation, which have room

for interpretation (Ibid).

It is critical for oil and gas port management to practice governance since it improves the efficiency of their operations. Furthermore, good governance methods draw attention to instances of errors and difficulties.

Management has the opportunity to respond swiftly and effectively by disclosing potential problems.

The emphasis on good governance holds the board of directors accountable for increasing efficiency, which in turn allows for cost savings.

All operations work well when port management implements good governance.

There is a lower risk of a crisis because the board must respond rather than act, and they have more time to account for their actions and make judgments.

Organizations with a culture that encourages good governance are more likely to deliver high-quality products and services that fulfil the public's needs and expectations. (G. Froger, 2001)

Shareholders and Partners can be certain that an organization's finances and behavior are transparent, and that all people are treated with dignity and respect, thanks to good governance.

Good governance produces best practices, which serve as a benchmark for all businesses and organizations.

Many things are assured by good governance, including the reduction of risk and the prevention of fraud and unethical behavior.

When we put it all together, excellent governance leads to development and success, which is the fundamental point of why businesses exist in the first place (Ibid).

2.6 Reality of Oil Policies in Iraq

Iraqi politics were represented in Iraqi ports, where Iraqi ports helped to reinvigorate commercial activities for exports and imports to Qatar, an important and important contribution by Iraq's dependence on its trade with the various countries of the world on maritime transport, particularly its ports and locations on its way the Iraqi ports were represented aprofile on such ports should be provided to clarify its importance

(Muhammad, 49, 2011).

The port of the stronghold is located on the 51st-47th east longitude and 31-30 north latitude on the west side of Shatt al Arab, 135 km from the northern end.

The port was founded in 1914 at the beginning of World War I, the first port of Iraq's ports, and was established over a 3-kilometer stretch of the restricted area.

The front of the pavement is 5.2 km and a 3-man, 500 m long, the port and the marina have 13 pavements, 45 electric cranes, 2 pavements, with a capacity of 4000 m, 25 pavement, and storage of various sizes.

The port's warehouses are distributed on the pavements and are set up to store the various goods.

The port has been suspended since the war and it was between Iraq and Iran (Ibid).

Table 2.1: Distribution of the number of incoming units to the port during the year 2005/2006

Load/ton	2006 number of units	2005 number of Units – Cargo		Month
4150	3	–	–	January
4350	6	–	–	February
560	1	–	–	March
1695	3	–	–	April
2770	4	12530	24	May
5747	12	6270	22	June
915	11	6306	26	July
16414	20	350	10	August
19887	22	3063	11	September
10700	12	2675	5	T1
16165	17	4300	3	T2
11466	13	8910	7	Q1
103054	124	44404	108	Group

It is currently almost suspended until 1980 and the port is currently operating with certain specific cards because of the difficulty of the arrival of vessels and ships at the entrance to Shatt al Arab because of the presence of a number of canoes in the canal caused by the Iraqi-Iranian war, moreover, the depth of Shatt al-Arab is not enough to receive the big ships, as the highest possible is a potato and the loads reached 5.8 meters, the first is the "Red Sea", which is the largest city in the world, and the second is the "Red Sea" The precarious security situation for the years before 2005 was a problem (Kazem, F, 2005).

The number of units arriving at the port increased for most of the year 2006, and the amount of cargo arriving increased from 44404 t in 2005 to 103054 t, owing to a slight improvement in port performance, but this port remains navigable because of the lack of significant economic feasibility, especially since there is no significant economic benefit. The idea of converting this port into a tourist port that reflects the history of Basra governorate (Ibid).

2.7 General Transportation Company, Iraq Ports

2.7.1 Umm Qasr Port

The port is located near the Arabian Gulf, 75 km from Basra city at the southern end of Khor al-Zubair, where he meets Khor Abdullah.

The necessity to contemplate establishing a second port was prompted by a growth in foreign trade and overcrowding in the stronghold's port.

The port was built due to the location's proximity to the Arabian Gulf, the lack of vessel passage in the navigation channels, and the depth of the region, which allows for more vessels that are sunken.

The port was established in 1961 and was completed in 1965 and was actually occupied in 1967 to receive the ships with the inimitable potato in the navigation channel in Shatt al Arab after Iraq's commercial dealings with the world countries increased (GCPI., 2018).

The port consists of two parts, the south of the old docks and contains nine pavements for general goods, as well as a wharf for silo, the northern part consists of ten quays for ordinary goods with a container jetty, a rolling dock, and a passenger ship pier.

The total capacity of the port is 10.5 million tons per year.

The port is mainly for general goods and sulfur, with 14 public goods pavements, 5.3 million tons per year, and two sulfur discards, amounting to 0.3 million tons per year, accounting for 62% of the total port sidewalks, and the other pavements are for containers, cereals, and rolling stock (Ibid).

The length of the docks at the port ranges from 180 to 200 meters per pier.

The total length is 3952 meters and the number of cranes in place is 44 different cranes with a capacity of 3 to 15 tons, with the exception of two-container handling cranes imported in 2000. The manufacturing capacity of one crane is 40 tons per lift.

The number of stores in the port reaches 26 stores with a total capacity of 8.3 million tons per year, and there are three open squares with a capacity of 300,000 tons per year (Mashhadani, 8, 2011).

The port has important features that can help it keep pace with developments in the shipbuilding if it is developed technically and administratively, including the height of the port site and the stifling of the land, which allows the construction of new pavements with significant specifications and capacity, as well as the modernization of existing platforms. The port is also connected to a road network and a railway line.

The site is easily located due to the limited deposits that come by the tide and the proximity of the port to the Arabian Gulf, with the sea passage 65 km long.

The time it takes for the vessel to travel is no more than 6 hours while the time it takes to reach the port of the stronghold is more than 13 hours.

It is with the corridor length and the view of, The number of units connected to the port of Umm Qasr increased after 2006 to 891 units, up from 763 units for 2005 and cargo in 2005, and up to 7,720340 tons in 2005, and the movement of transport and cargo is also observed (Hussain, 2008:122) .

2.7.2. The port of Khor al-Zubair

The connection to Umm Qasr port is higher than the one in the stronghold port, which did not exceed 2006124U and 103054 tons only.

The port of Khor al-Zubair, a commercial industrial port with 12 pavements, including five pavements for general goods, and the rest for industrial materials such as iron ore, phosphate, amputations, chemicals, and nitrogen fertilizers, with a capacity of the docks at 75.4million tons per year. The port, 60 km from the center of Basra and 105 km from the northern end of the Arabian Gulf, was built in 1970 and was built with a nucleus and so-called port, completed in 1979 and is effectively operational, but stopped and completely stopped due to Iraq's invasion of Kuwait (Ibid).

Khour al-Zubair navigation channel was dug 24 km long to link Khor Abdullah and from the Gulf.

The port contains two specialized iron and steel plant docks, two reinforced concrete quays and cylindrical iron ore for iron ore and sponge iron export, and five 250 - meter specialist pavements with accessories include specialized depots for urea fertilizer storage, as well as phosphate, as well as those for loading What is known as chemical fertilizer.

There are also three 180 -meter public goods piers with 12 electric cranes, towards and railroad lines, as well as buildings and services (Park, Et al., 2014).

The trade movement in the port of Khor al-Zubair has increased after 2003, a natural consequence of the lifting of the economic embargo and trade freedom granted to private traders after the end of the war on Iraq.

The commercial maritime traffic of the port is growing.

The number of ships entering the port reached 1262 for 2005 with species.

In view of schedule 3, the capacity of port 10 and the size of the various bastion can be seen, with the number of units in 2005 reaching 1262, the 1204 443t and increasing to 1329, and the 4195722 tons.

A significant rise that is evidence of the increasing purchasing power of the population in Iraq and the increasing demand for commercial goods, given that Iraq does not impose kinetic duties on goods, together, have increased the number of units and cargo to the Elmina (Al-Mashhadani, 1995: 2).

2.7.3. Abu Floss Port

Abu Floss Port is the smallest of the Iraqi ports, consisting of three pavements for public goods.

The port is a commercial port for various public cargo built after the crisis of congestion and congestion in 1974, with the construction of its pier in 1975 and completed in 1976.

The port is located on Shatt al Arab on its western side, about 20 km from the center of Basra city in the south, and consists of three steel platforms (Ibid).

2.8 Oil risks and their Management in Iraq

The oil risks in Iraq have been represented by the establishment of statistical data.

No complete statistics were available on the number of units and the amount of cargo to the port for 2006, so the comparison between 2004 and 2005 was made.

Given the amount of cargo to the port of Abu Floss through Table 4, we could see the limited loads estimated at 683480 tons for 2004, although the number of loads increased units arriving at the port in 2005 were 2025, the amount of cargo was only 480270 tons, due to the small port and its low capacity (Naqshbandi, 2011: 430).

The main Iraqi commercial ports are four main ports, and Umm Qasr port plays a major role in receiving large cargo ships such as rice, wheat, and other foodstuffs.

Umm Qasr port is the first commercial concern due to the advantages of this port, the first of which is its proximity to the shipping routes and the platforms for receiving these vessels are available in comparison with other Iraqi commercial ports.

The first of the three major ports is the Port of Port-of-Port, which is located in the port of Port-of-Port, and the port of Port-of-Port, which is the fourth place of the limited capacity. Special foodstuffs are made up of ration cards, construction materials, and cement.

A major role in the port business is the trader's Ports of Iraq's Oil State Iraqi Trade Movement (Saleh, 2011: 49).

The construction of ports the general company of Iraq ports started the comprehensive construction phase of Iraqi ports in early 2005.

This construction defined three tasks.

The first of is to remove the big and many boats from the passages. it is known as the navigational passage used by ships to reach the Iraqi ports.

The development of the new maritime routes is a result of the deep deterioration of the waterways, which is due to the many glorification that comes from the lands and the Shatt al Arab, as well as the so-called Karon River and several other tributaries.

Since the beginning of 2005, port management has begun to lift a set of bogs that have been hampering the functioning of the pavements (Ibid).

The port of Umm Qasr was lifted from Khor Abdullah and digging operations in Al Khor as well as in the leading channel from the sea to the port the Belgian Drijtec International has been established the UNDP contractor.

the Japan grant raised about 12 million cubic meters of Italian and arrived The depths of the canal in its first section are 11 cubic meters and in the second section 3.12 MP 2. This enabled the entry of ships carrying these in boats and in the third precedence, 18 were repaired.

The basic port capacity of 11,3 out of a total of 38 cranes of millions of tons per year has been surpassed by rapid pace through the repair and reconstruction of handling and rehabilitation of the navigation channel in terms of drilling night (Ban, 2008: 122).

2.8.1 The obstacles facing the current ports

The most important obstacles facing the Iraqi ports are the deterioration of the depth in the navigational ways and the sidewalks, especially in Umm Qasr port and Khawr Al-Zubair port. In addition, there are the boats in the sealanes leading to the ports, as the Iraqi navigational channels need drilling operations, lifting the boats, and continuous maintenance.

There is a shortage of marine units such as excavators, seeders, vessels, sea cranes, water, and fuel tankers.

The problem of Iraqi ports is that they are not in keeping with the modern developments of marine transport represented by container ships and not using the modern electronic systems to deal with these ships.

The design capacity of the existing ports is 20 million tons and 34 pavements, including grain specialist pavements, sugar, containers, and general goods (Ibid).

A large proportion of the revenue is currently being generated through the ports of neighboring countries.

Port capacity 12 is expected to arrive at a cost of more than \$50 per ton One Iraqi, based on foreign trade indicators, and is 40 million Tons in 2015.

It is hoped that having developed these ports, they will attract the attention of international transport companies for use because of their location as a crossing point from the Gulf to European countries.

Goods from East and South Asia, Japan, China, Korea, Thailand, India, and other countries for delivering them to Europe must pass through the Red Sea, the Arab Sea, the Gulf of Suez, and the Mediterranean.

If they arrive at Basra ports, they can be transported within one day by road to Turkey, including Europe.

At present, this difference provides foreign companies with large sums and gives a competitive advantage to Basra ports compared to other ports. (Al-Mashhadani, 2011: 28)

2.8.2 Options to develop Iraqi ports reality

The Ministry of Transport has developed a plan called the Comprehensive Transport Plan.

In terms of status, option 13 includes Iraqi ports.

The plan includes three options for initial development and a small development of existing ports including a simple development of Abu Floss ports.

The local trade is handled by the foreign trade by the foreign trade and small ships, and the port of Umm Qasr is dealing with foreign trade and its capacity is increased to 10 - 11 million tons per year, and the port of Khor Al-Zubair is dealing with industrial products.

There will be a difference between the country's need for import and export operations and port capacity.

As for ships in Shatt al-Arab, they are small because of the length of the ship The canal, the canoes, and the depth are few, as is the case with the ports of Umm Qasr (Ibid).

Table 2.2: The volume of goods and capacity available at these ports and additional cargo (Super power)

Additional new energy 1 million tons	JC Energy 1 million/ Handling loads 1 million tons		Port
2.3	7.7	10	Umm Qasr
3.3	4.2	7.5	Khawr al-Zubair
1.4-2.65	0.1	1.5-2.75	The stronghold
0.15	0.6	0.75	Abu Floss
7.15-8.4	12.6	19.75-21	Total

The first is the construction of the new building, which is located in the city of Tzar and is the first of the major areas of the city.

The second option is to develop existing ports, including a simple development of the ports of Abu Floss and the stronghold to deal with local trade by means of felons and small ships.

The new deal will include handling 15 million tons of containers and 11 million tons of ordinary goods, with 55 million tons of containers and 33 million tons of ordinary goods remaining outside the ports and imported through the ports of neighboring countries Port, Quick line, and navigation channels drilling.

The container ships are expected to reach Umm Qasr port with a depth of 5.14 meters, which requires increasing depths to 17 meters and expanding the basin to 800m.

The development and expansion of Umm Qasr port capacity, especially in containers, requires the connection of the port with a double-line landline with the highway (Mustafa, 30, 2011).

The port of Khor al-Zubair is for industrial products. For the ports of Abu Floss and the stronghold, they will deal with small ships and pastry.

The cost of developing ports is expected to be about 700 million euros.

The annual maintenance cost is €30 million, mostly for the maintenance of navigation channels.

There will also be sufficient equipment to work in the ports of Umm Qasr and Al - Zubair to handle goods and containers to deal with ships of 300m and 60.000 tons.

Projected capacities for 2018 are expected to be about 25 million tons. In 2028, the potential is 26 million tons.

The expected ship's size is 15,000 tons, 50,000 tons of grain, and 20,000 tons of goods in general (Ibid).

The present price of oil per barrel has had a significant impact on the global oil and gas industry.

Apart from oil price fluctuations, this industry is influenced by a number of external factors, including the availability of oil resources, high transportation costs, and exposure to high risks.

When dealing with these external constraints, oil and gas professionals must shift their focus to resource management and capability management.

Performance management can be used to accomplish this.

Because this business relies heavily on the supply chain to deliver its services and goods, it is critical to comprehend the difficulties that oil and gas practitioners confront in managing their supply chains (Masha Menhat, 2020).

3. OIL AND NATURAL GAS, CHALLENGES AND OUTLOOK IN IRAQ

There are many problems in the oil industry, which are the backbone of the Iraqi economy and the main source of funding for the general budget.

They should be confronted and neutralized or overcome in order to lay the solid foundation for the development of the oil industry on modern foundations in order to be the starting point for the development of the rest of the economic sectors.

It is possible to refer to a number of these problems as follows:

It is imperative that the Ministry of Oil have a clear oil policy, a specific strategy, and a coherent and clear oil program with features, objectives, and methods that serve the national interest.

In light of this program, the government is monitored, evaluated, and held accountable periodically according to quantitative indicators that can be measured, compared, and verified, which we find absent in the Iraqi Ministry of Oil program included in the government program for the period 2018-2022, which clearly indicates the absence of a strategy to develop the oil sector.

There are two opposing strategic options related to the form and type of relationship with OPEC (Zaini, 2010).

