

شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو

بسم الله الرحمن الرحيم





HANAA ALY



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرونيله



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



HANAA ALY



شبكة المعلومات الجامعية التوثيق الإلكترونى والميكروفيلم

جامعة عين شمس التوثيق الإلكتروني والميكروفيلم قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها على هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



HANAA ALY

A COMPARATIVE ECONOMIC STUDY ON TREATMENT OF OIL BASED DRILLING FLUIDS BETWEEN KINGDOM OF BAHRAIN AND KINGDOM OF SAUDI ARABIA APPLIED ON THE PETROLEUM SECTOR

Submitted By

Mariam Mohamed Jaafar Abdullah Al-Mowali

Bachleor of Chemistry, Faculty of Science, Bahrain University, 2005 Master in Environmental Management, Arabian Gulf University, 2010

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Sciences

Department of Environmental Economics, Legal and Management Sciences faculty of Graduate Studies and Environmental Research
Ain Shams University

APPROVAL SHEET

A COMPARATIVE ECONOMIC STUDY ON TREATMENT OF OIL BASED DRILLING FLUIDS BETWEEN KINGDOM OF BAHRAIN AND KINGDOM OF SAUDI ARABIA APPLIED ON THE PETROLEUM SECTOR

Submitted By

Mariam Mohamed Jaafar Abdullah Al-Mowali

Bachleor of Chemistry, Faculty of Science, Bahrain University, 2005 Master in Environmental Management, Arabian Gulf University, 2010

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In

Environmental Sciences

Department of Environmental Economics, Legal and Management Sciences

This thesis was discussed and approved by:

The Committee Signature

1-Prof. Dr. Mamdouh Abd El-Aziz Refaiy

Prof. of Business Administration Faculty of Commerce Ain Shams University

2-Prof. Dr. Nader Alber Fanous

Prof. and Head of Department of Business Administration Faculty of Commerce Ain Shams University

3-Prof. Dr. Ahmed Mahmoud Ibrahim Al-Halfawi

Director General of the Ministry of Investment

2022

A COMPARATIVE ECONOMIC STUDY ON TREATMENT OF OIL BASED DRILLING FLUIDS BETWEEN KINGDOM OF BAHRAIN AND KINGDOM OF SAUDI ARABIA APPLIED ON THE PETROLEUM SECTOR

Submitted By

Mariam Mohamed Jaafar Abdullah Al-Mowali

Bachleor of Chemistry, Faculty of Science, Bahrain University, 2005 Master in Environmental Management, Arabian Gulf University, 2010

A Thesis Submitted in Partial Fulfillment Of The Requirement for the Doctor of Philosophy Degree In Environmental Sciences

Department of Environmental Economics, Legal and Management Sciences

Under The Supervision of:

1-Prof. Dr. Nader Alber Fanous

Prof. and Head of Department of Business Administration Faculty of Commerce Ain Shams University

2-Prof. Dr. Alaa Abd-All Al-Sadiq

Prof of Environmental and natural resources Arabian Gulf University Kingdom of Bahrain

2022

Dedicate

To the honorable parents, may God protect them

To my husband and children

To all my family

To all my friends and those who were with me and accompanying me during my studies at the university

To everyone who contributed to teaching me even a letter in my academic life

Thanks and appreciation

Praise be to God, thank you very much, good and blessed,

the fullness of the heavens and the earth, for what He has

honored me with in completing this study, which I hope you

will be satisfied with.

Then, I cannot fail to express my sincere thanks and great

gratitude to Mr. Prof. Dr/Nader Albair Fanous Professor

of Business Administration Faculty of Commerce Ain

Shams University

As well as professors, doctors, members of the discussion

and judgment committee.

You all have my sincere thanks, appreciation and respect.

researcher:Mariam Al-Mowali

Abstract

This study deals fully with the comparison between the countries of Bahrain and Saudi Arabia in terms of the economic path and an understanding of the extent of the impact of this study on the oil sector. The study deals with an understanding of the different mechanisms of the impact of treatment of oil liquids on the economy of the two countries and how there can be different ways to support the process of oil recovery and treatment of oil liquids for both countries. The study attempts to shed light on the work mechanisms of both countries and understand these different paths that the two countries undertake financially to deal with this framework and provide the main needs completely locally internationally. The theoretical framework is applied through presenting a group of previous studies in this field and knowing the importance of this process and the role played by both countries. The two countries are also compared to understand fixed plans and mechanisms to support this process and to know the most important factors affecting economically the process of treating oil liquids. I relied on the analytical approach to know the effects of oil-based liquids treatment between the Kingdom of Bahrain and the Kingdom of Saudi Arabia on the petroleum sector. Oyo and the most important challenges facing them, and the importance of establishing an infrastructure for waste oil management and knowing the large costs has been demonstrated, as well as the extent of the impact of the global economic framework and the impact of oil on the countries of Bahrain and the Kingdom of Saudi Arabia. The oil and gas industry, as well as how to benefit from nanotechnology, which has recently emerged in this field.