The Oil Ministry and the next government must choose one of them:

- a. The first option is to remain within OPEC and adhere to the production quotas that it determines in light of the conditions of the global oil market. which means that the production capacity of Iraqi oil remains unchanged without the ability to increase it not only in the current circumstances that witness the collapse of oil prices but even in the medium and long term. Especially now that Iran and Venezuela have regained their previous production capacities following the easing of US sanctions.

According to this alternative, there is no need for foreign businesses to continue working within the framework of the oil licencing rounds that cost Iraq 12 trillion

dinars per year as long as Iraq's production is limited to its OPEC share (Ibid).

- b. As for the second option, it is to leave OPEC, which is no longer as effective as it was in the seventies of the last century, and which today is now clinically dead.

Its role is limited to bearing the burden of adapting supply to demand to provide bailout packages for high-cost oil such as shale and sand oil at the expense of OPEC losing its market share for the benefit of other producers.

This option enables Iraq to devise an oil strategy aimed at increasing oil production to 6 million barrels per day.

This goal is achieved by dividing it into manageable annual numbers or goals for foreign companies.

They are completing production and export infrastructure in order to increase oil exports and gain market share, as the coming oil market conflict will be centred on gaining more oil shares in the global oil market (Shikali 2010).

The export problem of crude oil:

Iraqi oil exports represent about 99% of the total Iraqi exports and therefore it is the main source of income in the general budget.

But these exports suffer from clear structural imbalances represented in that 97% of the flow-through one corridor in the south through the Arabian Gulf in When only 2.2% of Iraqi oil flows through the Turkish port of Ceyhan, and the rest is exported to Jordan through tankers.

The large concentration in Iraqi oil exports leads to a kind of inflexibility in export and to its vulnerability to the conditions prevailing in the hot Gulf region, as it is sometimes stopped due to weather conditions, hence the importance of diversifying the sources of Iraqi oil marketing, especially through the Turkish line, which has an export capacity

Another imbalance is the concentration of Iraqi oil exports to two nations, India and China, which account for almost 60% of total exports, despite being among the world's biggest oil users (about 16 million barrels per day).

Due to Saudi Arabia's dumping policy, Saudi Arabia's exports to India increased by

almost 200 thousand barrels per day last April, reaching 1.1 million barrels, and its exports to China doubled to 2.2 million barrels.

The increase in Saudi oil exports to India in April was roughly equal to the decline in Iraqi sales to India.

With the importance of India and China in importing Iraqi oil, the Iraqi marketing strategy should diversify the sources of import, pay attention to other countries, especially Japan and South Korea, and pay more attention to the US and European market in order to expand and diversify their marketing shares.

It is important for the Ministry of Oil to have a clear program to achieve self-sufficiency in oil derivatives through investment in new refineries or in developing refining capacities in existing refineries. Iraq should consider adding an export-oriented refinery to add value to its crude oil and diversify its energy-related export offerings (Hall, D. J. et al., 2013).

Any such refinery must process at least 300 thousand barrels per day to benefit from the savings of quantities and that such a refinery possesses advanced technology capable of processing heavy crude on According to global standards and in line with the increase in global demand.

Iraq is perhaps the only oil-exporting country in the world that does not own a single tanker specialized in transporting crude oil to global markets, and all that the Iraqi Oil Tanker Company owns is (4) small-sized oil product tankers with a total tonnage of (53) thousand tons only.

It is equivalent to only 3.5% of that company's capacity in the seventies when its total capacity reached 1.5 million tons.

Therefore, Iraq today is exposed to large financial losses due to what it pays for transporting Iraqi oil to foreign markets on board foreign tankers.

Therefore, it is very important to strive to build a new fleet of national oil tankers to achieve and maximize financial savings (Ibid).

The challenge of producing or importing gas is as follows: According to the most recent statistics from the Ministry of Oil, in the month of March 2020, the country's oil production reached a record high. Iraq's natural gas connected with oil output reached 2,674 million cubic metres per day (mqmq) (million standard cubic feet per

day) In Iraq, 1460 mcm of it was burned, resulting in a rate of burning of 54.6 percent, which was the highest in the world. Only 1217 million cubic metres of dry gas and 6324 tons/day of liquid gas are produced, whereas Iraq imports approximately 14 million cubic metres of dry gas (490 million cubic metres of liquid gas), which is used in the production of electricity and costs the country more than one billion dollars per year.

Therefore, the oil policy in Iraq should aim at reducing burned natural gas, investing it and manufacturing it to produce gas products to achieve self-sufficiency and export the surplus of it abroad (Fabio Ballini, 2017).

3.1 Solving the Problem of Corruption in the Oil Sector

(OAPEC, 2010) can be referred to through the following;

- A. Oil smuggling: Oil smuggling is one of the biggest challenges facing the Iraqi economy at the current stage, which is carried out by organized networks, some of which are rooted in their work and are widespread in circles dealing with the oil trade and transport.

The smuggling of large quantities of Iraqi oil to neighboring countries increases, as it reached about 93 thousand barrels per day.

It increases at a value of two billion dollars annually.

As Basra Governorate witnesses smuggling of more than 40 thousand barrels of oil per day, and hundreds of tankers loaded with crude oil go from Iraqi oil areas to the border outlets Land and sea through the ports of Al-Faw, Khor Al-Zubair, and Abu Flus; Crude oil is loaded onto ships without official papers.

About 23,000 barrels per day of oil are smuggled from the governorates of Salah al-Din and Nineveh from the Najma and Qayyarah fields.

About 30 thousand barrels are also being smuggled from Kirkuk fields loaded with at least 150 oil tankers.

According to the head of the Board of Financial Supervision, "one of the things that has been monitored is the great disparity in the delivery of oil and derivatives, whether for internal use or export, due to the loss of oil for equipment, the smuggling of which is the result of a person being destroyed by another person." Alternatively,

the oil derivatives for large distances and there are no guards covering them, and therefore there are points where the pipeline is perforated and the oil or derivatives are withdrawn and transported by tankers. Another way in which oil smuggling is carried out is through citizens leasing agricultural land or owning it through a contract with the Ministry of Agriculture without referring to the Ministry of Oil, and it appears that it contains oil prohibitions.

According to the annual report, which appears in the first chapter of the Board of Supreme Audit in 2019, most of the measurement systems at consumer sites for crude oil from the strategic line under the responsibility of the Basra Oil Company do not meet the national measurement regularity specification, and most of the counters and calibrators for consumers are out of date.

B. Oil contracts: After the collapse of economic structures, including the infrastructure of the Iraqi oil sector, the US occupation authority awarded Halliburton Energy, the largest energy services company in the world, the largest percentage of contracts (60%) without bidding.

In 2004, the Gulf Squad, a coalition of companies between the American Parsons and the Iraqis, awarded an unlimited delivery contract with an unlimited quantity, with bonuses being granted for an additional cost of \$ 800 million in order to ensure the continued operation of the oil sector infrastructure in Iraq. .

British investigators uncovered bribes of at least 25 million dollars to win oil deals in Iraq.

Two former Ona Oil executives have been charged with conspiring to provide bribes to secure contracts to supply three marine floating systems between 2005 and 2011.

The Integrity Commission in Iraq uncovered corruption in a contract concluded between the state-owned Basra Oil Company and two international companies to buy three loaders.

The contract concluded between those parties provides for the purchase of loaders with a total value of \$ 126 million, while their real price does not exceed \$ 40 million.

A report by the British Fraud Office revealed that investigations are still underway in cases related to the British company Petrofac for Petroleum Services, where the

former head of the sales department, David Lukin, was charged with charges related to bribes and corrupt offers to obtain oil contracts in Iraq amounting to 730 million dollars, as the company paid About \$ 2.2 million to two agents to obtain a contract worth \$ 329.7 million from engineering, supply and construction contracts in the first phase of the Badra oil field project in Iraq in February of 2012. The company paid \$ 4 million in bribes to obtain extensions to a contract related to operation and maintenance in the Al-Faw plant project for the years 2013, 2014, and 2015, worth approximately US \$ 400 million for Petrofac.

Petrofac has obtained many contracts in Iraq, including a contract worth 370 million dollars from the Basra Oil Company to expand the processing facility in the Majnoon oil field. In addition, another contract worth 160 million dollars from the Basra Oil Company for the Iraqi crude oil exports expansion project.

Petrofac announced in July 2017 that it had obtained a contract extension with a total value of more than \$ 100 million to manage construction, engineering, commissioning and start-up services for two international oil companies in Iraq.

The company also obtained a contract worth \$ 500 million that includes managing and implementing a number of construction projects in the Rumaila oil field.

The contract signed between the Ministry of Oil and the Arab Maritime Company in 2018 caused a waste of \$ 17 million by supplying the company with subsidized fuel oil. The contract includes the leasing of tankers and the use of berth 13 in Khor Al-Zubair and the contract grants concessions and monopoly on the transportation of products and oil trade to a foreign company at the expense of Iraqi companies.

Some oil companies exploit secondary contracts to obtain more money and by illegal means. For example, the two Chinese companies in Tarjina and Sinoc, investing in the licensing fields in Maysan Oil Company, sold part of their monthly share of gas oil, determined at the official price of (400 dinars/liter) to the secondary companies.

The contracting party with it instead of being supplied by the Oil Products Distribution Company under a fundamental contract at the commercial price of (750 dinars / liter). The damage amounted to 13.536 billion dinars in 2014 and 2015.

The problem of the relationship between the center and the region:

The issue of the oil and gas sector is very important for both the federal government

and the region in terms of political stability, national unity, economic development, and enhancing transparency. As the disagreement in the interpretation of the articles of the constitution regarding the management of the oil and gas sector led to the failure to unify the oil and gas policy between the two sides and thus to the weakness of coordination between them, and this contributed to the damage in the contractual, production and marketing aspects.

In addition, the federal government's lack of knowledge of oil production in the Kurdistan region led to a lack of clarity and accuracy of the amount of oil produced in Iraq by OPEC or international institutions.

In addition, often these figures are less than the actual production or export to Iraq.

This policy has weakened Iraq's position in OPEC, and damaged its interests, in addition to bearing any amounts of cuts in oil production determined by OPEC agreements.

The absence of a unified marketing policy between the federal government and the region reduces the importance of the region's oil and its value in global markets, and that the flow of large quantities of it to the European market may negatively affect the value of Iraqi oil in that market.

It is possible to solve this problem through the official recognition by the Iraqi government of the contracts it signed with Kurdistan with foreign companies. Its amount is 57 contracts, in return for the Iraqi government will bear the debts resulting from these contracts, provided that the region hand over the management of its oil sector and that Sumo would export the region's oil as it exports oil.

Of the other governorates, in addition to the necessity of handing over the region to all its other revenues in exchange for its share in the budget.

3.2. Future Export Capacity of Natural Gas in Iraq

Natural gas is characterized as the cleanest and lowest-emitting fuel, and it is an important source of thermal, mechanical, and electrical energy in the transport, industry, electricity, and housing sectors.

Aside from being a raw ingredient for the petrochemical industries, it is also used in the production of insecticides, agricultural production products, and protein

materials.

Therefore, gas represents the most important alternative energy source for oil, as it contributes about a quarter of the energy consumed in the world.

Iraqi oil production began on the commercial level in 1927 when oil flowed from the Baba Karkar field in Kirkuk, and since that time, the associated Iraqi gas has been burning in waste, and many gas wells in some fields, including Kormor, Chamchamal, and Khushm al-Ahmar, were closed (Neshat, 2018).

The interest in using natural gas began in a limited way in the late 1950s. However, the widespread interest in exploiting and manufacturing natural gas did not start in Iraq until the end of the seventies.

Although Iraq has a tremendous wealth of natural gas associated with the production of crude oil and free gas in terms of the large volume of proven and potential reserves, the marketed natural gas production is not commensurate with the total production of natural gas and is not commensurate with the large reserves that Iraq possesses.

As well as the terrible backwardness that the gas industry suffers from in Iraq and its low ability to convert natural gas into gaseous products that enhance the added value of this industry and the momentum of other industries and sectors (Ibid).

Because of the recent developments in the oil industry, including the gas sector, the partnership contract was signed between the South Gas Company, Shell, and Mitsubishi. In the licensing rounds, the three gas fields (Siba, Mansouriya, and Akkas) were transferred to a coalition of foreign companies.

It is hoped that the gas industry in Iraq will witness great development during the coming years.

In a direction that will not only meet the requirements of domestic demand, but also create a surplus intended for exports.

There will be great development during the coming years.

3.2.1 The economic and geological indicators of natural gas in Iraq

1. Confirmed Reserve:

Iraq's proven reserves of natural gas amounted to 3170 billion cubic meters in 2009,

and it has not changed since 2000, ranking fifth in the Arab world, with a percentage of 6% of Arab reserves, 3.4% of OPEC reserves and 1.7% of global reserves of natural gas in the same year. The Iraqi reserves of natural gas include about 630 billion cubic meters of free gas, 300 billion cubic meters of gas (caps), which is a gas covering the oil layer in some oil fields, and 2240 billion cubic meters of associated gas.

In other words, the associated gas with oil acquires about 70% of the Iraqi reserves, 20% of the free gas and 10% of the hat gas. Most of the associated gas and cap gas is found in the Tertiary Formations in northeastern Iraq and the Paleozoic rocks in western Iraq (OAPEC, 2009).

The share of the southern region of the reserves and most of it from associated gas constitutes about 60%.

As for the remaining 40%, it is found in the northern region and most of it is in the form of free gas that is available in independent gas fields or in the gas domes of the oil fields.

There are ten free gas fields in Iraq, five of which are located in eastern and northeastern Iraq, namely: the Kur Mor, Jammal, Khashm al-Ahmar, Jeriya Gika, and Mansuriyah fields, and contain between them about 11 trillion cubic feet (about 300 billion cubic meters) of the fixed reserve.

The Saba field (30 kilometers south of Basra) and the Akkas field (in the Western Desert near the Syrian border) each contain a little more than two trillion cubic feet (about 100 billion cubic meters) of proven reserves each (Zaini, 2010).

Regarding Iraq's potential and undiscovered gas potential, it appears to be very large and is estimated at about 332 trillion cubic feet (9.3 trillion cubic meters), of which 164 trillion cubic feet (4.6 trillion cubic meters) are believed to be in the form of free gas, meaning not associated with oil. While the remainder of about 168 trillion cubic feet (4.7 trillion cubic meters) is associated, gas (associated gas) or dissolved in Iraq's potential oil reserves (not yet discovered) estimated at 240 billion barrels.

About 83% of the associated gas is located in the southern oil fields, while the rest (17%) is located in the northern and central fields (Ibid).

The extreme deviation in this distribution is justified by the fact that about 71% of

the proven oil reserves are located in the south, and the percentage of associated gas extracted oil (gas/oil ratio) in the southern fields is about twice that of the northern and central fields.

The gas in the southern fields is sweet (contains very small amounts of sulfur) compared to the sour northern gas, which contains about 7.2% of hydrogen sulfide (H₂S).

All but one of the gas caps are located in the northern and central fields, and the only gas cap discovered in the southern fields is in the laurel layer of the Majnoon field. 94% of cap gas reserves are located in five northern fields, which are Jambour, Ajil, Bay Hassan, Khabaz, and Kirkuk (Middle East Economic Survey, 2019).

Cap gas is produced as an additive or supplement to associated gas used in electric power generation and in the industry when needed, as well as to meet the peak load in electric power generation. Given that most of Iraqi gas is of the associated type, gas production in Iraq is mainly affected by oil production (Ibid).

3.3 Production

The rate of gas production in Iraq - and almost all of it from associated gas - during the five-year period 2003 - 2007 reached about 1,115 mug gams per day (11.4 billion cubic meters per year), about 64% of which is about 700 million cubic feet per day, which increased to 16,577 billion cubic meters.

Natural gas is produced from two main regions, namely the southern region and the northern region.