Contents Table

Abstract		•••••
1- Chapter	(1): Research Framework	
1.1 In	troduction	1
1.2 O	bjectives	6
1.3 Re	esearch Questions	7
1.4 Re	esearch Hypothesis	9
1.5 Li	mitations of the study	9
1.6 Ke	eywords & Abbreviations	10
2- Chapter	(2): Theoretical Frameworks	
2.1Econo	omic approaches to energy quality	13
and D	conomic path of the process of treating oil liquids brilling Wastes Generation and Management bach	15
	ased drill cuttings emission Treatment and	13
	omic Analysis of Oilfield Waste Management	20
2.4Treatr	ment methods of oil-based drill cuttings	17
	d oil market prospect with reference to the Saudi hrain position and its Fiscal Politic	31
	The global oil market and its effect on Oil based iquid	31
	Middle East Drilling Fluid Market Size Share and Tre	
2.5.3 S	Saudi Fiscal Policy and its effect on Oil liquid field	36
2.5.4 E	Bahrain Fiscal Policy and its effect on Oil liquid field	l39
Evalu	ate the performance of variables	

3- Chap	ter (3): Literature Review	
Literatur	re review	46
	rature review deals with the problems of waste dispos	
	rature review deals with comparing the economic feasting drilling fluids.	-
4-Chapt	ter (4): Research Methodology and Testing Hypotl	heses
1.	Introduction	64
2.	Descriptive Statistics	66
3.	Testing Hypotheses	67
	4.3.1: Determinants of Q1_B	67
	4.3.2: Determinants of Q1_S	70
	4.3.3: Determinants of Q2_B	73
	4.3.4: Determinants of Q2_S	76
	4.3.5: Determinants of P1_B	67
	4.3.6: Determinants of P1_S	82
	4.3.7: Determinants of P2_B.	85
	4.3.8: Determinants of P2_S	88
	4.3.9: Determinants of P3_B	91
	4.3.10: Determinants of P3_S	94
	4.3.11: Determinants of P4_B	97
	4.3.12: Determinants of P4_S	100
	4.3.13: Determinants of P5_B	103
	4.3.14: Determinants of P5_S	106
	4.3.15: Determinants of A1_B	109
	4.3.16: Determinants of A1 S	112

4.3.17: Determinants of A2_B	115
4.3.18: Determinants of A2_S	118
4.3.19: Determinants of A3_B	121
4.3.20: Determinants of A3_S	124
4.3.21: Determinants of A4_B	127
4.3.22: Determinants of A4_S	130
4.3.23: Determinants of L1_B	133
4.3.24: Determinants of L1_S	136
4.3.25: Determinants of L2_B	139
4.3.26: Determinants of L2_S	142
4.3.27: Determinants of L3_B	145
4.3.28: Determinants of L3_S	148
4.3.29: Determinants of L4_B	151
4.3.30: Determinants of L4_S	154
4.3.31: Determinants of L5_B	157
4.3.32: Determinants of L5_S	160
4.3.33: Significance of Differences	163
4. Discussion & Analysis	164
5-Chapter (5): Conclusion & Recommendation	
Conclusion	166
Recommendations	167
References	170

List of Figures

Figure (1): Japanese imports of crude Oil by Origin from Saudi Arabia
Figure (2): Oil and Natural Gas Contribution to GDP of GCC K
Figure (3) : Drilling Fluids – Gumpro Drilling Fluids
Figure (4): Saudi Arabia Drilling Fluids Market, by product. 2012:2022
Figure (5): Energy subsidy reform: increases in energy commodity
and service prices in Saudi Arabia since 201625
Figure (6): Saudi Arabia position in Oil Producer in 201827
Figure (7): Bahrain Economic performance from 2000 to 2020 29
Figure (8): Bahrain Oil and Refining Sector to 2016
Figure (9): Bahrain's Financial Indicators for 2017
Figure (10): Shows Quick Ratio for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies
Figure (11): Shows Quick Current Ratio for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies59
Figure (12): Shows Gross Profit Margin for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies61
Figure (13): Shows Operating Profit Margin for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies
Figure (14): Shows Net Profit Margin for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies
Figure (15): Shows Return on assets for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies
Figure (16): Shows Return on Equity for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies63

Figure (17)	Shows Inventory Turnover for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	65
Figure (18)): Shows Notes Receivable Turnover for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	65
Figure (19)	Shows Fixed Assets Turnover for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	66
Figure (20)	Shows Assets Turnover for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	66
Figure (21)	Shows Total Debits to Total Assets for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	68
Figure (22)	Shows Total Debits to Total Equity for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	68
Figure (23)	Shows Total Current Debits to Total Assets for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	69
Figure (24)	Shows Total Long Term Debits to Total Assets (resource of finance) for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	69
Figure (25)	Shows Interest Coverage Ratio for Petro Rabigh (KSA) and The Oil & Gas Holding (Bahrain) Companies	70
Figure (26)): schematic diagram of our proposed modification of the pre-treatment unit for efficient handling of heavy crude oil	72
Figure (27)): Reducing the Emissions of Energy-Intensive Oils Through Innovation	73

Figure (2	28): The effect of sheer stress	97
Figure (2	29): the mud tests was additionally decided utilizing the Fann V-G viscometer	98
Figure (30): The filtration test performed utilizing standard cell at API state	. 102
Figure (3	31): the particle size distribution (DLS) of synthesized calcium carbonate nanoparticle. Average particle size of nanoparticle is 55.4 nm and particle size distribution is narrow in water based fluid	.111
Figure (3	32): Distribution of investigation for the different NP in the oil and gas applications	.112
Figure (3	33): Performance of carbonate calcium nanoparticles as filtration loss control agent of water-based drilling fluid	.115