Natural gas production has witnessed changes similar to changes in oil production, given that most of the quantities produced from natural gas are from the associated gas with oil (OPEC, 2009: 33).

Most of the produced natural gas was unused due to the lack of facilities to process it, and at the beginning of the 1980s, the South and North Gas complexes were built and operated, which led to an increase in the proportion of investment in natural gas production from 11.4% in 1980 to 88.7% in 1998.

At the same time, the production of marketed natural gas increased from 1.3 billion cubic meters / year to 5.5 billion cubic meters between 1980 and 1998, but 2002

witnessed a decline in the production of marketed natural gas to 2.36 billion cubic meters and then continued to decline to 1 billion cubic meters in 2004.

The proportion of natural gas investment decreased to its lowest level because of the stopping of gas processing plants affected by the recent events in Iraq since 2003, but it rose slightly because of the rehabilitation of some facilities and natural gas complexes (Ibid).

Iraq is marketed about 1.1 billion cubic meters/year in 2009, which is equivalent to 0.04% of the total natural gas market in the Arab world while the gas burned has reached 6.984 billion cubic meters, and therefore Iraq has ranked among the third top 20 countries in the year in terms of gas-burning rates.

As for the wasted gas, it rose to 4.447 billion and the re-injected gas amounted to 986 million cubic meters per day in 2009. This means that the marketed gas constitutes only 7% of Iraq's total natural gas production, which reaches 16.577 billion in 2009.

During 2009, Iraq produced 30 thousand barrels of oil equivalent/day of natural gas liquids from natural gas processing units, which is a low figure when compared to Arab production, which totaled 2728 barrels.

This means that Iraq's production of gas liquids represents only 1.1 percent of Arab production, indicating the extent to which the Gas Liquefaction Industry in Iraq is technologically behind the times (OAPPEC, 2010).

Iraq relies moderately on natural gas to cover energy requirements, as the share of natural gas in Iraq is about 15% of energy use.

Iraq consumes about 88,000 barrels of oil equivalent / day.

This figure seems low compared to some Gulf countries, such as the UAE and Saudi Arabia, which consumed about 1080 and 1145 barrels of oil equivalent/day in 2009 (Ibid).

3.3.1 Natural gas processing companies in Iraq

There are two complexes for processing and processing natural gas in Iraq, the first in Kirkuk and the second in Basra:

1. North Gas Company:

The company's immediate goal is to process the quantities of raw gas associated with

the production of crude oil in the northern fields and convert it to its derivatives from the following products: -

- Dry gas: it is used as a clean and easy-to-use fuel in power plants, cement plants, and many industrial companies in northern and central Iraq, and is used as a raw material in fertilizer, petroleum and chemical plants.
- Liquid gas: it is used as fuel for domestic purposes for local consumption and export.
- Gas and natural lean: It is used as a fuel after being improved or injected with crude oil to improve its specifications.
- Sulfur: It is used as a raw material in a number of local industries, and the surplus is exported outside Iraq (The official website of the North Gas Company).

The design capacity of the North Gas Company is 15 million cubic meters/day of sour natural gas, and it consists of two similar power production lines.

The construction of the complex was completed in the mid-1980s and aims to produce approximately 8-11 million cubic meters per day of marketed dry natural gas, 735 thousand tons per year of propane gas, 448 thousand tons of butane gas, in addition to 384 thousand tons per year of Natural gasoline and 528 thousand tons per year of sulfur.

The complex includes eight stations for compressing natural gas and transporting it from the production stations to the gas plant through a pipeline network of about 250 km (OAPEC, 2009: 110).

1. South Gas Company

The South Gas Company was established in 1979, and despite the growing importance of natural gas as an important source of energy, the gas sector did not receive enough attention, as the volume of (not invested) gas burned reached large quantities reflecting the great waste of this wealth, and a large part of that is due to slow maintenance operations.

The events of 2003 caused significant damage to the gas plants in Basra, resulting in a reduction in production capacity to less than one-third of what it had been in the previous decade, according to official estimates. Basra now has 29 gas isolation

stations, which is an increase from the previous year.

The South provides gas at a rate of 292 million standard cubic feet (refined) per day, according to the International Energy Agency (RTI, 2008: 174). The total design capacity of the South Gas Company is about 29.7 million cubic meters per day.

The company includes three main units for the removal of natural gas liquids. (NGL) The first unit is located at the North Rumaila gas plant, and liquids are pumped south to the Khor Al-Zubair gas complex to complete its treatment stages and separate its components. The Khor Al-Zubair gas plant contains the second and third natural gas liquefaction units, as well as the fluid fractionation units for the production of propane, butane, and naphtha, and the plant processes the production of natural gas associated with the southern Rumaila field and other producing fields and adjacent to it (Ibid).

The company also includes refrigerated warehouses for storing propane gas and tanks for storing butane gas as well as for naphtha.

Within the company's facilities, a port for exporting these products is located on Khawr Abdullah in the Arabian Gulf.

The natural gas produced from the South Gas Company is marketed to the Southern Gas Transmission and Distribution Network, and a mixture of propane and butane is pumped into the LPG network, and naphtha is pumped to the oil refineries in Basra (OAPEC, 2010: 112).

Basrah Gas Company was established in 2010 with the participation of the South Gas Company by 51%, Shell companies by 44%, and Mitsubishi by 5%.

The project includes a unit of liquefied gas production with a capacity of (600) standard cubic meters per day, which is fully funded by the foreign partner (Basra Gas Company site).

Shell and South Gas Company began working on a variety of projects to produce dry gas that could be used to create electricity.

As a result, the amount of energy derived from the network is reduced, since is the extraction of more liquefied petroleum gas, as Iraq now imports 1,200 tonnes of gas each day. 4000 tonnes of liquefied petroleum are burned each day.

In light of these developments, experts believe that gas projects have become a

strong priority for the Iraqi government, to take advantage of the huge gas wealth that Iraq sits on, which is no less important than its oil wealth,

According to experts working in the gas industry, Iraq is capable of producing more than 6000 million standard cubic feet of associated gas. that is sufficient to cover domestic consumption and export, but current production does not exceed 1000 million standard cubic feet, of which about 700 million cubic feet are burned daily in the Basra fields (Zhukov S V and Kopytin I A, 2017).

Iraq faces a real problem now due to the burning of Iraqi gas, which causes the accumulation of 20 million tons annually of carbon dioxide emissions, equivalent to 3 million car exhaust emissions.

While Iraq still imports cooking gas from abroad and is unable to generate electric power from gas, due to its adoption of traditional alternatives such as diesel.

The most important problems facing natural gas production in Iraq can be identified as follows:

1. The decrease in the feed gas rates to the North Gas Company and the South- Gas Company, for example, the planned production capacity of the South Gas Company is 450 muqmq / day, while the actually received feeder quantity is 292 muqmq / day on average, and thus the deficit in the planned feed is about 158 muqmq / day. A day on average (Ibid).

This affects the amount of liquid gas produced daily from 2500 tons / day to 956 tons / day, i.e. a deficit of (1544) tons/day.

This deficit causes a severe crisis for gas prepared for daily consumption, at a time when large quantities of natural gas associated with oil are being burned.

1. The companies cut off the constant electricity supply and the lack of sufficient electrical generators to operate the plant, which reduces the amount of production planned.
2. The frequent mechanical and electrical breakdowns and the lack of spare materials at the required level, which is reflected in the deterioration of the periodic and annual maintenance operations due to the aging of devices and equipment as their useful life has ended, which necessitates updating the devices and equipment and equipping the company with advanced

technologies.

3. Disruption of the security situation negatively affects the stability of workers and their continued presence during work.
4. Failure to repair the damages to some important equipment or rehabilitate new systems due to the reluctance of foreign companies to work in Iraq.
5. The interference of external parties that do not work in the Ministry of Oil, in the work of the two companies, which hinders the production process and administrative organization.
6. Developing a plan to boost output in the two enterprises while also keeping up with modern technologies is not feasible at this point in time. According to Elvidge (2018), a new gas plant must be built to process the gas produced from the Southern Oil Company's fields without the need for new advanced production units that operate with modern technologies that meet the needs of the market and consumers in the future.
7. The workers of the two companies rarely receive developmental or qualifying courses for their workers outside the country, as the qualifying and development courses established in Iraq are almost non-existent, despite the actual need for these courses to raise the efficiency of the employees' performance and increase their technical and administrative expertise.
8. There is disguised unemployment that exceeds 40% of the workers due to the imposition of appointments for workers by the Ministry of Oil without the actual need of the two companies, which constitutes a waste of expenses (RTI, 2008: 176).

3.3.2 Natural gas pipelines in Iraq

Pipeline transportation is one of the important and vital means of road transportation in the world, due to its well-known advantages, such as lower transportation costs.

Pipelines specialize in transporting energy sources such as oil, natural gas, and liquefied gas.

Human use of pipelines to transport water goes back a long time, but the use of this method did not gain its great fame until after the discovery of oil commercially in the

world and the increase in the demand for alternative energy sources.

Then the trend towards using natural gas as a main source of energy besides oil began.

For the first time to transport gas in 1885, the first long-distance gas transmission line between Pennsylvania and New York was established, and it was 140 km in length and 20.32 inches in diameter, then pipelined gas transportation spread globally with a capacity commensurate with production quantities and the breadth of markets.

A network of tubes known as collector tubes transports gas from wells to gas processing equipment, and then the processed gas is piped to large and small cities and villages.

The gas reaches consumers through a network of distribution lines (Hafez, 99, 2010).

Gas distribution lines are of two types: main service pipelines and single service pipelines. Main pipelines are large and connected to transmission pipelines, while individual service pipelines are smaller and branching than main lines. Individual service lines carry the fuel that public service companies market to homes, offices, factories, and any other consumers. As for Iraq, the project to transfer gas from Kirkuk to the Debs power station, which was completed in 1959, is considered the first gas pipeline network in Iraq, which has grown with the development of the oil industry.

The length of gas pipelines reached 4,2989,4 km in 2009 (Iraq, Ministry of Planning and Development Cooperation).

The network of natural gas transmission pipelines in Iraq is concentrated in the northern and southern regions, in which the processing plants operate as hubs for the gas network throughout Iraq, and have been partially operating since the events of 2003 due to the entrenched problems of pressure and the frequent exposure of the lines to sabotage.

The construction of the network began in 1986 and the first phase was completed in 1988 with the extension of a 24-mile line, a 48-inch diameter, with a capacity of 240 million cubic feet per day, to transport dry gas to Baghdad and to the power station in Al-Musayyib.

The second phase was not implemented because of the 1991 war. gas pipelines were

supposed to be extended north to Baiji and Baghdad, then to the fields of the northern region and the Turkish borders, and the Iraqi Ministry of Oil plans to complete this phase and establish a line of 199 miles in length and 42 inches in diameter to link the northern and southern gas collection centers (Samir, 2008: 141-143).

Given that most of Iraqi gas is of the associated type, gas production in Iraq is mainly affected by oil production.

That producing one barrel of crude oil would produce with it an average of 600 cubic feet of associated gas.

The plan of the Ministry of Oil includes raising production to 6.5 million barrels per day by the year 2015 and based on the gas/oil ratio calculated above - assuming it will remain constant in the range of 600 cubic feet/barrel - the volume of associated gas produced will be about 3.9 billion standard cubic feet per day (40 billion cubic meters per year) in 2015.

No free gas field has been previously developed, except for the Kur Mor field, based on a service contract between the Kurdistan Regional Government on the one hand, and the Dana Gas and Crescent Oil companies, on the other hand, the Kor Mor field has been rehabilitated and the Chammal field is currently being developed.

The contract requires gas production from these two fields, processing it, and then transporting it for the purpose of supplying the two power stations in Erbil (500 MW) and Sulaymaniyah (750 MW).

The third licensing round will add about 830 million cubic feet of free natural gas per day (Ibid).

In addition, if we add to it the production of other fields of free gas, then Iraq's production of free gas may reach 1.1 billion cubic feet per day in 2015. Thus, the total production of Iraq's natural gas, in both its associated and free forms, will be about 5 billion cubic feet per day.

In such cases should not resort to cap gas to fill the shortage or to meet the needs of peak load as is happening at the present time, since the continuous consumption of hat gas will lead to a decrease Reservoir pressure, which negatively affects oil production. With regard to the domestic demand for natural gas, it will rise to about 3

billion cubic feet per day by the year 2015 (Ibtisam Kamal, 2018).

Therefore, there will be a surplus of natural gas prepared for export abroad of 2 billion cubic feet per day, which can be exported from the following outlets:

1. Gas pipeline between Iraq and Kuwait

The project was established in 1986 and was put into operation on 9/12/1986 to export the associated natural gas produced from the Rumaila fields. It consists of:

- A 100 km long gas pipeline extending from North Rumaila to the BC 130 station in Kuwait
- Tube to transport condensate length of 100 km
- Condensate pumping stations with measuring and controlling devices

The rates of natural gas and condensate supply were distributed between 4.25 - 5.66 million cubic meters of natural gas per day and 200 - 600 cubic meters of condensate per day (OAPEC: 115).

It is hoped to rebuild and operate this project, which has been suspended since 1990 especially that the gas pipeline is in good condition and needs several months.

The pumping stations in the Iraqi part are not repaired, meaning that the infrastructure is fit and ready for work, for pumping and import, and it is possible that the work will be completed in two phases.

It is expected that the first phase of the project will start importing Kuwait for 35 million cubic feet of Iraqi gas per day, if the old equipment and pipelines previously existing between the two countries will be used after rehabilitating and maintaining them and ensuring their operational capacity.

In the second phase, 200 million cubic feet per day will be imported by building new services and pipelines with a diameter of 36 inches and a length of about 57 km in Iraq and 38 km in Kuwait (OAPEC, 2006 31).

2. The Iraqi-Syrian line

It is expected to start soon, laying pipelines to transport natural gas from Iraq to Syria, with a capacity of 6 million cubic meters per year during the first phase, which will rise to 12 million cubic meters during the second phase (ESCWA, 2009: 14).

3. Connecting Iraq to the Arab Gas Pipeline

The project aims to deliver Iraqi gas to Turkey via Syria, so that the project will be implemented in two phases, with a capacity of 8 billion cubic meters per year, increasing to 15 billion cubic meters in the second phase. Knowing that the studies indicate the feasibility of the project and that it can be implemented at a cost of \$ 968 million (OAPEC: 29).

4. Nabucco gas line

It is a proposed pipeline to transport natural gas from Turkey to Austria, via Bulgaria, Romania and Hungary.

The line will be extended in Erzurum in Turkey and to Baumgarten Andermarsh, which is the main natural gas center in Austria.

it will be about 3,300 km in length and it is expected to start its implementation this year (2011 m) and it is expected to be completed in 2014 and its initial annual capacity will be between eight and ten billion cubic meters. Of gas is expected to cost about 10 billion dollars. Seven companies will participate in its implementation, including four European companies, one Turkish company, and two Emirati companies.

According to some, this pipeline is an attempt to divert the sale of natural gas to Central Asia away from transit through Russia.

This project supports the European Union and the United States, which are a way to reduce Europe's dependence on Russia for energy. Russia describes the Nabucco gas pipeline project as an enemy project, as it is the target of it (Shikali,2010).

The Turkish Pipeline Company (BOTA) considered that transporting natural gas from the Kurdistan Region of Iraq would enable the Nabucco pipeline project to transport gas to Europe by the year 2014.

In view of the region's large reserves, the gas produced there will be of great importance and will play an important role in launching the Nabucco project, which is a pipeline to transport gas through Turkey to Europe.

The Austrian (OMV) and Hungarian (MOL) companies, two of the first contributors to the pipeline, joined the first Tuesday, in a project to pump gas from the Kurdistan Region to Turkey and then to Europe.

The region would provide about 1.5 billion cubic feet per day for the Nabucco project, which is sufficient to supply the first phase (Information Office of the Patriotic Union of Kurdistan, 2010).

5. Gulf gas pipeline

Gas pipeline projects between the countries of the Gulf Cooperation Council include four projects to supply the United Arab Emirates, the State of Kuwait, and the Kingdom of Bahrain with natural gas produced by the State of Qatar, in addition to supplying the United Arab Emirates with Omani gas.

Iraq can export natural gas to the Arab Gulf countries, especially Kuwait and the United Arab Emirates, the first through the Iraqi-Kuwaiti line and the second by extending a pipeline to transport natural gas between Basra and Dubai for a distance of 800 miles and a diameter of 36 inches or 56 inches, which is cheaper than transporting it in liquid form. By special vectors (Ibid).

The pipeline from Iraq could connect to the Dolphin Project pipeline in the UAE, and this project, which supplies the United Arab Emirates and the Sultanate of Oman with Qatari gas, may be the core of the gas distribution network inside the Arabian Peninsula.

6. Carriers

Iraqi liquefied gas can be exported through the floating terminals in Basra, which is the main port for the export of crude oil. Iraq can export two million tons annually of liquefied natural gas through liquefying the gas and transporting it by private tankers (Ibid).

3.3.3 The challenges facing the export of Iraqi gas

- A. The necessity for pipelines to pass through the territories of some countries and the political and legal problems they raise, which requires the conclusion of regional or international agreements.
- B. The need for large investments to extend pipelines
- C. Pipeline protection is a complicated and expensive process
- D. The necessity to sign long-term contracts between Iraq and gas importing countries or countries whose territories pass gas pipelines

- E. The need for accurate studies to know the required amount of gas
- F. How to determine the price of gas and how to pay for it
- G. Pipeline supervision and maintenance (Mills, Et al., 2020).

3.4 National direct investment method

Before entering into this investment method, it is necessary to review the development of the volume of reserves and production of Iraqi crude oil: many experts confirm that Iraq possesses proven oil reserves of 115 billion barrels in 2008 (Arab Economic Report, 2008).

In addition, about 220 billion barrels of uncertain reserves, which represent 10% of the world has proven oil reserves and about 21% of OPEC has proven oil reserves. Until 2001, Iraq was ranked second in proven reserves after Saudi Arabia, but despite the increase in reserves in 2008, Iraq declined to Fourth place after Saudi Arabia, Iran and Russia. Another study also indicates that the proven reserves of Iraq currently reach (134) billion barrels, and experts indicate that Iraq has more than 526 oil wells that only exploited 125 wells. Moreover, as the US Energy Information Administration estimated that the uncertain oil reserves in Iraq reach (400 billion barrels) (Al-Maamouri, 2007).

Iraq is considered one of the least oil-explored countries among the oil-producing countries, and many explorations are expected to be carried out to convert a large proportion of potential reserves to proven. Iraqi oil is characterized by the low cost of extracting one barrel, and it does not exceed 5.1 US dollars. In the North Sea, the cost is around 14 dollars, in Texas fields about 29 dollars, and 11 dollars in European fields.

The quality of Iraqi oil is from the light oil desired in the industrial field, and it is characterized by a high life span for oil reserves, as this age is estimated for Iraq to be about 164 years in 2006 (Ibid).

As for crude oil production in Iraq, it reached about 6.2 MB in 1980 per day. It deteriorated to 730.0 mb / day in 1995, then to 8.2 mb / day in 2000, and about 25.1 mb / day in 2006 and 3.2 mb / day in 2009. and in any case it did not increase The volume of crude oil production in Iraq reached what it reached in 1979 when it

reached about 5.3 mb / day, while the exported quantities of oil ranged between (2) million/barrels /day in 2003 and 9.1 million barrels / Day of 2009 (Ministry of Finance, Accounting Department).

Crude oil production suffers from many problems, including external ones related to international sanctions and the embargo on the supply of spare tools and the import of advanced technology and domestic ones, but they also belong to the first and among these problems:

- The national exploration companies have difficulty purchasing and leasing seismic teams
- Drilling projects failed to achieve most of their targets
- Failure in projects to increase export capacities and rebuild export facilities
- The same applies to the pipelines that transport land, mostly closed, passing through Syria and Saudi Arabia
- The failure of export port projects due to the lack of supply of equipment and pieces of dust
- Lack of means and equipment for removing water from wells and many of them have stopped production
- Most of the currently producing fields need huge investments to rehabilitate and repair them in order to resume production from them (Ibid).

The method of national investment in developing the oil sector depends on national technical cadres with high experience in exploration, drilling and production affairs, as it was based on this formula after the nationalization decision in 1972, and an example of the ability of the national technical cadres when the Iraqi lands that were previously seized were nationalized. Companies according to the Privileges Law were not exploited, as the lands were nationalized according to Law 80 of 1961, and wells were discovered and dug by national cadres in cooperation with Russian and French companies.

The West Qurna field was also exploited and invested in it from the stage of discovery to production and maintenance by technical and administrative personnel after the Russian company abandoned its development in the 1990s, whose

production capacity was estimated at (450) thousand barrels / day, and this capacity was increased to (750) thousand Barrels / day after the development, as the reserves of this field reach (20) billion barrels, as well as the Majnoon field in Basra.

National investment may face difficulties related to the issue of equipping technology and advanced devices, as well as the difficulty of dealing with advanced technology, and this can be overcome by contracting with specialized foreign companies to provide the technical expertise that Iraq needs in this field to introduce modern technology and expand the sending of these cadres in training courses abroad, bearing in mind that these national cadres are currently outside the homeland due to the abnormal political and security situations.

If the real will to rebuild, rebuild and develop the national economy is present, it will be the first to contribute to the development of the oil sector (USAID, 2006).

3.4.1 Investment method according to production sharing contracts

The production-sharing contract means: Under the terms of this agreement, the company will provide the capital required for the investment.

It was established by law or agreement that foreign businesses were granted ownership of oil reserves in exchange for compensation from the government.

However, in the case of partnership contracts in the oil production industry, the state retains legal ownership of the oil.

It receives compensation for its investments by taking a share of the produce that has been agreed upon with the state, with the proportions subject to negotiation.

It is possible to invest in oil reserves using this strategy while maintaining legal ownership of the assets, but foreign firms are in charge of determining the amount of output. **Conditions of contract in production sharing contracts**

- That the contracted oil fields be small in relation to the total oil reserves
- That the production costs in it are very high for many reasons
- The prospects for exploration are uncertain
- It may be that some countries that anticipate this method of investment are not countries that produce commercial crude oil and do not have huge oil reserves

- High risk factor due to difficult geographical nature or complex geological formations containing crude oil

This investment method (PSC) did not work with the main oil-producing countries in the Gulf Cooperation Council countries, at a time when there are alternative investment methods to develop oil fields, less costly and more effective, such as national direct investment, joint investment projects and technical service contracts.

Among the criteria for oil fields and their distribution according to reserves and production, it may be appropriate to allocate a specific investment method for each field according to the technical and economic feasibility.

In a way, that preserves the survival of the oil wealth as the property of the Iraqi people and in line with the principles of the Iraqi constitution. (NDS) issued by the Ministry of Planning in 2006, as well as the new draft oil and gas law was promoting and inviting international oil companies to invest in the Iraqi oil sector according to production-sharing contracts under the name of development and production contracts.

3.5 Principles of production sharing contracts

At the beginning of production, the government receives a continuous share of oil in return for what is called rent or ownership rights, which is a fixed percentage of production.

- The contractor (the foreign company) has a share of oil production and its upper limit is fixed in the contract with the aim of recovering investment expenditures in investigation, exploration, and production operations, as well as to cover operational expenses and this share is called the oil cost and continues to receive it to cover investment and then operational expenses.
- The remainder of the produced oil is called the oil profit, and the profit oil is divided between the government and the contractor according to proportions specified in the contract, which are considered profits from the project, but this depends on the negotiating ability of the state, the nature of the oil field, and the size of the required investment.
- The contractor (company) pays the government a tax income on its share of

the profit and the remainder is the net profit of the contractor

- The agreement lasts between (25-40) years, and the period may not be fixed
- The determination of prices and percentages depends on negotiations between the state and the company
- The company sets legal provisions whereby the state will restrict changing tax rates or editing any law that would affect the company.
- Hence, it seems that this method is not suitable for investment in the Iraqi oil sector for the following reasons:
- Iraq has huge and proven oil reserves that have reached more than 115 billion barrels, and it is uncertain that may reach 240 billion barrels.
- The costs of producing one barrel of Iraqi oil are the lowest at the global level, ranging between (5.1-5) dollars per barrel, compared to more than 10 dollars per barrel in the North Sea and more than 50 dollars for US shale oil.
- The geological layers in which the crude oil and gas fields are located are close to the Earth's surface and most of them are of high economic viability
- No element of risk or risk
- Most of the oil fields in the tables (6, 5, 4) are partially productive and developed fields, and it is not permissible to give them to foreign companies to be developed according to the PSC.
- Even with regard to Iraqi lands that have not conducted crude oil exploration surveys in them to estimate the size of the reserves with certainty, it is not permissible to give them to companies according to the production-sharing method, because the probability of discovering reserves in them reaches 100% and at profitable commercial rates (Al-Ali, 2014).

3.5.1 Investment method according to technical service contracts

According to these contracts, the state makes decisions, carries out works, and receives all oil revenues. As for the role of oil companies, it does not exceed renting their technical services for a fixed fee in the contract.

The contract also includes the supply of spare parts, modern technology, and

expertise that the state needs.

This investment method has been applied since the nationalization of oil in the seventies and is currently being implemented in most of the Gulf Cooperation Council countries. Studies have shown that the technical and financial gains and benefits from this method were doubled.

The National Development Strategy "NDS", issued by the Ministry of Planning in 2006, aimed at raising the level of crude oil production to 5.3 m. B / Day, and it was promoting inviting foreign companies to participate in the development of oil and gas fields under production-sharing contracts.

Simultaneously, the proposed oil and gas law for 2006 has yet to be enacted.

It intends to modernise the oil sector with the participation of international and local companies, with the goal of increasing production levels and maximising Iraq's financial income.

It will ensure Iraq's financial revenues, as well as the transfer of technology and the training of Iraqi personnel.

The law provides for granting licenses for oil operations based on production development contracts between the Ministry of Oil and foreign companies.

As for the fields that the law talks about, the fields currently product are among the giant fields with reserves of more than 86 billion barrels, which are about 21 fields and constitute 74% of (The proven oil reserves.

This law also includes the 64 discovered undeveloped oil fields, whose reserves amount to about 240 billion barrels (Al-Ali, 2014).

3.5.2 Conditions set by Iraq in the investment service contracts model

- Improve production in the short term and raise it 18 months after the contracts entered into force
- The goal of the long-term maximum production that companies reach after 6 years of contract validity, which must be maintained for a period of not less than 7 years
- The companies' share of the service contract is 51% for the state, 49%, and then it became 25% for the state and 75% for foreign companies, in order to

accelerate the period of companies recovering investment and operating expenses.

- The basic level of production in the operating fields will decrease by 5% annually after the companies achieve an increase in production directly as companies receive their wages for the increase in production above the basic level

a. Investment controls in technical service contracts

- The term of service agreements is 20 years
- The maximum production life ppt will be 7 years
- The prescribed period to reach the maximum production is 6 years, after the validity of the contracts, and it may reach 8 years.

b. Method of joint investment between the state and foreign companies

The state, represented by the National Oil Company, and a company or a group of companies from abroad enter into a contract to perform a project with a joint capital, according to this technique.

The two parties reach an agreement on each participant's share of the project capital, with the result that the foreign partner provides all of the necessary expertise to establish, operate, and maintain the project, as well as participate in its management, while the domestic partner provides the capital (Ibid).

The countries of the Gulf Cooperation Council have followed this method in implementing many oil projects, especially in the field of petrochemical industries.

This method has advantages, including:

- The country benefits from the long experience, advanced technology, and the great administrative and technical expertise of the foreign partner
- The state benefits from the foreign partners' markets, as it can oblige the foreign partner to market 50% of the total production in the joint venture in the foreign partner's markets, as the large production capacity that characterizes projects, especially petrochemical projects, may exceed the local market's need.
- Technical and economic feasibility studies and projects can be completed on

time, as the foreign partner cannot expose himself to losses as a result of delay in project implementation.

- The oil industry projects, especially petrochemical, need huge capital, and thus it is possible, through joint investment, to create these funds

It is possible to overcome all cases of financial and administrative corruption, or employment inflation and the disguised unemployment that accompanies the implementation of government projects, through joint management.

In this regard, it is possible to benefit from the characteristics of the Norwegian model in granting licenses and joint projects, which are as follows: (Al-qasem, 2005)

- The contract form shall be joint ventures in which the state is a partner, and this requires the necessity to sign an operating contract with the foreign company on which the tender is awarded
- Before negotiating with companies, the state must implement the following: -
 - It performs seismic surveys
 - Preparing technical and economic feasibility studies
 - Create a template for contracts according to the eligibility criteria for companies
 - Classify fields and configure areas for exploration
- The exploration period is 6 years and can be extended
- The state can decide its share of the project
- The state can diversify national and international oil companies for each project, as each company can provide a different experience for the project
- A country's financial system can impose taxes.
- Some criticisms and reservations about contracts and licensing rounds concluded by the Ministry of Oil can be directed:
 - The licensing rounds and contracts concluded by the Ministry were without relying on an economic and investment strategy with clear objectives
 - Lack of transparency in licensing round agreements with foreign companies, where why is the full texts of these contracts not published?

- The licensing rounds included the current producing fields and the discovered but undeveloped fields, and there are more than 17 developed and productive oil fields that can be qualified by national technical cadres.
- These contracts with companies came in isolation from benefiting from the laws regulating the investment of oil wealth, such as the Hydrocarbon Protection Law 84 of 1985, Law 97 of 1967 and Law 22 of 1997.
- There are no reservations about the prospect of some foreign corporations participating in the implementation of investment contracts. Iraq's political and security situation is dire right now. Large and highly experienced corporations do not usually participate in licensing rounds because they see it as a risk to the safety of their assets and the lives of their affiliates.
- This means that some small businesses with less experience submit their proposals and sign contracts with the risk of noncompliance.
- The best example of this is what happened during the economic blockade in the nineties, and this means a loss of opportunities and high costs imposed by companies in light of an abnormal political and security situation that is not expected from these projects. Major
- The functions and powers of the Ministry of Oil and the Federal Oil and Gas Council appear to overlap and be unclear in the draught new oil and gas law.
- The functions and broad powers of the Council appear to minimize the role of the Ministry of Oil.
- The new law did not mention the issue of the link between the proposed oil resources fund and the future fund.
- It seems that the continued decline in oil prices had great negative consequences on the ability of Iraq to pay the dues of foreign companies, which prompted some of them to try to reconsider the contracts for the purpose of ensuring the payment of their dues or the introduction of other items that would lead to the possibility of mortgaging oil reserves in the future or compromising in State ownership of the oil wealth. Recently, it was negotiated to borrow to meet the companies' dues.

4. APPLIED FRAMEWORK

4.1. Introduction

This chapter serves as a prelude to the next chapter on the statistical analysis of the study variables to reach its results.

This chapter identifies the study population and sample, and the study tool used after calculating its validity and reliability to clarify the possibility of relying on it in the applied study to identify the reality and future of oil and gas management in Iraq, as well as the reality and future of Iraqi Ports Administration.

4.2. The study sample

Since the study deals with the management of oil and gas projects and ports in Iraq, it was natural for the study community to consist of workers in the institutions, facilities and ports related to oil and gas in Iraq.

The workers through distributing an electronic questionnaire form to them, where the number of the study sample members reached 120 individuals after distributing 130 questionnaires to them and retrieving 120 workable questionnaires at a rate of 92.3 %

4.3 Study tool

The researcher used the electronic questionnaire form as a tool for the field study.

The questionnaire included four dimensions:

The first dimension: the reality of gas and oil management and consists of 10 phrases

The second dimension: the future of Iraqi oil and gas management and consists of 10 phrases

The third dimension: the reality of Iraqi port management, the future of Iraqi ports, and it consists of 10 phrases

The fourth dimension: the management of Iraqi ports and it consists of 11 phrases

The researcher relied on a five-point Likert scale consisting of strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1) in answering the questions of the questionnaire as shown in the following figure:

Table 4.1: Five-point Likert scale

Response	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Degree	1	2	3	4	5

4.4 The Validity and Reliability of the Study Tool

The researcher relied on calculating Cronbach's alpha coefficient and correlation to test the validity and reliability of the study tool.

The results were as follows for each dimension of the study.

4.4.1. Reliability (Cronbach's Alpha coefficients)

The stability of the dimensions of the questionnaire was calculated using the Cronbach's alpha coefficient for internal consistency, and the results were as follows.

First Dimension

Table 4.2: Cronbach's Alpha coefficients for the first dimension

First dimension	Cronbach's Alpha	number of items
The reality of managing gas and oil	0.833	10

The previous table showed that the value of Cronbach's Alpha coefficients for the first dimension is 0.833.

That means that there's a high reliability between the items of the first dimension.

Second dimension

Table 4.3: Cronbach's Alpha coefficients for the first dimension

Second dimension	Cronbach's Alpha	number of items
The future of the Iraqi oil and gas administration	0.849	10

The previous table showed that the value of Cronbach's Alpha coefficients for the second dimension is 0.849.

That means that there's a high reliability between the items of the second dimension.

Third dimension

Table 4.4: Cronbach's Alpha coefficients for the first dimension

Third dimension	Cronbach's Alpha	number of items
The reality of managing Iraqi ports	0.837	10

The previous table showed that the value of Cronbach's Alpha coefficients for the third dimension is 0.837.

That means that there's a high reliability between the items of the third dimension.

Fourth dimension

Table 4.5: Cronbach's Alpha coefficients for the first dimension

Fourth dimension	Cronbach's Alpha	number of items
The future of the management of Iraqi ports	0.844	11

The previous table showed that the value of Cronbach's Alpha coefficients for the fourth dimension is 0.844.

That means that there's a high reliability between the items of the fourth dimension.

4.4.2. Correlation

First dimension

Table 4.6: Correlation coefficients between the score for each phrase and the total score of the first dimension

N.	Phrase	Correlation coefficient
1	The Iraqi administration tries to use the invading wealth distribution as required	0.722
2	There is a waste of fact due to the limited capabilities available in optimal use Resources	0.817
3	The Iraqi administration was able to provide very large quantities through A court plan	0.763
4	Improper use of gas and oil management leads to widespread unemployment And increasing economic crises	0.733
5	The licensing tours succeeded in properly investing Iraqi oil and gas within a year of the conclusion of the partnership agreements with the countries concerned.	0.709

Table 4.6: (Cont.)

N.	Phrase	Correlation coefficient
6	The cancellation of agreements with countries that contributed to a low economic situation that contributed to an improvement in the Iraqi income.	0.747
7	Investing 60% of the Iraqi gas means that Iraq heads toward an economy Strong	0.751
8	Building facilities that process the accompanying gas for about two years, and investing the gas fields will ease the invading crisis on Iraq	0.629
9	Oil companies burn about 17 billion cubic meters of The gas associated with the extraction process is a clear waste of the Iraqi economy	0.633
10	The intervention of a neighboring Arab role in providing Iraq with gas will open an Arab horizon and an economic partnership that will improve the Iraqi economic work.	0.724

**Statistically significant at the level of significance ($\alpha = 0.01$)

Second dimension

Table 4.7: Correlation coefficients between the score for each phrase and the total score of the second dimension

N.	Phrase	Correlation coefficient
11	Political conflict is the one that causes the state of economic decline, especially a crisis Iraqi gas	0.736
12	The future of the Iraqi economy suggests a strong economy in case of signing the approval Self	0.614
13	Iraq is the Oqaz field, the largest gas field that is based It has all the facilities of Iraq	0.723
14	The trend toward investments in gas is being sought, especially in light of the increasing financial crisis in the country because of the low oil prices and the spread of Corona virus	0.742
15	Iraq plans to invest 3 billion and 150 million cubic feet of gas in the eastern and southern oil fields of the country.	0.739
16	Partnership, agreements and self-reliance must be built because it is not enough Of the Iraqi economy	0.815
17	Investment is subject to the country's supreme will, so a plan should be drawn up Strategy	0.739
18	Countries that meet with oil and gas should establish genuine partnerships, gain experience, and then become self-reliant in managing the country's projects.	0.615
19	Natural gas is one of the most important alternative sources of energy for oil.	0.736
20	Poor planning, lack of coordination, and lack of investment	0.719

**Statistically significant at the level of significance ($\alpha = 0.01$)

Third dimension

Table 4.8: Correlation coefficients between the score for each phrase and the total score of the third dimension

N.	Phrase	Correlation coefficient
21	Ports of Basra, Faw and other ports	0.762
22	Interest in natural gas projects and port construction has begun since late The 1950s	0.753
23	Projects and their management related to Iraqi ports will further improve Services	0.728
24	The Iraqi ports witnessed a moderate commercial navigation movement and therefore require an increase And its tiration	0.733
25	Iraqi ports need big and big capabilities, and this requires planning And the provision of resources	0.782
26	The management of Iraqi ports, both oil and gas, is unable to provide The basics to improve the Iraqi economy	0.764
27	The investment process is based on the available income of both gas and gas Or oil, and that is never enough	0.717
28	True development requires many political and partisan efforts to develop That is	0.726
29	Many foreign Arab countries in Iraq have been interested in oil and gas	0.743
30	The intervention of countries means that the Iraqi economy needs more time Stand on his feet	0.699

**Statistically significant at the level of significance ($\alpha = 0.01$)

Fourth dimension

Table 4.9: Correlation coefficients between the score for each phrase and the total score of the fourth dimension

N.	Phrase	Correlation coefficient
31	The opening of port management, accounting, auditing and control files is a factor The task for the economy to succeed	0.705
32	Iraq possesses four main commercial ports represented in Umm Qasr port The port of the stronghold, the port of Khawr al-Zubair and Abu Floss are in need of a treasury It contributes to improved ports	0.741
33	Al Faw's large-scale ports are a giant strategic project in Iraq	0.597
34	The geographical location of Iraq's ports is helping to increase income and investment as it is They are located on the Arab Gulf	0.695
35	Iraqi ports, such as the port of Faw, need materials and study plans that contribute to Economic development	0.754
36	The Iraqi government is working to receive foreign labor as experts to improve oil And gas is their production	0.692
37	Iraq is trying hard to rely on itself after the foreign investment partnership	0.759

Table 4.9: (Cont.)

N.	Phrase	Correlation coefficient
38	Iraq's ports have contributed to the revival of the volume of business activity in Exports and imports are a significant and impressive contribution	0.679
39	Iraq has tried to address its difficulties in extracting gas And oil	0.717
40	There are still concerns about the general waste of oil and gas in an operation Extraction, which poses a risk to the lost quantities	0.745
41	Management aims to achieve high efficiency and productivity by improving Performance of the gas and oil pipeline operators	0.763

**Statistically significant at the level of significance ($\alpha = 0.01$)

We can note from the data of the previous four tables that all the correlation coefficients for all items in the four dimensions of the study were statistically significant at the significance level $\alpha = (0.01)$, and therefore we conclude that the study tool has structural validity and is valid to achieve the purposes of the study

5. THE RESULTS OF THE STUDY ANALYZE IT AND DISCUSS IT

5.1 Analysis of the questionnaire:

5.1.1 First: Data analysis

- **Gender**

The study sample reached 78 male individuals, 65 % while 42 female members reached 35 %.

Table 5.1: Distribution of the study sample according to gender

Gender	N	%
Male	78	65
female	42	35
Total	120	100

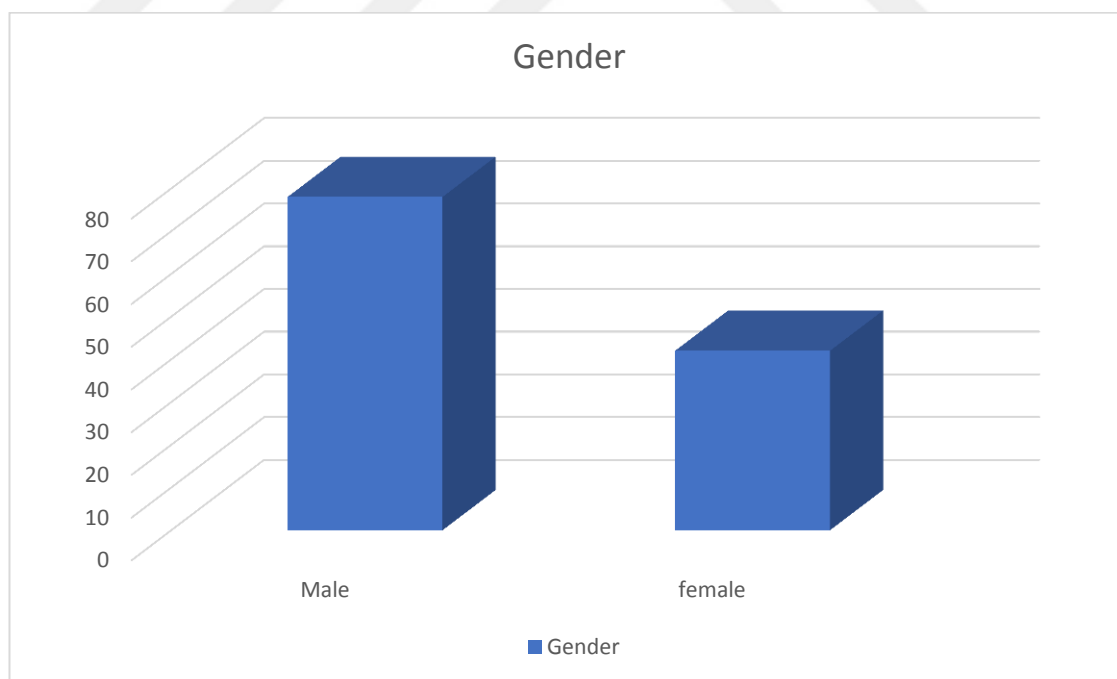


Figure 5.1: Ratios of the research sample by gender

- **Age :**

The study sample was divided according to the age into 4 categories.

The percentage of the study sample individuals 25 years and younger was 11.67 % of the study sample, while the percentage of the study sample individuals aged between 26-35 years was 34.17 % of the study sample, while the percentage of the study sample individuals whose ages were From 36 - 45 years of age 25% of the study sample, and the percentage of study sample individuals who are 46 years old and over is 29.17% of the study sample.

Table 5.2: Distribution of the study sample according to age

Age	N	%
25 and younger	14	11.67
From 26 - 35 years	41	34.17
From 36 – 45 years	30	25.00
46 years and older	35	29.17
Total	120	100

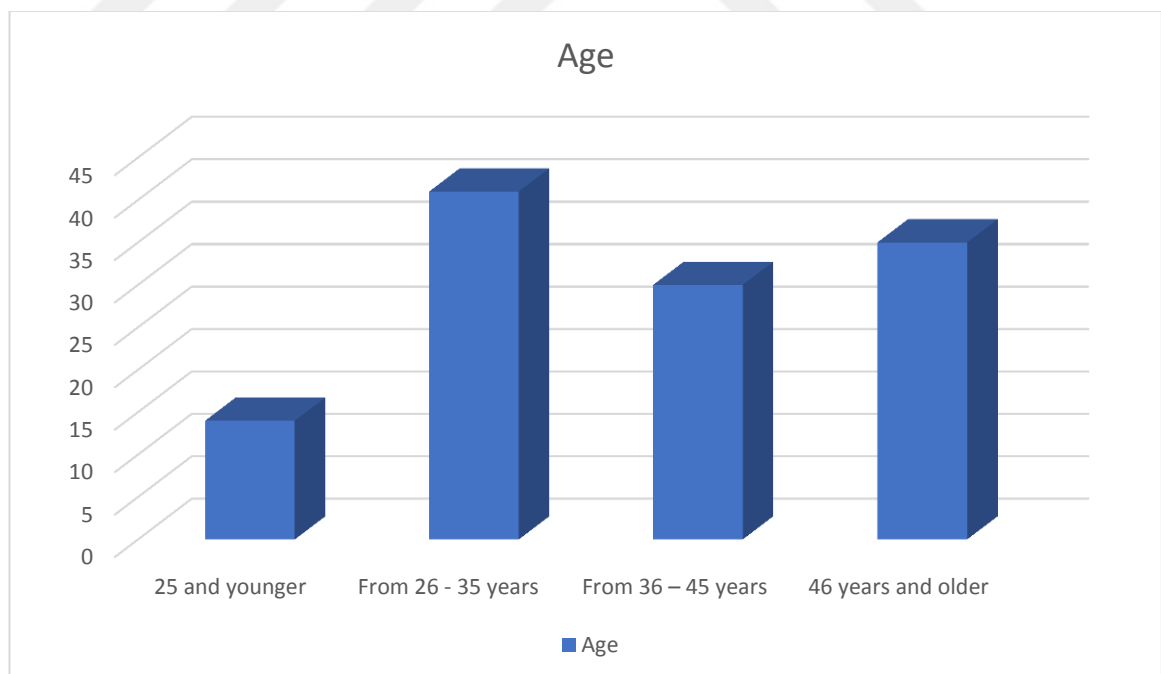


Figure 5.2: Ratios of the study sample by age

- **Scientific degree:**

The study sample was divided according to Scientific degree into 3 categories, and the number of the study sample who obtained a Bachelor's degree was 88 individuals, at a rate of 73.34 % of the study sample, while the number of the study sample who obtained a Master's degree reached 22 individuals, representing 18.33 % of the study sample, while the number of the study sample who obtained PhD, 10 individuals, 8.33 % of the study sample.

Table 5.3: Distribution of the study sample according to scientific degree

Scientific degree	N	%
Bachelor	88	73.34
Master	22	18.33
PhD	10	8.33
Total	120	100

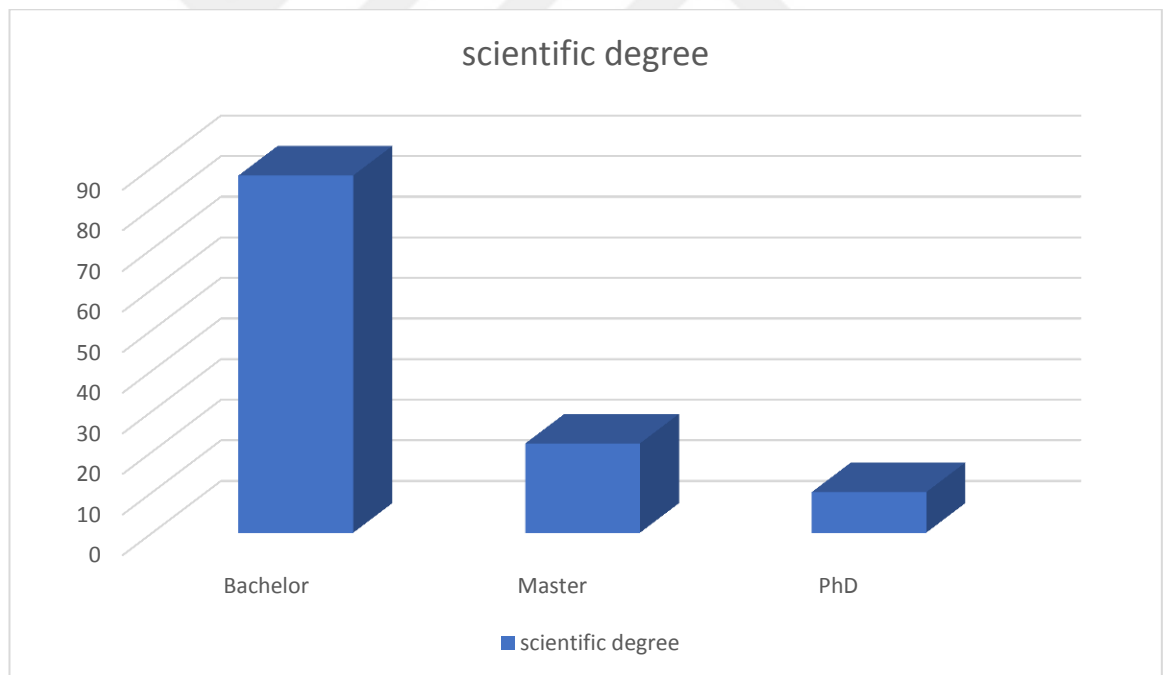


Figure 5.3: Ratios of research sample by scientific degree

- **Workplace**

The study sample reached 79 individuals in Baghdad governorate, 65.83 % while 41 individuals in Other Province 34.17 %.

Table 5.4: Distribution of the study sample according workplace

Workplace	N	%
Baghdad governorate	79	65.83
Other Province	41	34.17
Total	120	100

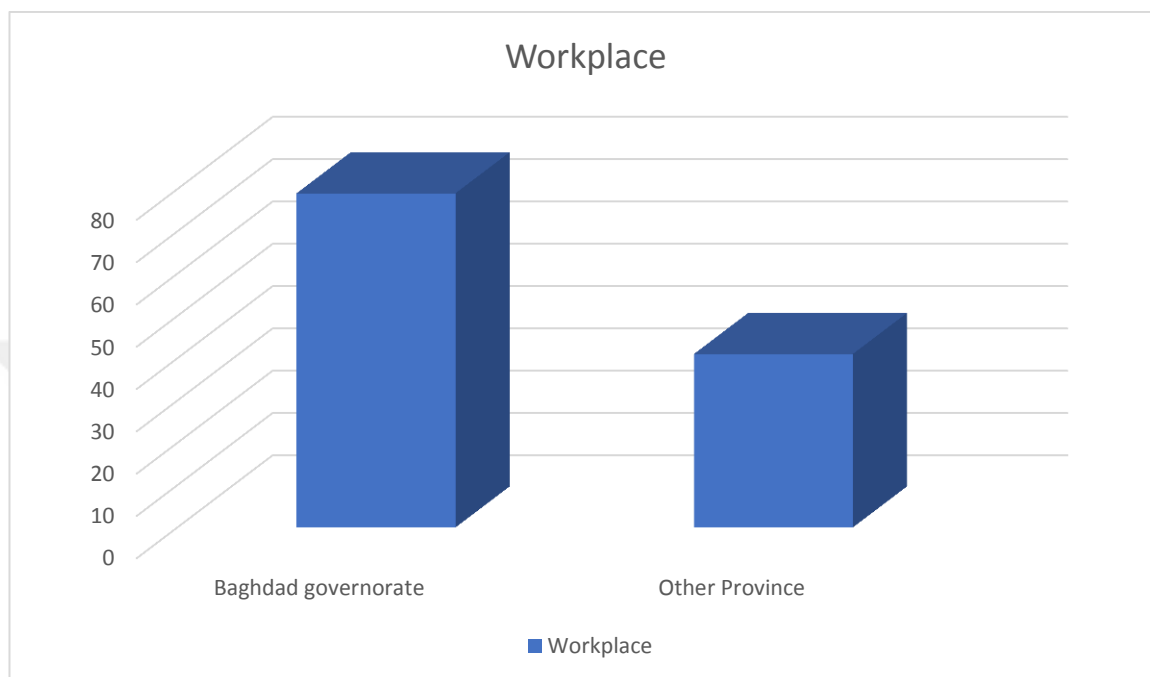


Figure 5.4: Ratios of study sample by workplace

- **Current functionality**

The study sample was divided according to Current functionality into 3 categories, and the number of the study sample who a Factor was 29 individuals, at a rate of 24.17 % of the study sample, while the number of the study sample who Manager reached 37 individuals, representing 30.83 % of the study sample, while the number of the study sample who Head of Section 54 individuals 45 % of the study sample.

Table 5.5: Distribution of the study sample according to current functionality

Current functionality	N	%
Factor	29	24.17
Manager	37	30.83
Head of Section	54	45.00
Total	120	100

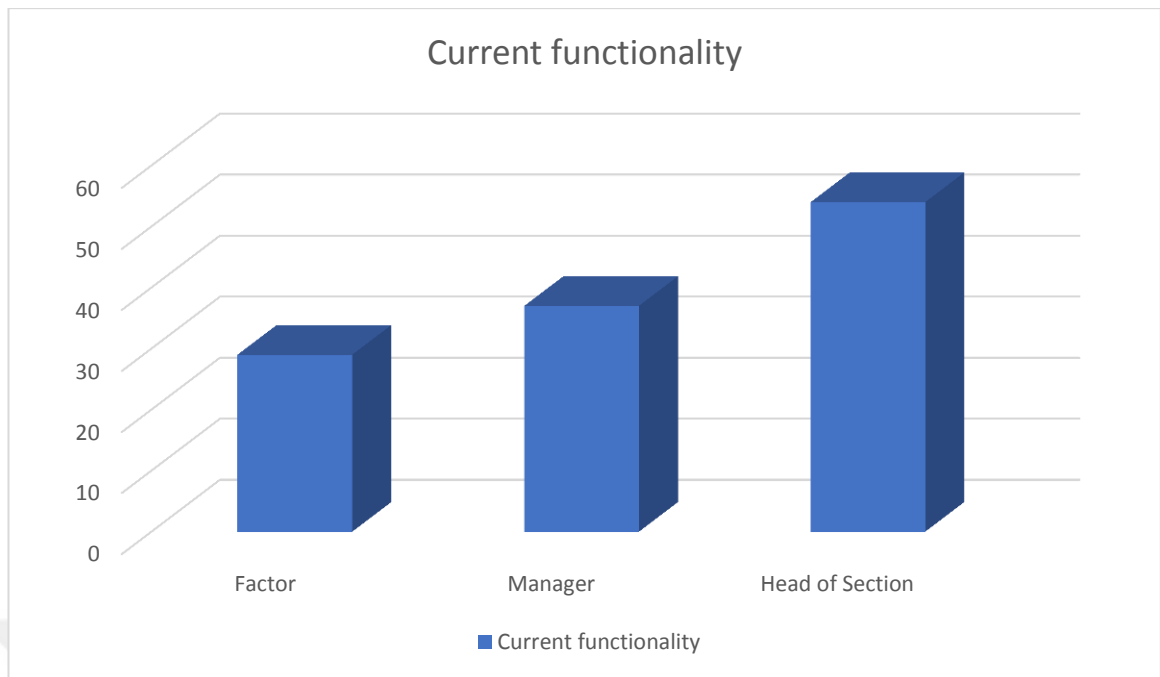


Figure 5.5: Proportional distribution of study sample according to current functionality

Years of experience:

The study sample was divided according to the number of years of experience into 3 categories.

The percentage of study sample individuals who have experience of 5 - 10 years is 23.33 % of the study sample, while the percentage of individuals

whose experience reaches 11-16 years is 36.67 % of the study sample, while the percentage of the study sample individuals whose experience reaches 17 years or more is 40 % of the study sample.

Table 5.6: Distribution of the study sample according to years of experience

Experience	N	%
5-10 years	28	23.33
From 11 to 16 years old	44	36.67
17 years and over	48	40
Total	120	100

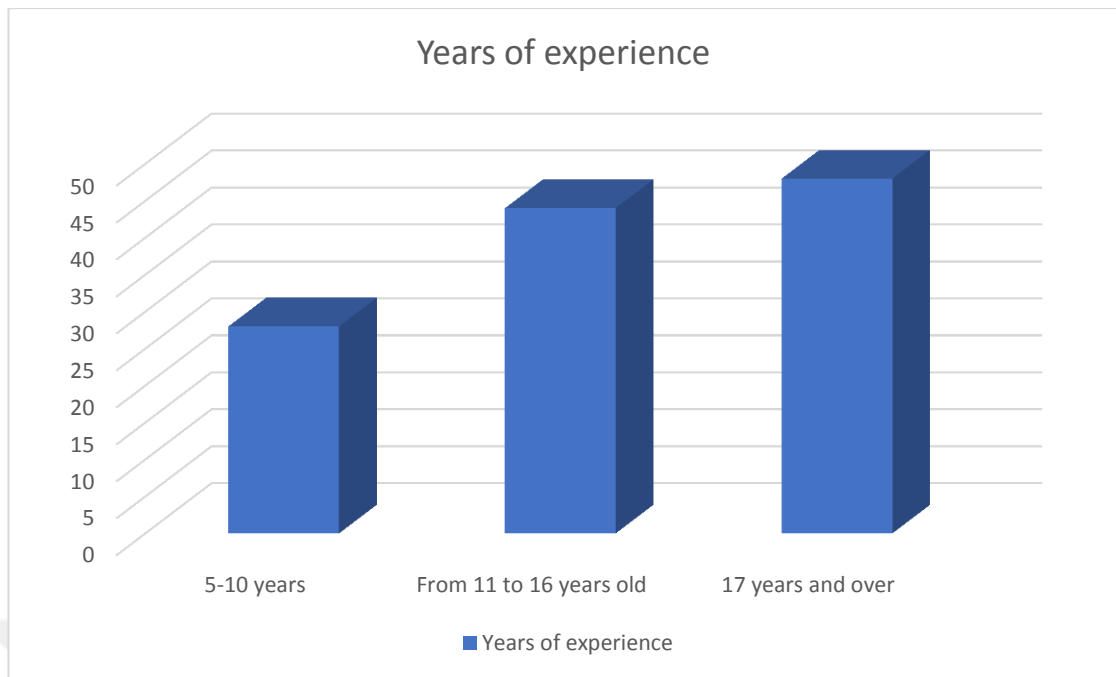


Figure 5.6: Proportional distribution of the study sample by years

5.1.2 Second: Frequency ratios of the responses of the research sample

- **The first dimension: The reality of managing gas and oil**

Table 5.7: Items of the first dimension

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
1	The Iraqi administration tries to use the invading wealth distribution as required	36.67	28.33	20	11.67	3.33
2	There is a waste of fact due to the limited capabilities available in optimal use Resources	30	37.29	20.34	10	1.67
3	The Iraqi administration was able to provide very large quantities through A court plan	30	40	20	6.67	3.33
4	Improper use of gas and oil management leads to widespread unemployment And increasing economic crises	28.33	34.48	22.41	10	3.33

Table 5.7: (Cont.)

N .	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
5	The licensing tours succeeded in properly investing Iraqi oil and gas within a year of the conclusion of the partnership agreements with the countries concerned.	33.33	35	21.67	8.33	1.67
6	The cancellation of agreements with countries that contributed to a low economic situation that contributed to an improvement in the Iraqi income.	30	31.67	23.33	11.67	3.33
7	Investing 60% of the Iraqi gas means that Iraq heads toward an economy Strong	28.33	40	21.67	6.67	3.33
8	Building facilities that process the accompanying gas for about two years, and investing the gas fields will ease the invading crisis on Iraq	33.33	37.7	18.03	6.67	5
9	Oil companies burn about 17 billion cubic meters of The gas associated with the extraction process is a clear waste of the Iraqi economy	31.67	31.67	21.67	6.67	8.33
10	The intervention of a neighboring Arab role in providing Iraq with gas will open an Arab horizon and an economic partnership that will improve the Iraqi economic work.	36.67	33.33	23.33	3.33	3.33

All expressions of the dimension were in the high plane and it shows the high level of the managing gas and oil from the viewpoint of the study sample, it turns out the general average of the dimension 3.812.

- **The second dimension: The future of the Iraqi oil and gas administration**

Table 5.8: Items of the second dimension

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
1	Political conflict is the one that causes the state of economic decline, especially a crisis Iraqi gas	35	31.67	18.33	6.67	8.33
2	The future of the Iraqi economy suggests a strong economy in case of signing the approval Self	35	30	16.67	8.33	10
3	Iraq is the Oqaz field, the largest gas field that is based It has all the facilities of Iraq	33.33	33.33	18.33	6.67	8.33
4	The trend toward investments in gas is being sought, especially in light of the increasing financial crisis in the country because of the low oil prices and the spread of Corona virus	31.67	31.67	20	8.33	8.33
5	Iraq plans to invest 3 billion and 150 million cubic feet of gas in the eastern and southern oil fields of the country.	30	33.33	21.67	5	10
6	Partnership, agreements and self-reliance must be built because it is not enough Of the Iraqi economy	30	37.29	20.34	10	1.67
7	Investment is subject to the country's supreme will, so a plan should be drawn up Strategy	30	40	20	6.67	3.33

Table 5.8: (Cont)

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
8	Countries that meet with oil and gas should establish genuine partnerships, gain experience, and then become self-reliant in managing the country's projects.	28.33	34.48	22.41	10	3.33
9	Natural gas is one of the most important alternative sources of energy for oil.	33.33	35	21.67	8.33	1.67
10	Poor planning, lack of coordination, and lack of investment	30	31.67	23.33	11.67	3.33

All expressions of the axis were in the high plane and it shows the high level of the future of the Iraqi oil and gas administration from the viewpoint of the study sample, it turns out the general average of the axis 3.757.

- **The third dimension: The reality of managing Iraqi ports**

Table 5.9: Items of the third dimension

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
1	Ports of Basra, Faw and other ports	31.67	31.67	21.67	6.67	8.33
2	Interest in natural gas projects and port construction has begun since late The 1950s	36.67	33.33	23.33	3.33	3.33
3	Projects and their management related to Iraqi ports will further improve Services	35	31.67	18.33	6.67	8.33
4	The Iraqi ports witnessed a moderate commercial navigation movement and therefore require an increase And its tiration	35	30	16.67	8.33	10

Table 5.9: (Cont.)

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
5	Iraqi ports need big and big capabilities, and this requires planning And the provision of resources	33.33	33.33	18.33	6.67	8.33
6	The management of Iraqi ports, both oil and gas, is unable to provide The basics To improve the Iraqi economy	31.67	28.33	23.33	10	6.67
7	The investment process is based on the available income of both gas and gas Or oil, and that is never enough	30	30	25	11.67	3.33
8	True development requires many political and partisan efforts to develop That is	33.33	28.33	21.67	6.67	10
9	Many foreign Arab countries in Iraq have been interested in oil and gas	31.67	26.67	26.67	5	10
10	The intervention of countries means that the Iraqi economy needs more time Stand on his feet	35	31.67	25	5	3.33

All expressions of the axis were in the high plane except for the one expression in the intermediate plane and it shows the high level of the managing Iraqi ports from the viewpoint of the study sample, it turns out the general average of the axis 3.758

5.1.3 Third dimension: The future of the management of Iraqi ports

Table 5.10: Items of the fourth dimension

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
1	The opening of port management, accounting, auditing and control files is a factor The task for the economy to succeed	36.67	30	23.33	6.67	3.33

Table 5.10: (Cont)

N.	Items	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
2	Iraq possesses four main commercial ports represented in Umm Qasr port The port of the stronghold, the port of Khawr al-Zubair and Abu Floss are in need of a treasury It contributes to improved ports	38.33	28.33	21.67	5	6.67
3	Al Faw's large-scale ports are a giant strategic project in Iraq	31.67	33.33	26.67	5	3.33
4	The geographical location of Iraq's ports is helping to increase income and investment as it is They are located on the Arab Gulf	36.67	28.33	20	6.67	8.33
5	Iraqi ports, such as the port of Faw, need materials and study plans that contribute to Economic development	30	35	21.67	5	8.33
6	The Iraqi government is working to receive foreign labor as experts to improve oil And gas is their production	41.67	30	23.33	3.33	1.67
7	Iraq is trying hard to rely on itself after the foreign investment partnership	40	28.33	21.67	6.67	3.33
8	Iraq's ports have contributed to the revival of the volume of business activity in Exports and imports are a significant and impressive contribution	36.67	26.67	23.33	3.33	10
9	Iraq has tried to address its difficulties in extracting gas And oil	38.33	31.67	20	5	5
10	There are still concerns about the general waste of oil and gas in an operation Extraction, which poses a risk to the lost quantities	38.33	28.33	21.67	5	6.67
11	Management aims to achieve high efficiency and productivity by improving Performance of the gas and oil pipeline operators	38.33	31.67	20	5	5

All expressions of the axis were in the high plane and it shows the high level of the future of the management of Iraqi ports from the viewpoint of the study sample, it turns out the general average of the axis 3.877

5.1.4 Fourth: Mean and standard deviation

- **The first dimension**

The first dimension contains 10 items, and the arithmetic means and standard deviations of these items are as follows:

Table 5.11: Mean and standard deviation for the elements of the first dimension

N	Item	valid	Mean	Std.
1	The Iraqi administration tries to use the invading wealth distribution as required	120	3.8333	1.14740
2	There is a waste of fact due to the limited capabilities available in optimal use Resources	120	3.8500	1.01791
3	The Iraqi administration was able to provide very large quantities through A court plan	120	3.7083	0.99068
4	Improper use of gas and oil management leads to widespread unemployment And increasing economic crises	120	3.8000	1.06590
5	The licensing tours succeeded in properly investing Iraqi oil and gas within a year of the conclusion of the partnership agreements with the countries concerned.	120	3.8417	1.07684
6	The cancellation of agreements with countries that contributed to a low economic situation that contributed to an improvement in the Iraqi income.	120	3.8333	1.03982
7	Investing 60% of the Iraqi gas means that Iraq heads toward an economy Strong	120	3.8333	1.02353
8	Building facilities that process the accompanying gas for about two years, and investing the gas fields will ease the invading crisis on Iraq	120	3.8667	1.10715
9	Oil companies burn about 17 billion cubic meters of The gas associated with the extraction process is a clear waste of the Iraqi economy	120	3.7167	1.21740
10	The intervention of a neighboring Arab role in providing Iraq with gas will open an Arab horizon and an economic partnership that will improve the Iraqi economic work.	120	4.0000	0.95266
	Average		3.82833	1.063929

By calculating the arithmetic means and standard deviations of the first dimension, the minimum and maximum values for the arithmetic means were 3.7083 and 4, and the general mean of the arithmetic means was 3.82833, and the minimum and maximum values for the standard deviation were 0.95266 and 1.21740 and their general average was 1.063929

- **The second dimension**

The second dimension contains 10 items, and the arithmetic means and standard deviations of these items are as follows:

Table 5.12: Mean and standard deviation for the elements of the second dimension

N	Item	valid	Mean	Std.
1	Political conflict is the one that causes the state of economic decline, especially a crisis Iraqi gas	120	3.8167	1.25010
2	The future of the Iraqi economy suggests a strong economy in case of signing the approval Self	120	3.7667	1.32673
3	Iraq is the Oqaz field, the largest gas field that is based It has all the facilities of Iraq	120	3.7667	1.22119
4	The trend toward investments in gas is being sought, especially in light of the increasing financial crisis in the country because of the low oil prices and the spread of Corona virus	120	3.7000	1.23397
5	Iraq plans to invest 3 billion and 150 million cubic feet of gas in the eastern and southern oil fields of the country.	120	3.6833	1.23658
6	Partnership, agreements and self-reliance must be built because it is not enough Of the Iraqi economy	120	3.8500	1.01791
7	Investment is subject to the country's supreme will, so a plan should be drawn up Strategy	120	3.8655	1.03272
8	Countries that meet with oil and gas should establish genuine partnerships, gain experience, and then become self-reliant in managing the country's projects.	120	3.7583	1.07684
9	Natural gas is one of the most important alternative sources of energy for oil.	120	3.9000	1.01584
10	Poor planning, lack of coordination, and lack of investment	120	3.7333	1.11320
	Average		3.78405	1.152508

By calculating the arithmetic means and standard deviations of the second dimension, the minimum and maximum values for the arithmetic means were 3.6833 and 3.9 and the general mean of the arithmetic means was 3.78405, and the minimum and maximum values for the standard deviation were 1.01584 and 1.32673 and their general average was 1.152508

- **The third dimension**

The third dimension contains 10 items, and the arithmetic means and standard deviations of these items are as follows:

Table 5.13: Mean and standard deviation for the elements of the third dimension

N	Item	valid	Mean	Std.
1	Ports of Basra, Faw and other ports	120	3.7167	1.21740
2	Interest in natural gas projects and port construction has begun since late The 1950s	120	3.9667	1.02024
3	Projects and their management related to Iraqi ports will further improve Services	120	3.7833	1.23113
4	The Iraqi ports witnessed a moderate commercial navigation movement and therefore require an increase And its tiration	120	3.7167	1.29760
5	Iraqi ports need big and big capabilities, and this requires planning And the provision of resources	120	3.7667	1.22119
6	The management of Iraqi ports, both oil and gas, is unable to provide The basics To improve the Iraqi economy	120	3.6833	1.20909
7	The investment process is based on the available income of both gas and gas Or oil, and that is never enough	120	3.7167	1.11659
8	True development requires many political and partisan efforts to develop That is	120	3.6833	1.27670
9	Many foreign Arab countries in Iraq have been interested in oil and gas	120	3.6417	1.26222
10	The intervention of countries means that the Iraqi economy needs more time Stand on his feet	120	3.9000	1.04841
	Average		3.75751	1.190057

By calculating the arithmetic means and standard deviations of the third dimension, the minimum and maximum values for the arithmetic means were 3. 6417and 3.9 and the general mean of the arithmetic means was 3. 75751 and the minimum and maximum values for the standard deviation were 1.04841 and 1. 29760 and their general average was 1.190057

- **The fourth dimension**

The first dimension contains 11 items, and the arithmetic means and standard deviations of these items are as follows:

Table 5.14: Mean and standard deviation for the elements of the fourth dimension

N	Item	valid	Mean	Std.
1	The opening of port management, accounting, auditing and control files is a factor The task for the economy to succeed	120	3.9000	1.07999
2	Iraq possesses four main commercial ports represented in Umm Qasr port The port of the stronghold, the port of Khawr al-Zubair and Abu Floss are in need of a treasury It contributes to improved ports	120	3.8667	1.18061
3	Al Faw's large-scale ports are a giant strategic project in Iraq	120	3.8500	1.03429
4	The geographical location of Iraq's ports is helping to increase income and investment as it is They are located on the Arab Gulf	120	3.5417	1.06823
5	Iraqi ports, such as the port of Faw, need materials and study plans that contribute to Economic development	120	3.7333	1.18629
6	The Iraqi government is working to receive foreign labor as experts to improve oil And gas is their production	120	4.0684	0.98020
7	Iraq is trying hard to rely on itself after the foreign investment partnership	120	3.9500	1.09122
8	Iraq's ports have contributed to the revival of the volume of business activity in Exports and imports are a significant and impressive contribution	120	3.7667	1.26181
9	Iraq has tried to address its difficulties in extracting gas And oil	120	3.9333	1.11320
10	There are still concerns about the general waste of oil and gas in an operation Extraction, which poses a risk to the lost quantities	120	3.8667	1.18061
11	Management aims to achieve high efficiency and productivity by improving Performance of the gas and oil pipeline operators	120	3.9333	1.11320
	Average		3.855464	1.117241

By calculating the arithmetic means and standard deviations of the fourth dimension, the minimum and maximum values for the arithmetic means were 3.5417 and 4.0684 and the general mean of the arithmetic means was 3.855464 and the minimum and maximum values for the standard deviation were 0.98020 and 1.26181 and their general average was 1.117241

5.1.5 Fifth: Factor analysis

The first dimension

The KMO value for the first dimension is 0.896, and it means that there is quality for the measurement, and the result can be clarified as following:

Table 5.15: KMO and Bartlett's Test for the first dimension

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.896
Bartlett's Test of Sphericity	Approx. Chi-Square	1937.937
	Df	45
	Sig.	0.000

*p < 0.01

By analyzing the factors for the first dimension, we discovered that none of the variables are reduced and that they explain 80.94 % of the variance in the result of the analysis, and the result can be clarified in the following table:

Table 5.16: Factor analysis of the first dimension

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Total	Total	% of Variance	Cumulative %
1	8.094	80.944	80.944	8.094	80.944	80.944
2	0.796	7.955	88.899			
3	0.335	3.345	92.244			
4	0.243	2.427	94.672			
5	0.153	1.526	96.198			
6	0.144	1.438	97.636			
7	0.107	1.069	98.705			
8	0.075	0.750	99.455			
9	0.042	0.425	99.880			
10	0.012	0.120	100.000			

Extraction Method: Principal Component Analysis.

The second dimension

The KMO value for the second dimension is 0.82, and that's mean that there's quality for the measurement, and the result can be clarified as following:

Table 5.17: KMO and Bartlett's Test for the second dimension

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.920
Bartlett's Test of Sphericity	Approx. Chi-Square	2054.952
	Df	45
	Sig.	0.000

*p < 0.01 By analyzing the factors for the second dimension, we discovered that none of the variables is reduced and that they explain 80.92 % of the variance in the result of the analysis, and the result can be clarified in the following table:

Table 5.18: Factor analysis of the second dimension

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.093	80.928	80.928	8.093	80.928	80.928
2	1.137	11.371	92.299	1.137	11.371	92.299
3	0.197	1.970	94.269			
4	0.163	1.634	95.902			
5	0.139	1.388	97.290			
6	0.091	0.912	98.203			
7	0.056	0.561	98.764			
8	0.047	0.468	99.232			
9	0.041	0.411	99.643			
10	0.036	0.357	100.000			

Extraction Method: Principal Component Analysis.

The third dimension

The KMO value for the third dimension is 0.896, and it means that there is quality for the measurement, and the result can be clarified as following:

Table 5.19: KMO and Bartlett's Test for the third dimension

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.896
Bartlett's Test of Sphericity	Approx. Chi-Square	2617.965
	Df	45
	Sig.	0.000

*p < 0.01

By analyzing the factors for the third dimension, we discovered that none of the variables is reduced and that they explain 87.41 % of the variance in the result of the analysis, and the result can be clarified in the following table:

Table 5.20: Factor analysis of the hird dimension

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Total	Total	% of Variance	Cumulative %
1	8.742	87.415	87.415	8.742	87.415	87.415
2	0.459	4.590	92.005			
3	0.393	3.926	95.931			
4	0.133	1.329	97.260			
5	0.105	1.047	98.307			
6	0.061	0.612	98.919			
7	0.056	0.565	99.484			
8	0.033	0.326	99.810			
9	0.016	0.158	99.968			
10	0.003	0.032	100.000			

Extraction Method: Principal Component Analysis.

The fourth dimension

The KMO value for the fourth dimension is 0.89, and that means that there's quality for the measurement, and the result can be clarified as following:

Table 5.21: KMO and Bartlett's Test for the fourth dimension

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.899
Bartlett's Test of Sphericity	Approx. Chi-Square	2206.498
	Df	55
	Sig.	0.000

*p < 0.01

By analyzing the factors for the fourth dimension, we discovered that none of the variables are reduced and that they explain 80.56 % of the variance in the result of the analysis, and the result can be clarified in the following table:

Table 5.22: Factor analysis of the fourth dimension

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.863	80.569	80.569	8.863	80.569	80.569
2	0.715	6.502	87.071			
3	0.615	5.591	92.663			
4	0.260	2.363	95.026			
5	0.166	1.514	96.539			
6	0.117	1.060	97.600			
7	0.105	0.957	98.557			
8	0.065	0.591	99.147			
9	0.056	0.507	99.654			
10	0.024	0.217	99.871			
11	0.014	0.129	100.000			

Extraction Method: Principal Component Analysis.

5.1.6 Sixth: Regression analysis

The result of the regression analysis was between the reality of managing gas and oil, and the future of the Iraqi oil and gas administration as shown in the following table:

Table 5.23: Regression between IT capacity and customer's satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.311	.215		1.451	.150
	The_reality_of_managing_gas_and_oil	.907	.054	.838	16.666	.000

a. Dependent Variable: The_future_of_the_Iraqi_oil_and_gas_administration

We note from the previous table that the beta coefficient is 90.7 % at significance =0.00, which is a strong correlation that shows that the reality of managing gas and oil has a significant impact on the future of the Iraqi oil and gas administration.

5.1.7 Seventh: Answering the study hypotheses

The main hypothesis:

There are no statistically significant differences between managing Iraqi projects and their implications for the oil and gas sector in Iraq.

The researcher assumed three sub-hypotheses that help him to answer the main hypothesis of the study, and by calculating the Pearson correlation coefficient, the following results were reached to answer each of the sub-hypotheses:

- **The first sub-hypothesis**

The first sub-hypothesis states that there are no statistically significant differences between the Iraqi gas sector and the resulting impact on managing the oil sector in Iraq, by calculating the correlation coefficient, it was found that there is a relationship between the Iraqi gas sector and the resulting impact on managing the oil sector at a significant level of 0.01, as can be seen from the following table:

Table 5.24: The correlation between the level of managing gas and oil and the level of Iraqi oil and gas sector

variable	level of managing gas and oil
level of Iraqi oil and gas sector	0.776

**Statistically significant at the level of significance ($\alpha = 0.01$)

- **The second sub-hypothesis**

The second sub-hypothesis states that there are no statistically significant differences between the oil and gas sector as a whole and the resulting impact on the government in Iraq, by calculating the correlation coefficient, it was found that there is a relationship between the Iraqi gas sector and the resulting impact on managing the oil sector at a significant level of 0.01, as can be seen from the following table:

Table 5.25: The correlation between the level of managing gas and oil ports and the level of the resulting impact on the government in Iraq

variable	level of managing gas and oil
level of the resulting impact on the government in Iraq	0.714

**Statistically significant at the level of significance ($\alpha = 0.01$)

- **The third sub-hypothesis**

The third sub-hypothesis states that there are no statistically significant differences between political indicators and the governmental role in managing oil and gas projects, and international relations in Iraq, by calculating the correlation coefficient, it was found that there is a relationship between political indicators and the governmental role in managing oil and gas projects, and international relations in Iraq at a significant level of 0.01, as can be seen from the following table:

Table 5.26: The correlation between the level of managing gas and oil ports and the level of future of the management of Iraqi ports

variable	level of political indicators and the governmental role in managing gas and oil
level of international relations in Iraq	0.732

**Statistically significant at the level of significance ($\alpha = 0.01$)

- **The main question**

The main question is: What is the role of good management in activating and revitalizing the movement of oil and gas ports in Iraq?

The researcher concluded that good management has an effective role in activating and activating the movement of oil and gas ports in Iraq in terms of supervising the development of investment plans and planning budgets for the activity of the ports sector, compiling foreign trade data and setting a method for its distribution to the various ports according to the capacity and capabilities of each port and following up on the operations of loading, unloading and withdrawals from Ports, as well as follow-up projects to expand, develop and establish ports, and make contacts with international organizations and bodies interested in maritime activity to introduce the capabilities of oil and gas ports in Iraq and their ability to meet the needs of all countries.

6. CONCLUSIONS OF THE PRACTICAL STUDY

Through practical analysis, the study reached the following results:

- The study sample reached 78 male, 65 % while 42 female members reached 35 %.
- The study sample was divided according to the age into 4 categories. The percentage of the study sample individuals 25 years and younger was 11.67 % of the study sample, while the percentage of the study sample individuals aged between 35 - 26 years was 34.17 % of the study sample, while the percentage of the study sample individuals whose ages were From 36 - 45 years of age 25% of the study sample, and the percentage of study sample individuals who are 46 years old and over is 29.17% of the study sample.
- The study sample was divided according to Scientific degree into 3 categories, and the number of the study sample who obtained a Bachelor's degree was 88 individuals, at a rate of 73.34% of the study sample, while the number of the study sample who obtained a Master's degree reached 22 individuals, representing 18.33 % of the study sample, while the number of the study sample who obtained phd, 10 individuals, 8.33 % of the study sample.
- The study sample reached 79 individuals in Baghdad governorate, 65.83 % while 41 individuals in Other Province 34.17 %.
- The study sample was divided according to Current functionality into 3 categories, and the number of the study sample who a Factor was 29 individuals, at a rate of 24.17 % of the study sample, while the number of the study sample who Manager reached 37 individuals, representing 30.83 % of the study sample, while the number of the study sample who Head of Section 54 individuals 45 % of the study sample.
- The study sample was divided according to the number of years of experience into 3 categories. The percentage of study sample individuals who have

experience of 5 - 10 years is 45.7 % of the study sample, while the percentage of individuals The study sample whose experience reaches 11-16 years is 35 % of the study sample, while the percentage of the study sample individuals whose experience reaches 17 years or more is 19.3 % of the study sample.

- All expressions of the dimension were in the high plane and it shows the high level of the managing gas and oil from the viewpoint of the study sample, it turns out the general average of the dimension 3.812
- All expressions of the axis were in the high plane and it shows the high level of the future of the Iraqi oil and gas administration from the viewpoint of the study sample, it turns out the general average of the axis 3.764
- All expressions of the axis were in the high plane except for the one expression in the intermediate plane and it shows the high level of the managing Iraqi ports from the viewpoint of the study sample, it turns out the general average of the axis 3.758
- There is a positive correlation relationship with statistical significance between the level of managing gas and oil and the level of future of the Iraqi oil and gas administration at a significant level of 0.01, which shows the incorrectness of the Hypotheses of the first study and shows the existence of a positive effect of the level of managing gas and oil on the level of future of the Iraqi oil and gas administration, that is, the more level of managing gas and oil The level of future of the Iraqi oil and gas administration has increased
- All expressions of the axis were in the high plane and it shows the high level of the future of the management of Iraqi ports from the viewpoint of the study sample, it turns out the general average of the dimensions 3.872
- There is a positive correlation relationship with statistical significance between the level of managing gas and oil ports and the level of future of the management of Iraqi ports at a significant level of 0.01, which shows the incorrectness of the Hypotheses of the second study and shows the existence of a positive effect of the level of a level of managing gas and oil ports on the level of future of the management of Iraqi ports, that is, the more The level of

managing gas and oil ports The level of future of the management of Iraqi ports has increased

6.2 Recommendations of the Study

- Working on applying all modern technological methods in providing services in the oil and gas management sector
- Providing training programs to increase the ability of workers in the oil and gas sector to use advanced modern technology, which contributes to improving performance levels
- Working to keep pace with recent developments in the field of providing services in the field of oil and gas, which contributes to meeting all services needed by establishments and institutions operating in the field of oil.
- Work to apply all modern technological methods in providing services in the Iraqi port sector
- Providing training programs to increase the ability of workers in Iraqi ports to use advanced modern technology, which contributes to improving performance levels
- Working to keep pace with recent developments in the field of providing services in Iraqi ports which contributes to meeting all services needed by the establishments and institutions that deal with ports.
- Attention to increasing the competitive capabilities of Iraqi ports, which contributes to increasing their competitive advantage and increasing their market share
- The need to improve the operational efficiency of oil fields and production facilities in order to achieve production targets.
- The importance of enhancing pipeline and oil installation security.
- Reconstruction initiatives should be expedited.
- Begin the process of overhauling the oil business.
- Developing and expanding refineries to meet rising demand for petroleum products while also enhancing quality.

- Improving port management and operation efficiency, as well as examining the scope and substance of projects to rehabilitate and develop the port sector, by collecting, analyzing, and updating project-related data and information.



REFERENCES

- Abd Ali Al-Maamouri**, 2007, The New Oil Law, Iraqi Research Journal, Hammurabi Center for Research and Strategic Studies.
- Abdul Rahim, Abd & Sabri, HAR & Yew, Wong & Ismail, Syuhaida**, 2017, Project Management in Oil and Gas Industry: A Review.
- Ahmed Buraihi Al-Ali**, 2014, Foreign Investment, Growth, and Economic Stability Policies, Iraq, Karbala, 265.p
- Ahmed Mehdi, Bassam Fattouh**, 2020, Iraq's energy challenges are growing amid geopolitical turmoil, Financial Times.
- Aiyagari, S.R., and Gertler, M.** (1991), 'Asset Returns with Transactions Costs and Uninsured Individual Risk', 27 Journal of Monetary Economics, 311-331.
- Al-Enezi, Ali Hussein Khamis**, 2004 "The Development of Maritime Transport for the Ports of Iraq 1950-2000, Master Thesis, College of Arts, University of Basra.
- Alhadethi**, 1979, The development of maritime infrastructure in the member states of the Arab Petroleum Exporting Countries region.
- Ali Hussain Al-Mashhadani**, 1995, "The Problems of Iraqi Ports," Journal of Economic Sciences, Issue Seven, College of Administration and Economics, Basra University, p. 2
- Al-Mashhadani, Ali Hussein**, 1995, "The Problems of the Iraqi Ports," Journal of Economic Sciences, Issue Seven, College of Administration and Economics, University of Basra.
- Almodares, Sri Mahmoud**, 1976, Geography of Commerce in Iraq for the period 1950-1970, unpublished PhD thesis submitted to the Board of the Faculty of Arts, Ain Shams University, Cairo.
- Asri Musa**, 2000, Analytical study of expert, expert in the oil and gas industry in Iraq.
- Al-Nahrain**, Basra Gas Company, website, information is available on the website:
- Benjamin Shwadran** (1977). Middle East Oil: Issues and Problems. Transaction Publishers. p. 30f. ISBN 0-87073-598-5.
- Brautigam, Deborah**, 1991, "Governance: A Review" unpublished background paper, Policy and Review Department, The World Bank, March 1991
- Demirmen, Ferruh**. "Oil in Iraq: The Byzantine Beginnings." Global Policy Forum. April

- Edwaed W. Merrow**, Oil and Gas Industry Megaprojects: Our Recent Track Record,2011112
- Elvidge C D, Bazilian M D, Zhizhin M, Ghosh T, Baugh K and Hsu F-C** 2018 Energy Strategy Reviews 20 pp 156–62 doi:10.1016/j.esr.2017.12.012.
- ESCWA**, 2009, The Role of Gas Networks in Supporting Sustainable Development and Integration in the Arab Countries, Beirut, p. 14
- Fabio Ballini**, 2017, port and energy management challenges, World Maritime University.
- Farouk Al-Qassem**, 2005, The Norwegian Model in Managing Petroleum Resources, Alam Al-Maarifa Magazine 2010/373, p. 363, as well as a symposium on Iraqi oil wealth -management and development issues under the supervision of the London School of Economics held in London July - Al-Hikma Magazine Issue 140.
- Froger**, 2001, Economie Ecologique : Gouvernance I. Gouvernance et développement durable. Basel : Helbing & Lichtenhan.
- Fursenko, A.A.** 1990, The Battle for Oil. London: Jai Press.
- Gaudin, Jean-Pierre.** 1999. Modern governance, yesterday and today: Some clarifications to be gained from French government policies. International Social Science Journal 50: 47– (Chinese edition).
- GCPI.** (2018). General company for ports of Iraq "2017 annual report". Unpublished manuscript.
- Hall, D. J. et al.** (2013) ‘Reverse logistics goals, metrics, and challenges: perspectives from industry, International Journal of Physical Distribution & Logistics Management, 43(9), pp. 768–785.
- Hamdi Hafez**, 2010, Oil Pipelines and Tankers and the Middle East, The Anglo-Egyptian Library, undated, p.99.
- Ibtisam Kamal**, 2018, Oil & Gas Industry of Kurdistan Region of Iraq: Challenges and Opportunities Overview, DOI:10.31031/PPS.2018.02.000537.
- Information Office of the Patriotic Union of Kurdistan**, 08/20/2010
- International Energy Agency, Iraq Energy Outlook** (Paris: International Energy Agency, 2012)
- Iraq Oil Report**, 2020, “Iraq Crude Production and Export Tracker,” August 2020, page 6.
- Iraq, Ministry of Planning and Development Cooperation**, Department of Planning and Follow-up, unpublished data
- Iraq, Ministry of Planning and Development Cooperation**, Department of Planning and Follow-up, unpublished data.
- Jalal Neshat**, 2018, Iraq’s Oil and Gas Upstream Future Trend, Exxon Dena Oilfield Tools and Services.
- Jamal Al-Majayda**, Iraq chooses Shell, Al-Arab Al-Youm, parameters available on

- Kazem, F.** “Towards developing and upgrading Iraqi ports” An in-depth scientific study aimed at analyzing the factors of the progress of the Gulf ports, monitoring their accomplishments and strategic plans, and accurate analysis of the problems facing Iraqi ports and ways to improve their level.” Basra. Iraq (2005).
- Lebkicher, Roy et al.,** 1960, Aramco Handbook. New York: Arabian American Oil Co.
- Luay j. al-Khatteeb,** 2013, natural gas in the republic of Iraq, baker iii institute for public policy of rice university.
- Marina Ottaway,** 2005, “Back from the Brink: A Strategy for Iraq”, Carnegie Endowment Policy Brief, No. 43.
- Masha Menhat,** 2020, Challenges in managing oil and gas supply chain -An exploratory study, University Malaysia Terengganu.
- Middle East Economic Survey,** 2019, “Baghdad And KRG Sign Preliminary Oil Sharing, Budget Deal,” November 29, 2019, page 8.
- Ministry of Finance:** Accounting Department.
- Morton, Michael** (2006). In the Heart of the Desert, The Story of an Exploration Geologist and the Search for Oil in the Middle East. Aylesford: Green Mountain Press. pp. 7–11. ISBN 9780955221200.
- Muhammad Ali Zaini,** Gas Deal with Shell that is Destructive to Iraqi Industries, Al-Hiwar Civilized, Issue 3100, 08/20/2010
- Muhammad Ali Zaini,** natural gas is waste or exploitation for the benefit of the homeland? Civilized Dialogue, 2010
- Muhammad Ali Zaini,** Natural gas is waste or exploitation in the interest of the homeland, previous source
- Muhammad Ali Zaini,** Natural gas is waste or exploitation, previous source
- Muhammad Shikali,** 2010, Nabucco Gas Pipeline, Knowledge Unit.
- OAPEC,** 36th Annual Report of the Secretary General 2009, Kuwait, Various pages
Muhammad Ali Zaini, natural gas is waste or exploitation for the benefit of the homeland? Civilized Dialogue, No. 3069, 7/20/2010
- OAPEC,** annual statistical bluttin, Austria, 2009, p33
- OAPEC,** Annual Statistical Report 2010, Kuwait, various pages
- OAPEC,** Annual Statistical Report 2010, Kuwait, various pages
- OAPEC,** Annual Statistical Report 2010, Kuwait, various pages
- OAPEC,** Development of Natural Gas Resources in the Arab Countries, Kuwait, 2009, p. 110
- OAPEC,** Development of Natural Gas Resources in the Arab Countries, Previous source, 2010, pg. 112
- OAPEC,** Development of Natural Gas Resources in the Arab Countries, Previous source, pg. 115
- OAPEC,** The Eighth Arab Energy Conference, previous source, p. 29

- OAPEC**, The Eighth Arab Energy Conference, The Kuwaiti Paper, Amman, 2006, p. 31
- Park, N., Yoon, D., & Park, S.** (2014). Port capacity evaluation formula for general cargo doi://doi.org/10.1016/j.ajsl.2014.09.003
- Paul Rivlin**, "Iraq: Economics and the Collapse of the State," *Iqtisadi*, July 23, 2014.
- Poluha, Eva; Rosendahl, Mona** (2002). *Contesting 'good' governance: cross-cultural perspectives on representation, accountability and public space*. Routledge. ISBN 978-0-7007-1494-
- Rashid, Asaad Abdul Rahim**, Stages of Completion of the Faw Grand Port Project, Faw Grand Port Seminar, Center for Arab Gulf Studies, University of Basra, 2011
- Robin Mills And Maryam Salman**, 2020, powering Iraq: challenges facing the electricity sector in Iraq.
- RTI**, Basra Governorate Comprehensive Economic Survey 2008, p. 174
- RTI**, previous source, p.176
- Saleh Hadi Muhammad**, The Importance of the Great Port of Faw, Seminar on the Great Port of Faw, Center for Arab Gulf Studies, Basra University, 2011, p. 49
- Saleh Hadi Muhammad**, The Importance of the Great Port of Faw, Seminar on the Great Port of Faw, Center for Arab Gulf Studies, Basra University, 2011, p. 49
- Samir Al-Garish**, Oil Pipelines in the Arab Countries, *Oil and Arab Cooperation*, No. 127, Fall 2008, pp. 141-143
- Samir Saul** (2007). "Masterly Inactivity as Brinkmanship: The Iraq Petroleum Company's Route to Nationalization, 1958-1972". *The International History Review*. 29 (4): 746–792. doi:10.1080/07075332.2007.9641140. JSTOR 40110926.
- Sarwar Lateef**, 2016, Evolution of The World Bank's thinking on Governance, background paper governance and the law.
- Sen, Ban Ali**, "Ports in the Gulf Cooperation Council Countries and Iraq and Their Role in Activating Maritime Transport", Master Thesis, College of Administration and Economics, 2008
- Stephen Hemsley Longrigg** (1961). *Oil in the Middle East*. New York: Oxford University Press. OCLC 237163. OL 5830191M.
- Thaer Abdul Latif Mustafa**, Feasibility Study of the Faw Grand Port Project as a Support for the Iraqi Economy, Faw Grand Port Symposium, Center for Arab Gulf Studies, Basra University, 2011, p. 30
- The Consolidated Arab Economic Report** 2008 - 345.p.
- The official website of the North Gas Company**
- Tim Van Hinte, Thomas I Gunton and J C Day**, 2007, Evaluation of the assessment process for major projects: a case study of oil and gas pipelines in Canada , 25(2), June 2007, pages 123–137 DOI:

10.3152/146155107X204491

Toyin Falola; Ann Genova (2005). *The Politics of the Global Oil Industry: An Introduction*. Praeger/Greenwood. p. 61. ISBN 0-275-98400-1.

USAID, 2006, *Iraq in Perspective, An Analysis of What Does and What Does Not work in a Transitional State: How to Make Subsidy Reform Work in a Transitional State*.

Wong, Edward (2007). "Iraqi cabinet approves national oil law". *The New York Times*. ISSN 0362-4331. Retrieved 2018-06-12.

Zedalis, Rex, 2009, *The Legal Dimensions of Oil and Gas in Iraq, Current Reality and Future Prospects*. Cambridge University Press. p. 360. ISBN 9780521766616.

Zhukov S V and Kopytin I A, 2017, *World Economy and International Relations* 61 pp 36–42 doi:10.20542/0131-2227.



RESUME

<p>MOHAMMED DAWOOD ATIYAH</p> <p>Project management</p> <p>Education</p> <p>ALBASRA UNIVERSITY</p> <p>[I studied at Albasra University Business Administration department]</p> <p>GEDIK UNIVERSITY</p> <p>2019 – 2021</p> <p>[Study Master in Business Administration]</p> <p>work experience</p> <p>[DHL]-[MANAGER]</p> <p>2019–2017</p> <p>[I worked as a MANAGER in DHL Company]</p> <p>[Experience]</p> <p><input type="checkbox"/> I have the acumen and ability to learn new skills in a short time by collaborating with colleagues by work, and work.</p> <p><input type="checkbox"/> Ambitious, I have high self-confidence.</p>	<p>PERSONAL PARTICULARS:</p> <p>Full Name : MOHAMMED DAWOOD ATIYAH</p> <p>Interests:</p> <p>1#Photography</p> <p>2#Design</p> <p>3#Playing footbal</p> <p>4#swimming</p> <p>Skills:</p> <p>1- The skill of using microsoft programs</p> <p>2- Photography skill</p> <p>3- skill of using communication programs</p> <p>4- Typing skill</p> <p>5- Computer skill</p>
--	--